



## **FINAL REPORT**

# **ZIMBABWE NATIONAL INTEGRATED HEALTH FACILITY ASSESSMENT**

**DEC 2011 – JAN 2012**

## Forward

Zimbabwe's health sector is just emerging from a prolonged period of under-investment, which saw a sharp deterioration in the quality of care offered at our health facilities. More than a decade of economic decline led to a reduction in healthcare budgets, affecting provision at all levels. As a result, Zimbabweans continue to experience a heavy burden of disease, dominated by preventable diseases such as HIV and AIDS, malaria, tuberculosis, vaccine-preventable diseases, diarrhoeal diseases and health issues affecting pregnant women and neonates.

Of great concern to my Ministry is the high maternal mortality rate of around 960 per 100 000 births. Currently an estimated 39 percent of women are giving birth outside the health system. While the costs of delivering in health institutions is often the determining factor, other causes such as distance to health facilities and lack of transport also contribute to the high number of women giving birth at home with all the attendant risks that this entails.

Zimbabwe's health sector faces numerous challenges: a shortage of skilled professionals and healthcare staff; an eroded infrastructure with ill-equipped hospitals; and a lack of essential medicines and commodities. The deterioration in Zimbabwe's healthcare services coincided with a fall in demand for services, following the introduction of user fees. While the Government policy is to provide free health services for pregnant and lactating mothers, the policy has proved to be difficult to implement. In the absence of substantial government financial support, user fees provide a significant income for many health facilities, enabling them to provide at least the minimum of services.

Following the formation of the Government of National Unity in February 2009, the government developed The National Health Strategy for Zimbabwe. This is the health-sector recovery plan, which seeks to reverse the decline in the performance of the country's health delivery system, especially as it impacted on universal access to primary health care by vulnerable populations. The goals of the plan include tackling levels of health financing and thus improving access to basic medical equipment and essential medicines; taking steps to attract and retain health workers in the public health sector; and laying the foundations for an investment policy to fund the rehabilitation and development of the health services infrastructure.

In 2010, the Ministry of Health and Child Welfare developed the Health Sector Investment Case, which identifies priority areas for investment in the health sector. In partnership with international donors, the Government also formulated the five-year Health Transition Fund, which will contribute to a substantial reduction in maternal and child mortality rates. For its current phase 2011 to 2015, has received pledges of US\$435 million to reduce the high maternal and child mortality rates, strengthen health systems and abolish maternal and child user fees.

The National Integrated Health Facility Assessment (NIHFA), is an institution-based assessment of the health sector, which will complement the initiatives outlined above by

providing an up-to-date analysis of the needs of individual health facilities throughout the country. Covering a total of 1375 public health facilities countrywide or 95 percent of the facilities, the NIHFA is perhaps the most comprehensive assessment of the health care delivery system in Zimbabwe that has been carried out to date.

The NIHFA identifies gaps in service provision at institution level making it easier for the Ministry and its international partners, to come up with targeted interventions towards the recovery of the health sector in Zimbabwe. The NIHFA will therefore enable the government and funding partners to channel resources to more specific interventions guided by the needs identified in this report.

Let me take this opportunity to express my personal appreciation and gratitude to all those who made the production of the NIHFA possible, in particular the NIFHFA Task Force, the research team and staff in my Ministry who collaborated in the production of this report and our international partners, in particular UNICEF, USAID, EU, UNFPA, ESP and WHO for providing financial and material support for this worthwhile initiative.

**Dr Henry Madzorera**

**Minister of Health and Child Welfare**

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## Executive Summary

Zimbabwe is recovering from an unprecedented socio-economic decline, which has significantly compromised the availability, use, and quality of health and social services. The result of the decline has been a systematic decrease in coverage of most basic services leading to a stagnation or deterioration of most health indicators and a rising maternal and child mortality rate. Over the past three years, the Ministry of Health and Child Welfare (MoHCW) has commissioned several assessments to generate information for evidence-based planning and strengthening of the national health system. However, these assessments have generally been conducted at a high level and have often been very rapid, thus not providing specific information on gaps and needs at the operational or facility level.

It is against this background that a National Integrated Health Facility Assessment (NIHFA) was commissioned through collaboration between the MOHCW and multilateral and bilateral donors, United Nations (UN) Agencies and Non-Governmental Organisation (NGOs) partners. A task force was established in 2010 to spearhead these efforts, chaired by the MoHCW, with participation of multiple stakeholders. The overall objectives of the study were developed by the NIHFA task force to reflect the needs of the Ministry of Health and Child Welfare.

### ***Overall objectives of the National Integrated Health Facility Assessment***

1. To obtain information on functionality, coverage and access to health services at public and private health facilities in Zimbabwe, with a particular focus on Maternal, Newborn and Child Health services.
2. To assess availability, distribution and functional status of available human resources, medical supplies, equipment and infrastructure necessary for high coverage of quality health services.
3. To assess the quality of Maternal, Newborn and Child health (MNCH) services provided by health facilities through assessment of knowledge and competency.
4. To make recommendations and evidence-based plans for targeting support needed based on data obtained.

From the outset of this assessment, the MoHCW and partners recognised that in order to gather enough information to answer all the critical questions and objectives of the study, a number of different methodologies would be required. Therefore the assessment was divided into two major components:

**1) Health facility needs assessment:** involving a detailed analysis of individual health facility needs at all public health facilities nationwide, documented through a 70-paged self-administered questionnaire; and

**2) An embedded 'Equity and Quality of Care (E&QOC) Study':** undertaken in 309 health facilities and involving in-depth analysis using both quantitative and qualitative methodologies to ascertain the quality and equity of care of health services with a focus on MNCH issues. The E&QOC was further sub-divided into two, based on the methodologies used, with the first part called the E&QOC survey which involved in-depth interviews with health workers and exit interviews with mothers/carers attending Antenatal Care (ANC) and Child Health (CH) clinics. The second part known as the QOC Observation component,

involved observations being carried out during ANC, Labour and Delivery, Postnatal Care (PNC) and Child health consultations with the purpose of assessing these against national standards of care.

A team of consultants was recruited to lead the implementation of the NIHFA. All Provincial Medical Directors, Provincial Nursing Officers, District Medical Officers, and District Nursing Officers were involved in supporting the process, particularly in supervising all facilities to complete the health facility assessment questionnaire. For the E&QOC components of the assessment, additional research teams consisting of experienced health workers were formed to visit sites to carry out interviews and observations of clinical care practices.

A total of 8 different tools were developed to support the various aspects of information collection within the NIHFA. These are all described in detail under the different sections of this report and can be made available on request to the MoHCW. Fieldwork began in December 2011 after an extensive period of planning, training and preparation of 18 months. Data collection for all components of the assessment was completed by the end of February 2012. Thirty data entry clerks were recruited with oversight provided by a Biostatistician and Data Analyst specialist. Data cleaning was finalised and data analysis commenced in May 2012. Three databases were developed to analyse the different components of the overall assessment and reports were finally compiled by September 2012 before final editing. The following summary below provides an overview of the critical findings from the different components of the NIHFA. The subsequent sections of the report obviously go through these in more detail. More information was collected than is presented in this overall report and the MoHCW has all the relevant databases for further in-depth analysis of the data if required.

### **Summary of Findings from the Health Facility Assessment Survey**

The self-administered tool that went out to every health facility in Zimbabwe covered the following areas of enquiry including: General and Facility Identifiers; Morbidity and Mortality patterns; Human Resources for Health; Service Delivery - General; Service Delivery - Specific Health Services; Other services supporting Service Delivery; Health Information; Health Financing; Governance and Leadership; Health Centre Inventory and Consumption of Consumables. A summary of the findings from this part of the assessment is given below.

Responses were received from a total of 1,375 facilities with an overall response rate of 92.5%. A total of 125 hospitals responded including: 6 Central Hospitals; 8 Provincial Hospitals; 50 District Hospitals; 46 Mission Hospitals; and 15 other facilities including some private facilities. A total of 1,250 Level 1 facilities also participated broken down to include: 61 rural hospitals; 49 Polyclinic; 1024 Rural Health Clinics; 40 Satellite clinics; 76 other types of facilities such as private clinics.

#### ***Overall morbidity trends and maternal mortality***

- The commonest two top ranking diseases seen at Level 1 and hospital facilities in Under 5 year old children were diarrhoea and Acute Respiratory Infections. Rural health centres attended the most outpatient consultations attending to 10,846,112 cases between Jan-Dec 2010. District hospitals admitted the most inpatient cases (34%).

- In total 905 maternal deaths were reported by both Level 1 and hospital facilities in 2010. The majority of maternal deaths occurred at a hospital level (68%), with 28% occurring in the community and only 3.8% at Level 1 facilities. Of those occurring at Level 1 facilities, the majority occurred at a rural health centre. The majority of maternal deaths (48%) reported by hospitals occurred at the central hospital level.
- A total of 4,380 neonatal deaths occurred in 2010. Hospitals reported the highest number of neonatal deaths, 92% compared with 8% occurring at Level 1 facilities.

### ***Human Resources for Health***

- The overall vacancy rate in December 2011 for doctors was 44% compared to 11% of nurses. The vacancy rates for specialist doctors were high with vacancy rates for surgeons at 34%, anaesthetists at 69% and paediatricians at 65%.
- Crude ratios of health worker to population served rates were calculated. Estimated ratios for doctors was 1:15,473 people; for nurses was 1:1,136; and for midwives was one midwife for every 988 women of reproductive age.

### ***In-service Training***

- Most of the in-service training provided in the past 2 years focused on HIV, TB and Malaria. Significantly less training was conducted for IMCI, FP and EmONC. The most commonly mentioned area of training needed was midwifery.
- Among Level 1 facilities, IEC materials on EmONC (14%) and IMCI 23% were the least available and brochures with key pregnancy related messages only available in 29% of hospital facilities.

### ***Emergency services***

- Among Level 1 facilities, 73% reported having a trained health professional available on call after hours. 94% of the hospitals have a trained health professional at all times.
- The maximum distance between a health facility and the next referral level of care is 351km and this was in Matabeleland South Province.

### ***Infection Control***

- Only 29% of Level 1 facilities reported adequate stock of disinfectants in the last 6 months. Less than half of the hospitals (47%) reported that they had adequate supplies of disinfectants to last 6 months.
- Less than half (45%) of all Level 1 and hospital facilities had a functional incinerator.
- Less than a third (32%) of all health facilities (N=1375) had health facility guidelines for infection control.

### ***Antenatal Care Services***

- A total of 546,592 ANC cases were attended to at both Level 1 facilities and hospitals in 2010. This includes repeat visits. Of these 68% of ANC cases are attended to at Level 1 facilities.
- Over 90% of all facilities offered key components of routine Antenatal care such as checking weight, blood pressure, and testing for syphilis and HIV. However at Level 1 facilities, only 31% tested for anaemia and only 16% carried out routine urinalysis for pregnant women compared to anaemia testing at 73% of hospitals and urinalysis at 57% of hospitals. Critical shortages of basic equipment to carry out routine Antenatal care including gestation calculators, fetoscopes, glucometers and haemoglobinometers were noted particularly at Level 1 facilities.

- Among Level 1 facilities almost half, 45.5% reported charging user fees for ANC. ANC User fee charges ranged between \$4 to \$35.

### ***Labour and Delivery Services***

- The total number of deliveries reported in 2010 was 367,471 of which 18% (64,907) were home deliveries. Of all institutional deliveries, 59% occurred at a hospital level. Harare managed the highest number of deliveries, reporting 61,867 (20%) in 2010. 6% of all deliveries were by Caesarean Section.
- Out of the 117 hospitals offering delivery services, 44 (38%) were able to deliver six of eight Comprehensive Emergency Obstetric Care services. However all central hospitals were able to provide all eight signal functions of comprehensive obstetric care (CEmOC). Only 53% of hospitals reported having the capacity to provide blood transfusions and only 61% reported capacity to carry out Caesarean Sections.
- Only 45% of Level 1 facilities were categorised as providing Basic Emergency Obstetric Care minus 1 facilities i.e. ability to perform 5 out of 6 basic signal functions according to WHO recommendations. While approximately 50% of Level 1 facilities provided parenteral antibiotics and oxytocics, only 21% provided parenteral anti-convulsants and 27% could perform manual removal of a placenta. 89% of Level 1 facilities conducted normal deliveries but less than two thirds (60%) of these facilities used a partograph to monitor labour progress in comparison to more than 90% among hospitals.
- The majority of Level 1 facilities lacked capacity to resuscitate newborn babies as only 44% reported used bag and mask ventilation. Only 11% provided oxygen for resuscitation of newborns compared to 84% of the hospitals.
- Among Level 1 facilities that provided delivery services (n=1110), 15.1% charged user fees for deliveries with a range between \$1 to \$250. 56% of hospitals reported charging user fees for delivery with an average charge at central hospitals of \$89 compared to lower charges of \$16 at District hospitals.
- 97% of Level 1 facilities provided postnatal care with three quarters providing PNC visits at 3 days and 7 days, while the vast majority 95% offered services at the 6-week visit. At hospitals, less than 22% provide cervical cancer screening as part of the routine 6-week postnatal care visit.

### ***Family Planning services***

- Over 95% of the Level 1 facilities and 80% of hospitals reported providing oral contraceptives, depo Provera injection, and both male and female condoms. Access to long acting methods of FP was more centralized with 70% of hospitals providing access to implants compared to 9% of Level 1 facilities. Access to IUCDs is generally poor with only 8% of hospitals offering insertion and less than 3% of Level 1 facilities providing IUCDs.

### ***Immunisation Services***

- Ninety per cent of Level 1 facilities provided routine immunisation on a daily basis in comparison to 83% of hospitals.
- A small proportion of Level 1 facilities reported stock outs of vaccines with approximately 13% reporting stock outs of Oral Polio vaccine (OPV) in the previous six months preceding the assessment.

### ***Child Health Services***

- Level 1 facilities in rural provinces were more likely to manage severely ill children compared to urban areas. More than 90% of hospitals reported managing severe acute pneumonia, diarrhoea and malaria for children under 5 years of age. Capacity to manage acute malnutrition was only reported by 23% of Level 1 facilities and 88% of hospitals.
- User fees for curative child health services were being charged on average at 15% of Level 1 facilities and 24% of hospitals.

### ***PMTCT, HIV and Sexually Transmitted Infection Services***

- Among pregnant women who were tested for HIV at all facilities, 14% tested HIV positive. The majority (94%) of women who tested HIV positive were commenced on ARV prophylaxis and 30% were commenced on antiretroviral therapy.
- Almost all (98%) of Level 1 facilities offer STI diagnosis and treatment services with half of them routinely charging a fee for these services.
- 96% of Level 1 facilities offer Provider Initiated Counseling and Testing (PITC). 79% of facilities offer Early Infant Diagnosis using Dried Blood Spots for PCR.
- 89% of Level 1 facilities routinely screen TB patients for HIV.
- More than 90% of hospitals reported providing both adult and paediatric ART initiation and follow up services. No Level 1 facilities in Harare or Bulawayo initiated children on ART and significantly fewer Level 1 facilities in Harare and Bulawayo offered paediatric ART follow-up services than other provinces.

### ***TB Services***

- A total of 123,484 suspected cases of TB were seen at both Level 1 and hospital facilities in 2010. At both Level 1 and hospital facilities, 3,447 TB defaulters were recorded.
- The majority of hospitals 86% reported offering Directly Observed Treatment (DOT).
- 15% of Level 1 facilities reported stock outs of Anti-TB fixed drug combinations compared to 10% of all hospitals. Central hospitals reported higher rates of stock outs of fixed drug combinations.
- 83% of Level 1 facilities collected sputum and sent samples for microscopy to a higher level of care although patients were responsible in 31% of cases to organize transfer of samples. 97% of hospitals reported collecting and receiving results from sputum analysis within 3 days.

### ***Malaria Services***

- Manicaland had the highest number of malaria cases confirmed, reporting 112,994 in 2010.
- Use of Rapid Diagnostic tests in the diagnosis of malaria was almost universal with 95% in both Level 1 and hospitals indicating adherence to the current malaria case management guidelines.
- Stock outs of quinine were the most reported category with 30.9% of the Level 1 facilities reporting stock outs of the drug in the previous 30 days. Manicaland Province, which has the highest burden of malaria but also, reported the highest levels of stock outs of oral quinine among 52% of Level 1 facilities.

### ***Non-communicable diseases***

- Injuries accounted for most of the non-communicable conditions. A significant number of Zimbabweans presented with non-communicable conditions 597,661, with

hypertension, followed by asthma and then diabetes contributing to the highest burden of diseases.

- Whilst most facilities reported having sufficient equipment to measure blood pressure, only 288 glucometres were available at the 1,250 Level 1 facilities.
- A total of 29,778 disabled persons were registered at all types of facilities. 67% of the health facilities reported that they require staff trained on mental health.

### ***Pharmacy Services***

- Most pharmacists are stationed at central hospital level with only 11 pharmacists manning the 50 districts hospitals.
- **Stock outs of drugs:** 33% of Level 1 facilities reported stock outs of paediatric Cotrimoxazole suspension lasting an average of 125 days. 37% of hospitals reported stock outs of Amoxicillin syrup. Level 1 facilities reported Gentamycin stock outs in all provinces with rates as high as 69% although a smaller proportion of hospitals (13%) reported stock outs in the previous 30 days. The majority of Level 1 facilities in Mashonaland West (81%) and Masvingo (80%) reported stock outs of methyldopa used in the management of pregnancy related hypertension. Stock out of Oxytocin ranged between 18-47% at Level 1 facilities compared to 13% stock out levels at hospitals. 51% of hospitals reported stock outs of Vitamin K injection.

### ***Laboratory Services***

- Among the hospitals, 61% of medical laboratory scientist posts were filled.
- Only 15% of Level 1 facilities reported having the capacity to check for haemoglobin levels with as few as 22% having a haemoglobin meter. In contrast, a high proportion (91%) of Level 1 facilities offered HIV antibody testing. Only 30% of Level 1 facilities were able to conduct pregnancy tests. Less than half, 43% of hospitals provided Urea and Electrolyte testing. 74% of hospitals were able to conduct CD4 testing in comparison to only 6.6% of Level 1 facilities. The majority of hospitals were able to carry out malaria smears 87% and TB smears 82%.
- On average 41% of hospitals charged for laboratory tests.

### ***Medical Equipment***

- At Level 1 facilities, there was an 80% shortfall of examination couches with only 175 examination couches with lithotomy poles being available compared to the 886 required. There were also shortages of basic emergency resuscitation equipment noted among Level 1 facilities, for example there was a 44% shortage of adult ambu bags and masks. At the 1,250 Level 1 facilities only 257 oxygen cylinders with a suitable gauge were available, a shortfall of 82%. Similar shortfalls were found at hospitals with 82% more oxygen cylinders required. Both adult and paediatric laryngoscopes were in short supply at hospitals with shortages of adults of the magnitude of 77% increasing to 90% for paediatric laryngoscopes.

### ***Health facility Infrastructure***

- The majority (76%) of Level 1 facilities had waiting areas where clients were protected from the rain or sun.
- While 77% of Level 1 facilities had staff accommodation, only 45% reported the accommodation to be adequate. This compares to a greater availability of staff accommodation found at 89% of the hospitals but only 13% reported this as adequate.

- 40% of Level 1 facilities had a functional flush system toilet compared to 86% of hospitals. The majority (82%) of hospitals had piped water compared to only 46% of Level 1 facilities where reliance on boreholes was more predominant.
- Only 10% of the Level 1 facilities had functional generators for power back up compared to 75% of hospitals. Reliability of fuel for generators was however of concern.

#### ***Communications and IT services***

- Only 19% of Level 1 facilities had a functional landline compared to 50% of hospital facilities. The majority of health workers at both Level 1 and hospital facilities had personal mobile phones. Only 12% of Level 1 facilities had a functional radio communication system. Only 14% of clinics had access to a computer compared to 96% of hospitals and Internet access was only reported by 3% of Level 1 facilities compared to 55% of hospitals.

#### ***Hospital Transport***

- At hospital level, there were 199 ambulances available but only half (55%) of these were functional. Only 65% of hospitals reported a regular supply of fuel to run the ambulances. On average there was one functional ambulance per hospital, with Harare having the least number per hospitals covered by ambulance services.

#### ***Health Information Systems***

- Vacancy rates for Health information officers were found to be 33% and for Health information assistants 18%. Among all Level 1 and hospital facilities only 688 personnel had been trained in data management.
- While Level 1 facilities reported relatively high completion rates for T5 reports, very few (32%) compiled facility status reports. Similarly hospitals reported submitting T5 forms in a timely fashion (81%) more often than the T9 reports (64%).
- 63% of Level 1 facilities had Epidemic Preparedness and Response plan in place but only 37% reported reviewing this on an annual basis.
- 89% of Level 1 facilities reported receiving a copy of Health matters and an equal proportion found the content useful.

#### ***Health financing***

- 40% of Level 1 facilities indicated user fees as a major source of funding. 40% of Level 1 facilities routinely charged some form of user fees for ANC and outpatient services and fees were more likely to be charged in Harare and Bulawayo. User fees at all facilities were most likely to be waived for the elderly and least likely for widows and orphans. On average 35% of Level 1 facilities reported displaying of guidelines on user fees compared to 61% of hospitals.

#### ***Governance and Leadership***

- 74% of Level 1 facilities reported that all facility workers had written job descriptions but only 40% had staff development plans in place. According to Level 1 facilities, staff appraisals were carried out twice a year but few linked this to salary adjustments or incentives.
- At a hospital level on average there were staff vacancy rates for hospital administrators and executive officers of 40%.

- Among hospitals, 83% reported having an annual work plan compared to only 65% of Level 1 facilities.
- On average, 7 visits were made to each Level 1 facility with national officers from the EPI and HIV units visiting more frequently than other departments.
- Among hospitals an average of four supervisory visits were made to a facility from a higher level. Encouragingly among the hospitals reporting, 78.4% reported that changes had been effected owing to support and supervision visits.
- 78% of Level 1 facilities reported having a health centre committee in place. However a smaller proportion of facilities from Harare and Bulawayo reported having health centre committees in place with 33% and 5% respectively.
- More Level 1 facilities (84%) had a register of community health workers in place compared to only 73% of hospitals. Official meetings with the community were more likely to be held by Level 1 facilities (60%) compared to by hospitals (47%).
- A high proportion (73%) of Level 1 facilities and 70% of hospitals reported having a mechanism in place where client feedback could be ascertained. However mechanisms used to obtain feedback varied greatly between facilities.
- 83% of facilities reported routinely monitoring the quality of care although the processes of doing this varied with only 41% of Level 1 facilities conducting clinical audit meetings on a regular basis.
- Shortages of staff were reported as being one of the greatest challenges identified by over 70% of both Level 1 and hospital facilities, with lack of equipment being the second mostly commonly cited problem.

#### ***Commodities***

- Among Level 1 facilities, few stock outs for cannulas (7%), and suturing materials (5%) were reported. Stock outs of delivery packs were reported by 14% of Level 1 facilities.

### **Summary of Findings from the Equity and Quality of Care Survey**

In total, 1864 ANC clients and 1865 caregivers attending Child Health services were interviewed. In addition, a total of 597 health workers participated in the assessment with 71% female. Of the 597 respondents, 572 (96%) were clinical with the majority of these being Primary Care Nurses (46%) and State Registered Nurses (25%).

#### ***Staff Training from E&QOC***

The number of health workers who reported receiving some training in Emergency Obstetric and Neonatal Care (EmONC) was low with nearly half of the nursing cadres untrained. Nurse professionals trained in IMCI and Labour and Delivery were observed to be of similarly low proportions across the facilities.

Most frequently mentioned subjects required for additional training were IMNCI (59%), HIV/AIDS Care and Management (58%), Labour and Delivery (57%) and EmONC. Health workers from rural hospitals had markedly higher proportions requesting trainings across all the training areas.

#### ***Knowledge Levels among Health Workers from E&QOC***

Average knowledge on child health was higher than that of maternal health. Primary care nurses reported the least knowledge scores on child health. Clinical staff aged 35-49 years

exhibited higher maternal knowledge scores relative to the younger and older age groups. Health workers trained on EmONC, labour and childbirth scored higher on maternal health than those who were never trained. Health workers who had received training on ante and postnatal care had significantly higher mean scores for maternal health knowledge compared to those who did not receive this training. Mission clinics had higher mean scores compared to other categories of institutions for knowledge on both child health and maternal health.

#### ***Health Worker Satisfaction and Motivation from E&QOC***

Satisfaction was high for areas covering the relationships with provincial and district health executives, relationships with the community and meeting the needs of the community. Dissatisfaction was high for salary, employment benefits, opportunities for promotion and the general state/physical condition of the health facility buildings.

#### ***Findings from the Exit Interviews with mothers/caregivers attending ANC and CH services***

A total of 1864 women attending ANC clinics and 1865 caregivers attending a Child Health clinic were interviewed. The majority of the antenatal clients interviewed were between 20 and 34 years of age, educated up to secondary level, middle income quintile, and residing within 10 kms of the health centers. Lowest most income quintile was only around four percent in the sample. Most common reported reason for accessing care from a facility was proximity.

#### ***Reported quality of delivery of ANC services from E&QOC***

More than 90% women were weighed, had their blood pressure measured, abdomen palpated and measured with a tape during the ANC visits. Only half and one-tenth women respectively had their blood and urine samples taken. More educated and richer women, accessing care from a private or Mission health center were more likely to get their urine samples taken.

#### ***Summary of Key findings on delivery of Child Health services from E&QOC***

During the last visit for the illness of the under-five children to the health facilities, only half were informed about the illness, 65 per cent had growth charts plotted, 75 per cent were physically examined and 86 per cent were weighed. Among all under-five children, infants were more likely to be plotted on a growth chart. Children of educated mothers (or caregivers) were more likely to be physically examined. More children accessing care from mission and private health facilities had their growth chart plotted.

#### ***Summary of Key findings on client satisfaction***

Overall satisfaction scores were highest for clients accessing care from private health facilities. Municipal clinics and rural health centers had higher proportions of clients satisfied with a health provider's attitude compared to clients accessing services at the central hospital. Most common dissatisfaction was on accessibility and convenience to the health centers.

#### ***Summary of Key findings on equity of access to ANC and Child health services***

For antenatal care, less than 4 per cent from the poorest quintile were represented in the study sample compared to 19 per cent in the reference population as per ZDHS 2010-11. Only 4.5 per cent from the poorest quintile were represented in the child health sample compared to 25 per cent in the reference population as per ZDHS 2010-11. Reported quality

of care was higher for antenatal services than child health indicating that the standards are not being adhered to for child health services. Remote residents were more dissatisfied with the quality of service provision than their nearer counterparts.

### **Findings from the MNCH Quality of Care Observations**

Health workers were interviewed and observations on clinical practice were made at 303 health facilities across the country. In total 662 health workers were interviewed; and observations were made during: 720 ANC consultations; 476 Labour and Delivery (L&D); 566 Postnatal care (PNC) consultations; and 555 Child Health consultations.

### **Findings of Quality of Care from Maternal and Newborn Observations**

During the assessment, 18 cases of postpartum haemorrhage were observed; 6 cases of pre-eclampsia; 43 cases of neonatal asphyxia; 9 still births and 1 newborn death.

#### ***Facility Readiness***

The ability to deliver quality maternal and newborn care at a facility is dependent on basic equipment and commodities being available. While 95% of facilities were found to have HIV/PMTCT commodities available, only 56% had commodities for Emergency Obstetric Care and 54% had sufficient Infection control commodities. On average the health facility readiness to manage Labour and Delivery was found to be 68%, highlighting shortfalls in basic equipment and drugs.

#### ***Health Worker Knowledge in Management of Obstetric and Newborn Complications***

The majority (93%) of health workers interviewed were either midwives or nurses. Knowledge was assessed on topics including the management of routine L&D, PMTCT, Active Management of the Third Stage of Labour (AMSTL), care of the newborn, PPH and postpartum endometritis. Of the 640 HWs, the mean score for knowledge on routine L&D practices was 96% with 78% answering all the L&D questions correctly. However, HWs of all categories, scored very lowly in knowledge tests on the specific details of the management of complications. Lower average mean scores were found on knowledge of AMSTL (55%), PMTCT in L&D (37%), and newborn care (41%). Knowledge on the management of postpartum care was 41% and 45% for endometritis.

#### ***Coverage of BEmONC and CEmONC facilities***

Six per cent of the 252 facilities expected to provide the 7 signal functions satisfied the criteria for BEmONC and 7.4% of 147 hospitals assessed met the standards for CEmONC. Capacity to provide blood transfusions and Caesarean Sections was found at 29% of hospitals. The availability of health workers who can either perform a C/S or provide an anaesthetic appeared to be the most limiting factor in providing these emergency services.

#### ***Quality of care observed during routine Antenatal Care***

Health workers were observed managing 742 ANC cases. The adherence to performance standards in delivering Focused Antenatal Care were assessed. Health workers performed better for components of a general nature like general history taking, general physical examination, and health education on general topics, compared to components that required identification and management of complications of pregnancy. The components in this later group included screening for danger signs, screening for PE/E in ANC, and providing targeted health education on issues such as danger signs and birth planning. On average,

72% of health workers performed all the routine tasks for the initial assessment of the pregnant woman. However only 14% of health workers met the standards to identify danger signs in pregnancy, and only 2% asked about convulsions and 4% enquired about fever. The majority of health workers screened for HIV (72%) in the initial assessment, although few screened for TB (13%), urinary tract infections (10%) or renal disease.

Whilst HIV testing was undertaken at 80% of consultations observed, fewer (54%) performed a syphilis test and even less (5%) checked the urine for infection. Health workers are meant to routinely screen all pregnant women for pre-eclampsia by taking an adequate history, measuring the blood pressure and testing the urine for protein. On average less than 2% of health workers were observed carrying out all three elements of screening for PE/E.

The ANC period is important in providing preventative treatments such as Iron/folic acid, anti-tetanus toxoid and anti-malarials. Only 46% of health workers were observed to provide all the routine preventative medicines. Adequate counselling on danger signs in pregnancy was on average performed by 12% of health workers although 36% of health workers were observed providing education on birth preparation.

#### ***Quality of care observed in Labour and Delivery***

Health workers were observed managing a total of 336 women during labour and delivery. Of these, 95% were spontaneous vaginal deliveries, with 2.7% assisted vaginal deliveries and 2.7% delivered by Caesarean section. The majority (90%) of health workers correctly took a good basic history, but on average only 9% took a complete history to identify danger signs and only one or two out of important past obstetric conditions were checked for. Overall 70% of the tasks performed to ensure an adequate physical examination to assess the stage of labour was carried out satisfactorily by health workers. Health workers performed less well in assessing for pre-eclampsia/eclampsia, with as few as 11% testing urine for the presence of protein. On average appropriate use of the partograph in the first stage of labour was observed in 69% of cases.

Active management of the third stage of labour (AMTSL) is an effective intervention to reduce the risk of PPH. While an uterotonic was used in 92% of cases, the correct timing for administering this according to WHO standards was only undertaken in 50% of cases. Appropriate cord traction and uterine massage were only correctly observed in 47% and 39% respectively. Optimal immediate postpartum care was observed in 57% of cases, but health workers performed less well in monitoring vital signs (41%). Provision of Essential newborn care including appropriate thermal care, cutting of the cord and initiating breastfeeding within the first hour was observed on average, 50% of the time. Sepsis is one of the top 3 causes of maternal mortality in Zimbabwe. Health workers were observed to adhere to 60% of infection prevention standards during L&D.

#### ***Quality of care of Routine Postnatal Care***

A total of 429 mother-baby pair consultations were observed. Again checking for danger signs in the postpartum period was poorly performed by the majority of health workers, and whilst asking about excessive bleeding was observed in 37% of cases, less than 6% of health workers asked about fever or difficulties in breathing. Similar trends were noted for the care provided to newborns and whilst the majority (94%) of health workers examined for signs of cord infection, fewer (46%) observed the baby's breastfeeding or took the baby's temperature (32%). Of mothers found to be HIV-infected, all health workers enquired about the ARV status of both the mother and baby, although few referred the mother for CD4

testing or referred the baby for a DBS test (58%). Health workers were more likely to provide counselling on issues to do with the well being of the baby, but rarely tackle maternal health matters including family planning.

### ***Management of major maternal and newborn complications***

During the assessment, 6 cases of eclampsia were seen and of these only 33% of health workers correctly initially managed the case according to national standards. Eighteen cases of postpartum haemorrhage were diagnosed, and of these health workers satisfied 80% of the standards for the initial management. Of note 43 newborns needed resuscitation and all survived except one newborn.

## **Findings on the Quality of care to manage sick children using the Integrated Management of Childhood illnesses approach**

A total of 441 health workers were observed while managing 555 sick young infants and children at 303 health facilities across the country, with 441 sick children being 2 months – 5 years of age and 114 being 1 week to 2 months of age.

### ***Assessing for General Danger signs***

Correctly identifying and managing general danger signs is an extremely important skill that every health worker should master, in order to provide appropriate treatment to reduce infant and childhood morbidity and mortality. The assessment findings suggest that the skills of health workers in checking and classifying general danger signs in infants and children, was alarmingly low. More than 80% of health workers were not well versed in asking and checking for the five cardinal danger signs, and only 6% correctly classified sick children with these symptoms. Taking into consideration that most health workers have been exposed to the IMCI approach during either pre-service or in-service training (57%), this falls short of good standards of care.

### ***Assessment of the four main symptoms***

While most health workers performed well in enquiring about cough (63%), fever (61%) and diarrhoea (51%), many health workers overlooked asking about ear problems (20%). Although, more than half of the health workers asked about symptoms of cough or difficulties in breathing and made the right assessment, correct classification and management was provided only by 22% of health workers. Findings were similar in the correct classification and management of diarrhoea where only 23% provided the correct treatment. Failures in management and treatment of common childhood illnesses will contribute to the high morbidity and mortality rates in children less than five years of age experienced in Zimbabwe.

The IMCI assessment and classification of sick children with fever essentially helps to target the identification of children with malaria and measles, as well as other children with severe infections. Sixty one percent of the health workers asked or checked for fever, but correct classification and management was made by only 22% and 20% respectively. More worryingly, checking for measles in sick children with fever is supposed to be a mandatory practice in the IMCI approach. However, only 7% of health workers fully enquired and checked for measles as a cause of fever. Of similar concern was the correct classification and treatment of common ear problems. Although, two thirds of health workers asked about ear problems, the correct classification was only made by 21% with as few as 14% correctly treating a child with an ear problem.

### ***Assessing and classifying children for nutritional, HIV/AIDS and Immunisation status***

All the nutritional assessment parameters such as determining the growth pattern were only correctly performed by a third of health workers. The correct classification and management of malnutrition, was only performed by 7% and 6% of the health workers respectively. The same holds true for the assessment and classification of sick children with HIV/AIDS. More than 77% of health workers did not ask about the HIV status of either the mother or the child. More alarmingly of those with unknown HIV status, only 10% of health workers offered or referred the mother/child for PITC, despite there being a national policy to support this. More than 60% of health workers assessed a sick child's immunisation status, although only forty percent gave the vaccine if the child was due.

### ***Assessment of a sick young infant age 1 week up to 2 months***

Most sick young infants with infection or neonatal metabolic problems, commonly present with feeding difficulty, fast breathing, convulsions and temperature instability. Most of the health workers (88%) checked and recorded the temperature of sick young infants seen and two thirds of them asked about difficulties in feeding. However, health workers examination of signs of respiratory distress was poorly performed by most of the health workers observed, as was the assessment of cerebral irritation. Overall only 8% of health workers correctly classified sick young infants for very severe disease and local bacterial infection and 11% correctly managed the sick young infant according to IMCI guidelines.

While 88% of health workers asked and assessed breastfeeding in a sick young infant only 21% enquired about the frequency of breastfeeding, 33% checked for good attachment and effective suckling and as few as 11% correctly managed an infant with feeding problems or very low birth weight. Similar to findings for the older child, less than half of health workers were observed enquiring about the HIV status of the mother and only 29% of health workers enquired whether an infant had taken an HIV test.

## **Recommendations**

With so many findings to absorb from all components of the NIHFA, time is still required to reflect on their implications and define clear set of recommendations to strengthen the health system in Zimbabwe. It is therefore recognised that there is a need to widely disseminate the results and subsequently bring health professionals, policy makers and stakeholders together to identify practical recommendations to address many of the challenges outlined in this report. In the interim, a number of preliminary recommendations have emerged from the different components of the study particularly as they pertain to addressing some of the equity and quality of care components.

### ***Recommendations from the E&QOC component of the study***

#### ***Building capacity of health workers: Need for innovations in training delivery***

- Strengthen and scale-up training of health workers to enhance knowledge and services delivered to patients particularly by nurses. There is a need for additional training on IMNCI, labour and delivery and EmONC.
- Considering the fact that the health facilities are staffed just adequately or understaffed, it might be useful to design in-service training programmes for the health workers, specifically the PCNs.
- The training programmes need to be linked with health worker's day-to-day responsibilities and designed in a flexible manner so that it does not deprive the clients

of their healthcare needs or put additional burden on other colleagues. On the job mentoring would be most beneficial to most of the health workers especially on labour and delivery.

- Along with the training, ongoing mentoring and supervision by their supervisors will be useful and this can be built in to the supportive supervision policy by MoHCW.

#### ***Raising the quality of ANC and child health service delivery***

- Scaling up financing for supportive supervision and on-the-job mentoring is a key investment that will improve knowledge, skills and quality of services offered at different levels of the health system.
- Provision of equipment in accordance with the national guidelines so that the minimum package of services can be offered.

#### ***Enhancing Health Workers' Satisfaction and Motivation***

- Provision of positive working environment including infrastructure and supplies and motivational initiatives such as incentives and career promotion need to be considered.

#### ***Ensuring equity of access to services***

- More numbers of village health workers (VHW) can be deployed after adequate training and establishing supporting systems to bring the system closer to the households.
- Innovative service delivery models such as mobile clinics and health camps at regular intervals should be considered.
- Since training a cadre of VHWs will need some time, certain demand-side measures (e.g. vouchers) can be introduced in the interim to enhance the financial access to care including transportation.
- Supply side initiatives (such as performance based grants/ subsidies) provided to health facilities in return for free health care for specific prioritised services will reduce the formal or informal cost of accessing health care.
- A national policy framework to support innovative health financing instruments such as health insurance for the poor, performance based health facility subsidies, free access to prioritised health services by the poor amongst others will be important given the evidence of inequitable access to health services in Zimbabwe.

### ***Recommendations from the Maternal and Newborn Quality of care component***

#### ***Improving facility capacity to manage MNH services***

- Prioritise Infection Prevention and Control as well as Emergency Obstetric and Newborn Care commodities in procurement plans.
- An opportunity exists to review the primary care kit and related supply chain mechanisms for targeting and streamlining procurements.

#### ***Improving Health worker information and Knowledge***

- The general and consistent knowledge gaps are highly suggestive of primary level weaknesses in knowledge transfer. More information is needed to review pre-service education on MNH for all cadres with the view of strengthening pre-service education curriculum and knowledge transfer approaches. These efforts should be complemented with in-service competency based approaches to transfer and maintain knowledge, including strengthened technical supportive supervision.

### ***Improving management of obstetric and neonatal emergencies***

- Prioritise strengthening the capacity of facilities to support the provision of the full range of signal functions consistently. It may be an opportunity to consider extending funding priorities beyond basic emergency obstetric and newborn care to include the huge needs to ensure facilities can manage the 9 signal functions required of CEmONC, especially the urgent need to improve the capacity to manage Caesarean sections.
- The RH policy review should provide clear guidance on the package of signal functions to be provided at all levels of care and seriously consider task shifting to improve coverage for life saving interventions at lower levels of care.
- The rarity of cases can easily lead to deterioration in competency levels so facility based simulation of emergencies and the increased availability and use of anatomical models for on-the-job training is highly recommended.

### ***Improving Quality of Antenatal and Postnatal Care***

- It is strongly recommended that service delivery guidelines, job aides, and screening tools & checklists for FANC and PNC visits are updated and health workers oriented on these through on-the-job training. This could be included as part of regular supportive supervision.

### ***Improving Quality of Labour & Delivery care***

- Consider reviewing pre-service and in-service education to be more competency-based, including strengthening transfer and retention of learning through post training follow-up and technical supportive supervision.
- Whereas current training efforts have focused on hotel-based, time-bound group trainings targeting EmONC, the gaps demonstrated in assisting normal L&D requires that improved attention be given to pre-service education, as well as on-the-job training targeting management of normal births and Infection prevention.

### ***Recommendations on improving the Quality of care for sick young infants and children***

#### ***Strengthening the IMNCI approach***

- Ensure the revised IMNCI training package is fully incorporated into all nursing and medical schools and ensure all tutors in these training institutions are trained on the updated IMNCI approach.
- Increase the number of health workers who receive in-service training in IMNCI, inclusive of clinical instructors. This training now needs to include the management of newborns in the first week of life, so for those health workers already trained in IMCI, updating on the new neonatal module is still required. All health workers who manage sick children and infants at all levels need to be included in these trainings.
- Customise the IMNCI follow-up training tool, so that it can be used to conduct regular supportive supervision to all health workers who manage sick children, to reinforce their skills through on-the-job training and refreshers.
- A regular supply of essential drugs and consumables used in the management and treatment of sick infants and children is required. The current logistics systems need to be strengthened to support this.
- The community health delivery systems need to be strengthened to promote greater health care seeking behavior in the community.

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## Acronyms

<b>ACT</b>	Artemether/Lumefantine tablets
<b>AFB</b>	Acid Fast Bacilli
<b>AIDS</b>	Acquired Immune Deficiency Syndrome
<b>ANC</b>	Antenatal Care
<b>ASRH</b>	Adolescent Sexual Reproductive health
<b>ARI</b>	Acute Respiratory Infection
<b>ART</b>	Acute Respiratory Infection
<b>ARV</b>	Antiretroviral Therapy
<b>AVD</b>	Assisted Vaginal Delivery
<b>AZT</b>	Zidovudine
<b>BEOC</b>	Basic Essential Obstetric Care
<b>BEmOC</b>	Basic Emergency Obstetric Care
<b>BCG</b>	Bacille de Calmette et Guerin
<b>BP</b>	Blood Pressure
<b>CBD</b>	Community based Distributor
<b>3TC</b>	Lamivudine
<b>CEOC</b>	Comprehensive Essential Obstetric Care
<b>CEmONC</b>	Comprehensive Emergency Obstetric and Newborn Care
<b>CF</b>	Complementary Feeding
<b>CH</b>	Child Health
<b>CHBC</b>	Community Home-Based Care
<b>CHW</b>	Community Health Worker
<b>CMAM</b>	Community Based Management of Acute Malnutrition
<b>CNR</b>	Case Notification Rate
<b>CPT</b>	Cotrimoxazole Preventive Therapy
<b>CS</b>	Caesarean Section
<b>CSS</b>	Care and Support Services
<b>CSSD</b>	Central Sterile Sterilization Department
<b>CT</b>	Counselling and Testing
<b>CTX</b>	Cotrimoxazole
<b>DBS</b>	Dried Blood Spot
<b>D&amp;C</b>	Dilation and Curettage
<b>DDC</b>	District Co-ordination Committee
<b>DEWS</b>	Early Disease Warning System
<b>DHE</b>	District Health Executive
<b>DH</b>	District Hospital
<b>DNA-PCR</b>	Deoxyribonucleic Acid Polymerase Chain Reaction
<b>DOT</b>	Direct Observation of Treatment
<b>DOTS</b>	Direct Observed Therapy, Short Course
<b>DT</b>	Diphtheria Tetanus
<b>DPT</b>	Diphtheria, Pertussis, Tetanus
<b>DPT-HB</b>	Diphtheria, Pertussis, Tetanus, and Hepatitis B vaccine
<b>DTTU</b>	Delivery Top Up Unit
<b>ECGO</b>	Electrocardiogram
<b>EID</b>	Early Infant Diagnosis
<b>EDLIZ</b>	Essential Drug List for Zimbabwe
<b>EmONC</b>	Emergency Obstetric and Newborn Care
<b>EmOC</b>	Emergency Obstetric Care

<b>ENC</b>	Essential Newborn Care
<b>EOC</b>	Essential Obstetric Care
<b>ELISA</b>	Enzyme-linked Immunosorbent Assay
<b>EPI</b>	Expanded Programme on Immunisation
<b>ET</b>	Endotracheal Tube
<b>FBC</b>	Full Blood Count
<b>FCH</b>	Family and Community Health
<b>FP</b>	Family Planning
<b>HB</b>	Haemoglobin
<b>HCC</b>	Centre Committee
<b>HIV</b>	Human Immunodeficiency Virus
<b>HMIS</b>	Health Management Information System
<b>HSB</b>	Health Services Board
<b>HTF</b>	Health Transition Fund
<b>HW</b>	Health Worker
<b>IC</b>	Infection Control
<b>ICPD</b>	International Conference on Population and Development
<b>IDSR</b>	Integrated Disease Surveillance and Response
<b>IMCI</b>	Integrated Management of Childhood Illness
<b>IMNCI</b>	Integrated management of Neonatal and Childhood Illnesses
<b>IMPAC</b>	Integrated Management of Pregnancy and Childbirth
<b>IMR</b>	Infant Mortality Rate
<b>IP</b>	Infection Prevention
<b>IPC</b>	Infection Prevention Control
<b>IPT</b>	Intermittent Preventive Treatment
<b>ITN</b>	Insecticide-treated (bed) Net
<b>IUD</b>	Intrauterine Contraceptive Device
<b>IV</b>	Intravenous
<b>IYCF</b>	Infant and Young Child Feeding
<b>MCAZ</b>	Medicines Control Authority Zimbabwe
<b>MCH</b>	Maternal and Child Health
<b>MDG</b>	Millennium Development Goal
<b>MDR-TB</b>	Multi-drug-Resistant Tuberculosis
<b>MER</b>	More Efficacious Regimen
<b>MMR</b>	Maternal Mortality Ratio
<b>MOHCW</b>	Ministry of Health and Child Welfare
<b>MUAC</b>	Mid-Upper Arm Circumference
<b>NGO</b>	Non-governmental organization
<b>NIHFA</b>	National Integrated Health Facility Assessment
<b>NVP</b>	Nevirapine
<b>OCP</b>	Oral Combined Pill
<b>OI</b>	Opportunistic Infection
<b>OPD</b>	Outpatient Department
<b>OPV</b>	Oral Polio Vaccine
<b>ORS</b>	Oral Rehydration Solution
<b>ORT</b>	Oral Rehydration Therapy
<b>PCR</b>	Polymerase chain reaction
<b>PEP</b>	Post-Exposure Prophylaxis
<b>PHC</b>	Primary Health Care
<b>PHE</b>	Provincial Health Executive

<b>PITC</b>	Provider-Initiated Testing and Counselling
<b>PH</b>	Provincial Hospital
<b>PMD</b>	Provincial Medical Directorate
<b>PMTCT</b>	Prevention of Mother-To-Child Transmission of HIV
<b>PNC</b>	Postnatal Care
<b>POC CD4</b>	Point of Care CD 4 testing
<b>PPE</b>	Personal Protective Equipment
<b>PPH</b>	Postpartum Haemorrhage
<b>PSE</b>	Pre-Service Education
<b>QA</b>	Quality Assurance
<b>RDT</b>	Rapid Diagnostic Test
<b>RHC</b>	Rural Health Centre
<b>RH</b>	Reproductive Health
<b>RPR</b>	Rapid Plasma Reagin
<b>RUTF</b>	Ready to Use Therapeutic Food
<b>SP</b>	Sulfadoxine-pyrimethamine (Fansidar)
<b>SRH</b>	Sexual Reproductive Health
<b>STD</b>	Sexually Transmitted Disease
<b>STI</b>	Sexually Transmitted Infection
<b>TB</b>	Tuberculosis
<b>TBA</b>	Traditional Birth Attendant
<b>TDF</b>	Tenofovir
<b>TT</b>	Tetanus toxoid
<b>UNAIDS</b>	United Nations Programme on HIV/AIDS
<b>UNFPA</b>	United Nations Population Fund
<b>UNGASS</b>	United Nations General Assembly Special Session
<b>UNICEF</b>	United Nations Children's Fund
<b>USAID</b>	United States Agency for International Development
<b>VCT</b>	Voluntary Counselling and Testing
<b>VDRL</b>	Venereal Disease Research Laboratory (test)
<b>VHW</b>	Village Health Worker
<b>WHO</b>	World Health Organization
<b>YFC</b>	Youth Friendly Corner
<b>ZDHS</b>	Zimbabwe Health Demographic Survey
<b>ZNMP</b>	Zimbabwe National Medicine Policy

## 1. Background to the Zimbabwe National Integrated Health Facility Assessment

Zimbabwe is recovering from an unprecedented socio-economic decline, which has significantly compromised the availability, use, and quality of health and social services. The result of the decline has been a systematic decrease in coverage of most basic services leading to a stagnation or deterioration of most health indicators and a rising maternal and child mortality rate. For example, with an under-5 mortality rate estimated at 84 per 1,000 live births (ZDHS 2010/2011), Zimbabwe ranks in the top 50 countries in the world for high early childhood mortality. Zimbabweans are dying from easily preventable and treatable conditions e.g. HIV and AIDS, malaria, pregnancy related complications, diarrheal diseases etc. The major challenges facing the health sector have resulted from inadequate resources including financial, human and material.

Over the past three years, the Ministry of Health and Child Welfare (MoHCW) has commissioned several assessments to generate information for evidence-based planning and strengthening of the national health system. The studies and surveys point towards inadequacies in the six World Health Organization (WHO) Health System Building Blocks – human resources, medical products, vaccines and technology including infrastructure, health financing, health information, service delivery, leadership and governance – that are prerequisites for a functional health delivery system. However, these assessments have generally been conducted at a high level and have often been very rapid thus not providing specific information on gaps and needs at the operational or facility level.

The assessments have also tended to focus on specific technical areas and have left gaps in knowledge about the overall capacity of the health system to respond to increasing demands from the multitude of programmes, being implemented by the MOHCW.

### ***1.1 Organisation of the health delivery system in Zimbabwe***

Before going into details of this assessment, it is necessary that a brief description of the organisation of the Zimbabwe health system be presented so that the analysis can be put into relevant context. Zimbabwe's public health delivery system is organised into four hierarchical tiers with the most specialized services offered at a Central hospital level:

#### **Level 1: Primary Health Care – Urban Clinics / Rural Health Centers**

There are approximately 1,355 primary health care facilities comprising rural clinics and urban municipal clinics. Rural health centers are the first point of contact with health services for the majority of the population. The rural health centers are assisted by village health workers who mobilize communities for health interventions. Services offered at these centres include provision of comprehensive health promotion, preventive, curative and rehabilitative services and community based health services. These centres should be able to deliver the essential package of services, which include:

- Focused antenatal care including PMTCT
- BEmONC
- Postnatal care including early detection and timely referral of women/neonates with complications
- Normal delivery using the partogram
- Ensuring appropriate breastfeeding practices
- Full immunisation, growth monitoring and promotion
- Integrated Management of Neonatal and Childhood Illnesses (IMNCI)
- Diagnosis and treatment of common conditions
- Referral of complicated cases to Level 2 facilities

**Level 2: District /Mission Hospitals.** There are 50 district and 46 mission hospitals. These facilities are staffed by Government Medical Officers (GMOs), nurses, laboratory scientists, environmental health officers, pharmacists, health information assistants, nutritionists and health promotion officers etc. Additional services offered at this level should include:

- Surgical procedures including caesarean section
- Safe blood transfusion
- Comprehensive emergency obstetric and newborn care
- Comprehensive management of illness including emergency care

**Level 3: Provincial Hospitals.** Districts refer complicated cases to Provincial hospitals with posts for specialized health services. There are eight Provincial hospitals. Provincial hospitals also provide essentially similar services to the district level. Similar health professionals to those at district level are found at provincial hospitals. In addition, they are supposed to manage more complicated cases. Services offered include:

- Caesarean Sections
- Blood Transfusion
- Comprehensive emergency obstetric and new born care
- Management of complicated paediatric, adult medical and surgical cases referred from the district level

**Level 4: Central Hospitals.** There are six Central Hospitals in the country, two in Harare, three in Bulawayo and one in Chitungwiza. These are the highest and most specialized levels of care, with specialty services for both maternal and child health. Obstetricians and gynaecologists, neonatologists, paediatricians, and paediatric surgeons manage these specialties. Services offered include:

- Comprehensive emergency obstetric and newborn care, especially management of complicated maternal and newborn cases
- Specialist medical and surgical management of complicated paediatric cases such as paediatric cancer

## ***1.2 Justification***

It is against this background that a National Integrated Health Facility Assessment (NIHFA) was commissioned through collaboration between the MOHCW and multilateral and

bilateral donors, United Nations (UN) Agencies and Non-Governmental Organization (NGOs) partners. A task force was established in 2010 to spearhead these efforts, chaired by the MoHCW, with participation of the multiple stakeholders mentioned above. The assessment was designed to collect information to answer the following critical questions:

1. Do our health facilities have the capacity to provide quality services in terms of resources or tools to be used by those providing services?
2. Do we have the human resource base to provide the required services?
3. What is the quality of services being provided with current levels of resources and tools?
4. Have we ensured equity in the delivery of essential health services?
5. What do we need to do to improve the quality and equity of health services in Zimbabwe?

The information obtained from this assessment will play a critical role in informing ongoing and concerted efforts to strengthen the national health system in support of equity and quality in health, particularly around Maternal Newborn and Child Health (MNCH). Specifically the results will be used to:

- a) Develop specific evidence-based purchase plans for the overall health system.
- b) Develop operational plans targeting support to specific facilities in need.
- c) Develop and strengthen individual programme plans including around training.
- d) Calculate costs and define the activities necessary to enforce existing user fees policies at health facility level.
- e) Direct investors / donors to specific facilities or issues to help meet clearly identified needs.
- f) Enable individual facilities to advocate / seek support / take the initiative to meet their own needs.
- g) Strengthen dialogue and understanding around quality of care in Zimbabwe's health sector through documentation of results in relation to the key questions of quality.
- h) Act as important baseline data for any future impact evaluation of renewed efforts to support key areas of the health system.

### ***1.3 Objectives of the National Integrated Health Facility Assessment***

The overall objectives of the study were developed by the NIHFA task force reflecting the needs of the Ministry of Health and Child Welfare. Overall the objectives were:

1. To obtain information on functionality, coverage and access to health services at public and private health facilities in Zimbabwe, with a particular focus on Maternal, Newborn and Child Health services.
2. To assess availability, distribution and functional status of available human resources, medical supplies, equipment and infrastructure necessary for high coverage of quality health services.
3. To assess the quality of Maternal, Newborn and Child health (MNCH) services provided by health facilities through assessment of knowledge and competency.

4. To make recommendations and evidence-based plans for targeting support needed based on data obtained.

From the outset of this assessment, the MoHCW and partners recognised that in order to gather enough information to answer all the critical questions, a number of different methodologies would be required. Therefore the assessment was divided into two components:

**1) Health facility needs assessment:** involving a detailed analysis of individual health facility needs at all public health facilities nationwide documented through a self-administered questionnaire; and

**2) An embedded 'Equity and Quality of Care Study':** undertaken in a sampled number of health facilities and involving additional in-depth analysis using both quantitative and qualitative methodologies to ascertain the quality and equity of care of health services with a focus on MNCH issues.

### ***1.4 Overview of the process of undertaking the NIHFA***

Following consensus and approval by the MoHCW on the way forward for the assessment, the NIHFA working group finalised a detailed assessment protocol that is available on request. This was circulated by the MoHCW to interested partners, resulting in sufficient resources being mobilised for the assessment by the middle of 2011. Mechanisms were established to manage donor contributions with a pooled funding mechanism managed by UNFPA, as well as direct management of resources from the World Bank and the USG.

A team of national consultants was then recruited to oversee and manage the assessment. The NIHFA team consisted of: a Project Manager; a Health Facility Assessment consultant; an Equity and Quality of Care (EQOC) consultant; a Biostatistician; an IT consultant; an administration assistant; and data entry clerks.

The team worked closely with the NIHFA working group and weekly meetings were organised to finalise plans and support implementation. Detailed minutes of all the meetings are available on request. An international database expert who worked with the NIHFA consultant team for 6 months provided additional support and in-country technical partners provided ongoing valuable support in the initial trainings, field activities and final analysis. Of note, a second EQOC consultant needed to be recruited in January 2012, half way through the assessment due to unforeseen circumstances.

Tools were developed and pre-tested for the different methodologies outlined above and adjustments were made. Further details on the tools, fieldwork and data analysis are given under the different sections of this consolidated report. Sensitisation meetings at Provincial and District levels were made prior to the assessment taking place.

An office was established in the WHO annex at Parienywata hospital to coordinate data collection and computers and equipment were procured for the assessment. Field work started in December 2011, with data entry, compilation and cleaning continuing through to May 2012. Data analysis started in May 2012, which due to the enormity of task took, until July/August 2012, before the first draft reports were finalised. Dissemination of preliminary results were shared with stakeholders and feedback incorporated before finalising the overall report.

### ***1.5 Outline of the NIHFA report***

This report has been organised into two distinct parts: 'Part A' and 'Part B'. This has been done because the methodologies used to collect data varied. Needless to say the two sections are intended to complement each other and provide important insight into the functioning of the national health systems in Zimbabwe. Due to the necessity to share results as soon as possible, it is appreciated that more in-depth analysis and triangulation of results is required to obtain a more comprehensive picture of the capacity of the health system to deliver services. This will require further sub-analysis that was not possible given the urgency to start using results to strengthen services now.

The first section of the report, known as Part A provides an overview of the methodology, data analysis and overall results from the self-administered questionnaire distributed to all health facilities in Zimbabwe. Data is presented by type of facility and province and is organised in the following sections:

- Section 1: General and Facility Identifiers
- Section 2: Morbidity and Mortality patterns
- Section 3: Human Resources for Health
- Section 4: Service Delivery: General
- Section 5: Service Delivery: Specific Health Services
- Section 6: Supporting Service Delivery
- Section 7: Health Information
- Section 8: Health Financing
- Section 9: Governance and Leadership
- Section 10: Health Centre Inventory
- Section 11: Consumption of Consumables

Part B of the report focuses on the Equity and Quality of Care component of the overall assessment. This section is sub-divided into two further parts. The first part outlines the results from in-depth interviews with health care workers and exit interviews with clients. The second part provides results from observations carried out during ANC, labour and delivery, postnatal and child health consultations.

## **PART A**

# **National Health Facility Assessment:**

## **Methodology and Results**

## **2. Methodology for Health Facility Needs Assessment**

For this component of the overall assessment, a descriptive cross sectional assessment was conducted from December 2011 to January 2012. The National Integrated Health Facility Assessment (NIHFA) was based on a protocol developed by the national task force, comprising technical specialists from the MoHCW, key partners and other stakeholders familiar with the Government's health priorities. A consultant team was recruited by the MoHCW to lead and implement the overall process with a specific consultant identified to manage the health facility component of the assessment.

### ***2.1 Sampling***

The Health facility needs assessment was a census of all public health facilities including central, provincial, and district hospitals, mission hospitals as well as all local municipal and government health clinics. Three private health facilities were purposively included in the assessment as they provide services similar to public health facilities in their catchment areas. Facilities serving the uniformed forces, including the army, police and prison services did not participate in the assessment.

### ***2.2 Selection of health facilities***

A register of all public health facilities maintained by the MoHCW health information department was used to identify the sites to be included in the assessment. At the time of conducting the assessment, a total of 1400 facilities were estimated to be registered with the Health Management and Information system (HMIS). This number of facilities was cross referenced with the facilities included the quarterly vital medicines and health services survey. District nursing officers further verified the list of sites and ensured that any new facilities were added or clinics no longer operating were removed from the list.

### ***2.3 Data Collection Tools***

The Health Facility Needs Assessment Questionnaire sought to assess the capacity of facilities to provide services of an acceptable standard. The questionnaires were developed by the NIHFA taskforce. Existing tools within the Zimbabwean context were updated for this assessment. Two tools were developed, one specifically for hospitals and one for primary care facilities. Each questionnaire was developed to be self-administered by a focal person at the individual facility. The questionnaires sought information on the following areas:

- Section 1: General and Facility Identifiers
- Section 2: Morbidity and Mortality patterns
- Section 3: Human Resources for Health
- Section 4: Service Delivery: General
- Section 5: Service Delivery: Specific Health Services

- Section 6: Supporting Service Delivery
- Section 7: Health Information
- Section 8: Health Financing
- Section 9: Governance and Leadership
- Section 10: Health Centre Inventory
- Section 11: Consumption of Consumables

A health facility equipment catalogue accompanied the questionnaires to assist staff in identifying equipment for completing section 9. Each questionnaire was approximately 70 pages long and it was estimated that each rural health facility would take approximately one day to complete the form. District/provincial/central hospitals were expected to complete the questionnaire in three days. A copy of the questionnaire can be obtained from the Ministry of Health and Child Welfare.

### ***2.3.1 Pre-testing of questionnaires***

The objective of the pretest was to standardise the data collection tools. Two pre-testing teams were identified and attended a one-day orientation on the assessment protocol and also became familiar with the questionnaires to be used. At each facility, the pre-testing team introduced the questionnaire to the staff at the institution, who were asked to fill out the questionnaire by department. However, the inventory sections were not completed during pre-testing because of time constraints. The pre-testing teams then documented ambiguous questions or areas on the questionnaire that were not understood by the health facility staff. Three days were allocated for the pretest. Support was provided through visits and by telephone calls by the consultant and daily updates from the respective DNOs were given.

A one and half day feedback meeting was held with both teams to obtain feedback on:

- Overall acceptance and utility of the tool
- Seek relevance, clarity and appropriateness of specific questions
- Determine the average time required to complete the tools
- Identify potential challenges to successful completion of the tools

After the pre-testing of the tools, adjustments were made to the questionnaires to address problems identified such as ambiguous questions and repeated questions.

## ***2.4 Data Management and Analysis***

### ***2.4.1 Data Management and Set up***

One national consultant was recruited to oversee the data management and analysis process with support from an international database consultant. An IT technician was also recruited to support the establishment of the database. A database was created in EPI-INFO platform to capture the data from the Level 1 facilities and hospitals questionnaires.

Data dictionaries for the both the Level 1 facilities and hospital databases were developed and finalised. A data dictionary is a manual that aims at defining the variables in the

database and the meaning of each code used in the database. The data dictionary took the following format as shown in Table 1.

**Table 1: Example of the Data Dictionary**

<i>Question number</i>	<i>Variable Name</i>	<i>Variable codes</i>	<i>Any comments</i>
<b>1.1 What is your position in health facility?</b>	S1q11a	1. Nurse in charge 2. Nurse 3. Environmental Health Technician 4. Nurse Aid 5. General Hand 6. Other (specify)	Make only one choice.
<b>1.2 What type of health facility is this?</b>	S1q12a	1. Rural Hospital 2. Polyclinic 3. Rural Health Centre/Health Post 4. Satellite Clinic 5. Other (specify)	Make only one choice.

#### **2.4.2 Data entry clerk Recruitment and training**

A total of 30 data entry clerks were recruited based on:

- Academic merit
- Prior data entry experience
- Experience in working with other research organisations

A one-week training for the data entry clerks was done with the following objectives:

- a. To familiarize data entry clerks with the objectives of the NHIFA
- b. To familiarize data entry clerks with the data collection tools of the NHIFA
- c. To familiarize data entry clerks with the Principles of data management
- d. To familiarize clerks with the Ethics in Data management to be observed
- e. To train clerks on the data entry principles and the Epi-Info Platform for data entry
- f. To assess time needed to enter one booklet of data
- g. To identify types of entries to be made per variable, to identify skips in the questionnaires and types of entries for missing variables

A data entry reference document was produced, which the data clerks used as a reference during data entry.

#### **2.4.3 Data Processing**

Data entry started after the first week of data collection. Data entry clerks were paired and entered 4 questionnaires per day. The pairing was aimed at improving on the quality of data entered. Firstly tables of completeness of forms by province and interviewers were produced to spot inaccuracies and inconsistencies, prompting focused supervision and corrective actions, if necessary. Technical supervisors were needed to review and clarify comments written on the questionnaires to ensure that data entry clerk captured correct and accurate responses. Data entry took approximately 6 weeks.

The data cleaning process was carried out in EPI INFO and MS Excel. The key variables in the various VIEWS were exported to MS Excel and the one to one relationship between the Views was validated. After the basic data cleaning process was done, the relevant sections were exported to SPSS for purposes of analysis.

#### **2.4.4 Quality control issues**

##### **a) Data Quality Control before entry**

All data collected from the field were subjected to quality control checks that included: Physically checking for completeness of each submitted questionnaire; conducting consistency checks; and checking for appropriateness of answers. Where inconsistencies emerged these were followed-up with the supervisors to seek clarifications and verify answers.

##### **b) Outcomes of quality control processes**

- A number of questionnaires had missing data or inconsistencies, so facilities were phoned to seek clarification or collect missing data.
- The questionnaires were re-examined and new skips identified that were not explicitly indicated on the questionnaire. These were defined and other codes developed for completeness purposes of data entry.
- The data clerks tested the database by entering the completed questionnaires. This helped in the identification of the weaknesses of the database and the introduction of options to improve on the data entry process.
- Challenges of data entry for the Hospital Database

The following difficulties were encountered on the returned questionnaires for the hospital databases:

- i. Some of the variables were not filled in or had ambiguous answers.
- ii. Some of the questionnaires did not respect the skips.
- iii. Some of the variables were wrongly answered and in some cases multiple options ticked when only one was required.
- iv. Some pages were missing in some questionnaires and follow up was done to have missing pages completed and returned.
- v. In Section 9 where the quantities of consumables were asked for, the unit of measurement was not always specified.

#### **2.5 Ethical Clearance**

The protocol including the two data collection tools was submitted to the Medical Research Council Zimbabwe (MRCZ) for ethical clearance. Permission was granted for data collection. All staff completing the different sections of the tools did not need to identify themselves but only the focal contact person's identity was known for follow up purposes. Confidentiality for staff providing information was assured and maintained.

### ***2.5.2 Training on the data collection tool***

Ten Provincial Nursing Officers (PNOs) and 62 District Nursing Officers (DNOs) from all the country's 10 Provinces were identified as supervisors for the health facility needs assessment component. All of them participated in a training course, which was held over two days in Harare. The objective of the training was to orient the supervisors on the objectives and rationale of the assessment. As part of quality assurance, PNOs and DNOs were taken through the questionnaires where clarifications on the tool were provided to ensure consistency, and avoid different interpretation of some of the questions. Logistics, administration of the tool and verification of completeness of tool were also addressed during the training. The trained supervisors then cascaded similar orientation of the assessment at provincial and district level.

## ***2.6 Field Work***

### ***2.6.1 Sensitisation***

Prior to the data collection, senior management in the MoHCW were sensitised through a formal presentation at the MoHCW annual review meeting in December 2011. Sensitization letters were dispatched to all provincial offices, Central Hospitals and City Health Departments.

### ***2.6.2 Data Collection Process***

On completion of the supervisor training, the self-administered questionnaires were dispatched and distributed through the Provincial Medical Directors to the District Medical Offices. Each District Nursing officer was responsible for organizing a one to two day orientation for nurses in charge of public health facilities in their district. The purpose of these meeting was to:

- Sensitize these cadres on the overall objectives of the assessment
- Familiarize facility staff with the questionnaire

Special emphasis was placed on adherence to the coding instructions and completeness in filling the questionnaires. These meetings also provided an opportunity for the respondents to clarify any unclear sections in the tools.

The nurse in charge of a clinic or rural health facility was responsible for completion of the questionnaire. At the district hospitals the district-nursing officer, assisted by the hospital matron, was responsible for completing the questionnaire. At the provincial level the provincial nursing officer (PNO) provided overall supervision and ensured completion of the tools. At central hospitals, the principal nursing officer supervised data collection through relevant departmental heads. Informed consent was obtained from the relevant authority in charge of each facility. A small incentive was given to health facilities participating in the assessment.

As part of quality assurance and to assess completeness of data collected for the NIHFA survey, supervisory visits were made to five selected Provinces namely Manicaland, Mashonaland East, Midlands and Bulawayo city and Matebeleland North between 18th and

23<sup>rd</sup> December 2011. The supervisors were senior MoHCW staff and the 2 consultants. The supervisory teams met different cadres appointed at each institution to oversee questionnaire administration and PNOs who were the overall supervisors of the survey in each of the Provinces visited.

### ***2.6.3 Challenges during data collection***

During the supervisory visits a number of observations were made:

- The questionnaire was reported to be very long particularly the sections on the equipment inventory and consumables. Suggestions were made to trim future questionnaires to fewer key items, which provide an overall indication of facility capacity.
- Timing of the survey was not optimal as it was year-end and some staff members had taken annual leave, while the remaining staff had annual reports to complete.
- Heavy rains affected access to some sites for supportive supervision including completion of the tools.
- Delays in the disbursement of fuel and transport allowances slowed down field work and also affected the timing of the orientation of health centre staff.
- Some sites received the health facility equipment catalogue late owing to distribution problems.

Despite these challenges, the exercise provided an opportunity for health facilities to immediately identify existing gaps within their institutions. Facilities demonstrated enthusiasm and cooperated fully in completing the questionnaires in addition to their daily duties.

A few facilities, comprising mostly central hospitals and some facilities from remote districts submitted their questionnaires late into January. However by 27<sup>th</sup> January 2012, data collection was complete. After completion of questionnaires the district nursing officers either collected or had the questionnaires delivered to the district office for verification. The district nursing officers were mandated to ensure completeness and accuracy of information entered as well to provide clarifications with responsible facilities when such situations arose. The questionnaires were then submitted to the provincial office with a log sheet signed for the district nursing officers. The provincial nursing officers also verified the completeness of the tools before submission to the Health Facility Needs assessment consultant. The questionnaires were received at the NIHFA secretariat where they were filed and sorted prior to data entry.

## ***2.7 Data Cleaning and Analysis***

Following completion of data entry for both the clinic data and hospital data, a cleaning process was started checking for consistencies within the data. . Where inconsistencies were identified, follow up was made with the district supervisors to clarify data. Tables were

generated that provided the number of health facilities and hospitals by province and districts. A listing of clinics and hospitals was also made. Other tables were generated that provided summaries of demographic figures by district and province. Outliers were identified and corrected through consultation with the sites. Tables were generated section-by-section in line with the original objectives and stratified by Province and district.

## ***2.8 Limitations of the Assessment***

This component of the overall NIHFA had a number of limitations many of which have already been alluded to. From the outset, there was limited involvement of health facility staff in the finalisation and adaptation of the generic tools resulting in tools being developed that were open to misinterpretation. There was also an urgency to ensure the NIHFA got underway, leading to the time and resources allocated to the pre-test exercises being inadequate, considering the length of the data collection tools and this resulted in tools being finalised for distribution before further refinements could be made.

The two separate tools for Level 1 and hospital facilities were long and bulky which may have affected the precision that was given to answering questions and hence the validity of some of the data presented. The tools were also self-administered and therefore responses are subjective and limited validation of results was undertaken.

There was also limited synchronisation between the data manager and survey staff at the design stage of the assessment. This meant that the development of the database occurred after the questionnaires had already been distributed. During the development of the database additional challenges with the questionnaire i.e. ambiguous questions, were further identified but at that stage it was too late to make any changes to the tools. In addition, training of data entry clerks was not synchronized with that of NIHFA facility focal persons, which might have highlighted issues concerning certain variables earlier on.

Data obtained from some sections of the tool for example user fees data did not lend itself to easy analysis. This was particularly the case in some areas where facilities were asked to record continuous variables e.g. Number of nurses, number of weighing scales etc.

The timing of the field work also affected the timeliness and quality of the data collection, as it was both the festive season with many staff away on annual leave and this delayed completion of some sections especially for the hospital tool. Some areas were difficult to access for the supervisors, owing to poor terrain and the rainy season. There were also difficulties in the disbursement of funds for training of facility staff involved in NIHFA, further delaying the assessment.

To overcome some of the challenges, follow up was made with facilities to obtain missing information and verification of unclear responses. This was done both in person and by telephone where possible. In some cases the data collection tools were returned to the facilities for further completion. The data manager and supervisors also conducted several data cleaning exercises.

## FINDINGS FROM PART A: THE HEALTH FACILITY ASSESSMENT

### 3. General Characteristics of Health Facilities

#### 3.1 Response Rate

A total of 1486 public health facilities were identified on the MoHCW database. Out of the total number of public health facilities identified 131 (9%) were hospitals (Level 2, 3, 4) and 1355 (91%) were lower level facilities (Level 1 i.e. rural health centres, rural hospitals and urban municipal clinics). The National Health Facility Assessment targeted all these facilities. The overall response rate for the assessment was 92.5%. The response rate was 95.4% for the hospitals and 92.3% for Level 1 facilities. Table 1 shows the response rate for Level 1 facilities and hospitals by Province.

**Table 2: Response rate for Level 1 facilities and hospitals by Province, National Health Facility Needs Assessment, 2011**

<i>Province</i>	<i>Level 1 Facilities</i>	<i>Total Level 1 as per MOH Database</i>	<i>% Response</i>	<i>No of hospitals Surveyed</i>	<i>Total Hospitals as per MOH Database</i>	<i>% Response</i>
Bulawayo	19	22	86.4	3	3	100.0
Harare	52	54	96.3	6	6	100.0
Manicaland	216	228	94.7	22	22	100.0
Mashonaland Central	111	130	85.4	12	12	100.0
Mashonaland East	168	183	91.8	17	20	85.0
Mashonaland West	141	155	91.0	14	17	82.4
Masvingo	162	171	94.7	14	14	100.0
Matabeleland North	92	96	95.8	10	10	100.0
Matabeleland South	108	123	87.8	10	10	100.0
Midlands	181	193	93.8	17	17	100.0
<i>Total</i>	<i>1,250</i>	<i>1,355</i>	<i>92.3</i>	<i>125</i>	<i>131</i>	<i>95.4</i>

Eight Provinces recorded a response rate of 100% for the hospital questionnaire. The lowest response rate was for Mashonaland West Province where 14 out of 17 hospitals completed the questionnaire. Among the clinics, the overall average response rate was 92.3%. Harare City had the highest response rate of 96.3%, while Mashonaland Central Province had the lowest response rate of 85.4%.

#### 3.2 General Health Facility Characteristics

The characteristics of the various health facilities were assessed in terms of the type of facility and its ownership. Tables 3 and 4 reflect types of facilities that participated in the assessment. Table 3 below summarises types of Level 1 facilities by Province.

**Table 3: Type of Level 1 Health Facilities assessed by Province (excluding district, mission and central hospitals), December 2011**

Province	Type of Health Facility					Total
	Rural Hospital	Polyclinic	Rural Health centre/clinic	Satellite Clinic / Health Post	Other	
Bulawayo	0	0	17	0	2	19
Harare	0	19	0	17	16	52
Manicaland	11	6	191	2	6	216
Mashonaland Central	2	3	106	0	0	111
Mashonaland East	6	4	152	2	4	168
Mashonaland West	8	4	115	4	10	141
Masvingo	13	3	129	4	13	162
Matabeleland North	5	0	76	1	10	92
Matabeleland South	8	2	85	5	8	108
Midlands	7	8	154	5	7	181
<b>Total</b>	<b>61</b>	<b>49</b>	<b>1024</b>	<b>40</b>	<b>76</b>	<b>1250</b>

\*Other health facilities included private, mission clinics, infectious disease and family planning

Among the Level 1 health facilities surveyed, the majority (82%) were rural health centres. Manicaland Province had the highest number of rural health centres, 191 followed by Midlands with 154. A total of 61 rural hospitals participated in the study. Masvingo had the highest number of rural hospitals participating. The detailed distribution of health facilities by type and district is shown in appendix 2.

**Table 4: Type of hospitals assessed by Province, December 2011**

Province	Type of Hospital					Total
	Central Hospital	Provincial Hospital	District Hospital	Mission Hospital	Other	
Bulawayo	3	0	0	0	0	3
Harare	3	0	0	0	3	6
Manicaland	0	1	7	12	2	22
Mashonaland Central	0	1	6	4	1	12
Mashonaland East	0	1	7	6	3	17
Mashonaland West	0	1	7	5	1	14
Masvingo	0	1	6	5	2	14
Matabeleland North	0	1	5	3	1	10
Matabeleland South	0	1	5	4	0	10
Midlands	0	1	7	7	2	17
<b>Total</b>	<b>6</b>	<b>8</b>	<b>50</b>	<b>46</b>	<b>15</b>	<b>125</b>

\*Other hospitals include private and local authority.

Amongst the hospitals there were 6 Central, 8 Provincial, 49 District and 46 Mission hospitals. The proportion of mission hospitals, which comprises 36.8% of all hospitals, is almost equivalent to the number of government district hospitals. A few mission hospitals have been designated as district or provincial hospitals. St Luke's mission hospital for

example is designated as a provincial hospital for Matebeleland North Province. This demonstrates that mission hospitals remain a major contributor to provision of health services in the country.

***3.2.1 Catchment population distribution by size, age, gender and type of settlement***

In each of the health facilities assessed the population size within the catchment area was also assessed to ascertain the workload. Facilities obtain their catchment population data from catchment boundaries in consultations with local leaders. Table 5 below summarises the catchment population size, age, and gender with census projections by Province for 2010.

The Table 5 below reflects that total catchment population for Level 1 facilities and hospitals is almost twice that of the census projections. This may be attributed to overlap in catchment populations among facilities as well as double counting but this needs further follow up in order to confirm this, which was not possible to do within the course of this assessment. According to census data, Harare Province has the highest population of Under-fives followed by Manicaland. A similar pattern is observed for women of the reproductive age.

**Table 5: Census projections disaggregated by age and gender, by Province, 2010**

Province	Nos. of hospitals	Nos. Level 1 Facilities	Total Population*	Total hospital catchment populations+	Total Level 1 catchment populations+	Women of reproductive age (15-49)*	Children 0-11 months*	Children 0-59 months*
<b>Bulawayo</b>	3	19	732,715	1,544,060	750,136	226,490	19,343	90,517
<b>Harare</b>	6	52	2,053,241	373,329**	4,134,705	623,768	60,659	280,355
<b>Manicaland</b>	22	216	1,698,926	1,156,723	1,818,214	414,408	51,066	252,863
<b>Mashonaland Central</b>	12	111	1,077,905	191,016	1,298,303	261,683	33,120	161,722
<b>Mashonaland East</b>	17	168	1,220,827	1,765,332	1,803,699	293,637	34,426	175,003
<b>Mashonaland West</b>	14	141	1,326,142	499,068	1,363,197	332,719	39,312	194,413
<b>Masvingo</b>	14	162	1,429,845	423,328	1,464,552	359,838	39,981	204,662
<b>Matabeleland North</b>	10	92	763,358	347,864	746,019	176,174	22,754	114,487
<b>Matabeleland South</b>	10	108	707,164	319,123	1,532,588	163,755	19,683	102,596
<b>Midlands</b>	17	181	1,585,295	2,575,092	1,829,459	395,599	47,990	238,324
<b>Total</b>	<b>125</b>	<b>1,250</b>	<b>12,595,418</b>	<b>9,194,935</b>	<b>16,740,872</b>	<b>3,248,071</b>	<b>368,336</b>	<b>1,814,943</b>

\* These are projection figures for 2010 from Census figures of 2002

\*\* Concerns raised over validity of this figure, as it is likely that the questionnaire was not clearly understood

+ These figures are from survey data, NIHFA 2010

#### 4. Morbidity and Mortality patterns

Using data from T5 both Level 1 facilities and all hospitals were asked to list the top 10 conditions/diseases occurring within their catchment areas. Table 6 below shows that among under 5 year old cases, diarrhoea and acute respiratory tract infections (ARI) are the top two conditions presenting at Level 1 facilities. For the age group, 6 years and above, diarrhoea remains the leading condition while injuries become more prevalent.

**Table 6: Ranking of top ten diseases by age group categories at Level 1 facilities, January- December 2010**

Rating	Disease
<b>Age group 0-5 years</b>	
1	Diarrhoea
2	ARI
3	Skin diseases
4	Disease of the Eye
5	Injuries
6	Malaria
7	ENT
8	Burns
9	Scabies
10	Dysentery
<b>Age group 6-14 years</b>	
1	Diarrhoea
2	Injuries
3	ENT
4	ARI
5	Disease of the Eye
6	Skin disease
7	Malaria
8	Bilharzia
9	Dysentery
10	Scabies
<b>Age group &gt;15 years</b>	
1	Diarrhoea
2	Injuries
3	Skin diseases
4	ARI
5	Dental conditions
6	STIs
7	Eye conditions
8	Dysentery
9	Bilharzia
10	ENT

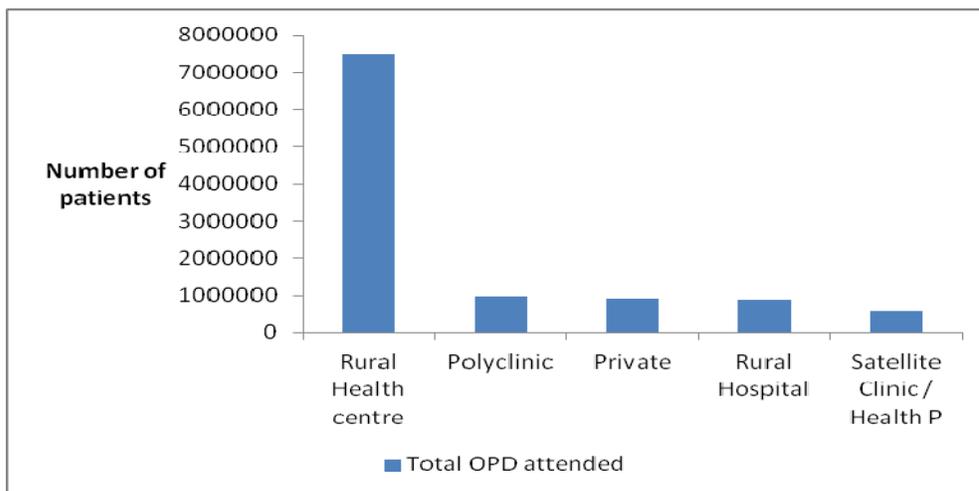
Among the hospitals, diarrhoea was rated as the top presenting condition among those aged 0-14 years. Of note is that injuries are ranked 3rd across all age groups.

**Table 7: Ranking of top ten diseases by age group category at hospital level January-December 2010**

Rating	Disease
<b>Age group 0-5 years</b>	
1	Diarrhoea
2	ARI
3	Injuries
4	Skin diseases
5	Diseases of the eye
6	Malaria
7	Bilharzia
8	Dental conditions
9	Malnutrition
10	Burns
<b>Age group 6-14 years</b>	
1	Diarrhoea
2	ARI
3	Injuries
4	Skin diseases
5	Diseases of the eye
6	Malaria
7	Bilharzia
8	Dental conditions
9	Malnutrition
10	Burns
<b>Age group &gt;15 years</b>	
1	Dental conditions
2	Diarrhoea
3	Injuries
4	Poisoning
5	Disease of the Eye
6	Malaria
7	STIs
8	Bilharzia
9	Abortions
10	ARI

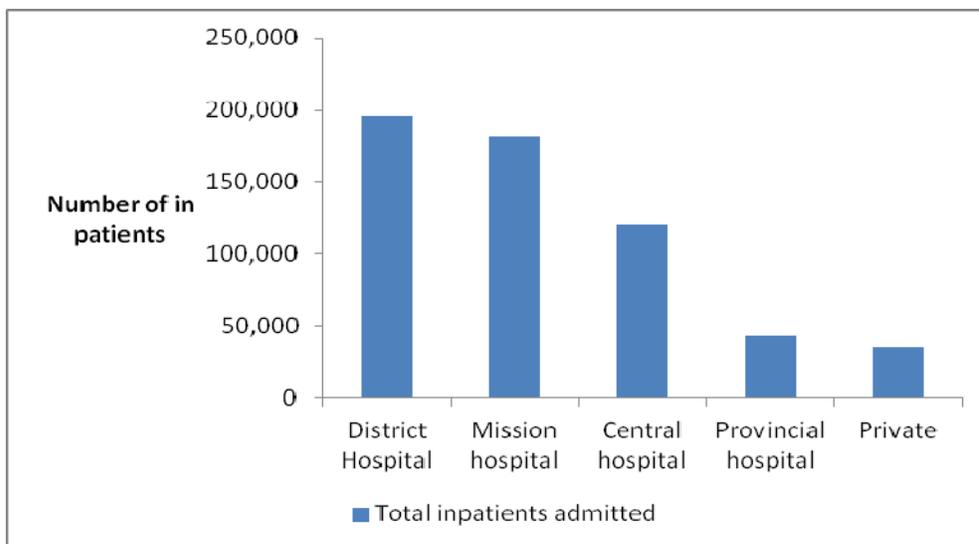
For efficient allocation of resources, formulation of policies and planning of interventions this assessment also assessed the burden of care in the period under review. Both Level 1 facilities and all hospitals were asked to indicate the number of outpatients and in-patients attended to for the period January 2010 to December 2010. The burden of care for both Level 1 facilities and hospitals are captured in Figure 1, 2 and table 8 below. Figure 1 reflects number of OPD cases attended to in Level 1 facilities stratified by type of facility. Table 8 reflects burden of care stratified by Level 1 facilities and hospitals by province.

**Figure 1: Number of Out-patient Cases attended to at Level 1 facilities by type of facility, between Jan-Dec 2010 (N=1,250)**



Most Level 1 facilities offer basic primary health care and hence attend more to outpatients than admissions. In ranking order, Figure 1 above shows that among the different types of Level 1 facilities, rural health centres attended to most OPD cases, 69%, followed by polyclinics (9%) closely followed by private (8.6%).

**Figure 2: Number of patients admitted in hospitals stratified by type of hospital, Jan-Dec 2010 (N=125)**



Hospitals are higher levels of care and hence mostly manage patients referred in as complicated cases from Level 1 facilities, as well as from their catchment areas. Hospitals in the assessment were asked to indicate number of patients admitted during the year Jan-Dec 2010. From the data coming from all hospitals in ranking order, district hospitals admitted most patients (33.9%), followed by mission hospitals 31.4%. Central hospitals accounted for

20.9% of hospital admissions in 2010, while provincial hospitals accounted for 7.4% of all hospital admissions.

**Table 8: Summary of the number of patients seen in OPD and admitted as inpatient for both Level 1 facilities and hospitals by Province, Jan-Dec 2010**

Province	Total Population*	Level 1 facility OPD	Hospital OPD	Level 1 facility Inpatient	Hospital Inpatient	Total Patients
Bulawayo	732,715	545,202	101,061	0	38,579	684,842
Harare	2,053,241	1,602,684	212,820	1,333	85,197	1,902,034
Manicaland	1,698,926	1,979,573	383,481	14,506	67,073	2,444,633
Mashonaland Central	1,077,905	957,606	342,043	6,287	39,930	1,345,866
Mashonaland East	1,220,827	1,087,981	361,509	6,316	87,987	1,543,793
Mashonaland West	1,326,142	786,781	299,936	19,094	65,381	1,171,192
Masvingo	1,429,845	1,449,558	496,532	8,493	62,473	2,017,056
Matabeleland North	763,358	873,536	307,678	5,616	33,230	1,220,060
Matabeleland South	707,164	592,631	173,085	3,774	36,656	806,146
Midlands	1,585,295	970,560	328,107	7,575	60,865	1,979,195
<b>Total</b>	<b>12,595,418</b>	<b>10,846,112</b>	<b>3,006,252</b>	<b>72,994</b>	<b>577,371</b>	<b>15,114,817</b>

\*From Census data

Unlike Level 1 facilities, who attend to many outpatients, hospitals have more inpatients. The patients can either be referrals from Level 1 facilities or direct admissions from their catchment areas. Level 1 facilities and hospitals in Manicaland province attended to most patients overall. Most inpatients were admitted in hospitals in Mashonaland East province. The NIHFA assessment did not categorize by type of OPD or inpatient visit e.g. paediatric, surgical etc.

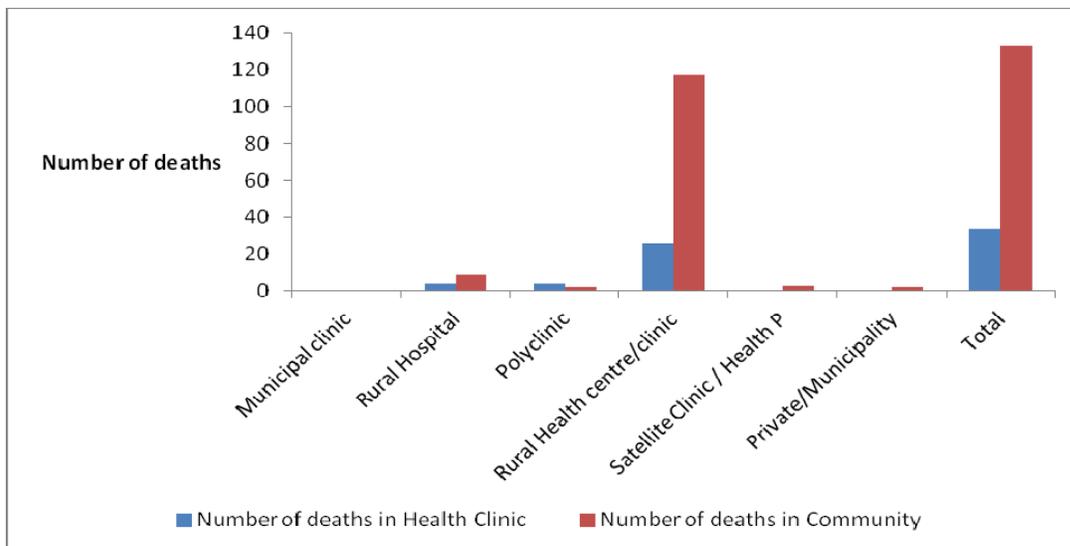
#### **4.1 Maternal mortality**

Pregnancy and childbirth complications are among the leading causes of morbidity and mortality among women of childbearing age in Zimbabwe. One of the indicators for assessing a country's health status, especially for women, is the maternal mortality ratio (maternal deaths per 100,000 live births). The Zimbabwe Demographic Health Survey (2010-2011) reports a high Maternal Mortality Ratio (MMR) of 960 per 100,000 live births. To better understand the health status of Zimbabweans and inform both policies and interventions aimed at improving health care, the 2011 health facility assessment also assessed maternal, neonatal and infant deaths recorded across the country, one year preceding the survey. In the national health facility assessment, facilities were required to provide numbers of maternal, neonatal and infant deaths for the period January 2010-December 2010 both those reported at a facility and in the community.

In total 905 maternal deaths were reported by both Level 1 facilities and hospitals. Figure 3 reflects maternal deaths at Level 1 facilities stratified by type of facility and whether the death occurred at the institution or within the community, and Figure 4 reflects maternal deaths at

hospital and community level. Table 10 gives a combined picture of maternal deaths at all levels of care and the community.

**Figure 3: Reported maternal deaths at Level 1 facilities stratified by type of facility and whether facility or community based death, Jan-Dec 2010**



The majority of the reported maternal deaths among Level 1 facilities, occurred within communities surrounding these facilities. Eighty-two percent of all deaths reported by rural health centres were community deaths. There were 133 deaths reported in the community compared to 34 institutional deaths at this level. Of note municipal, satellite and private clinics did not report any institutional deaths in the period under review.

**Figure 4: Reported maternal deaths stratified by type of hospital and whether institutional or community death, Jan – Dec 2010**

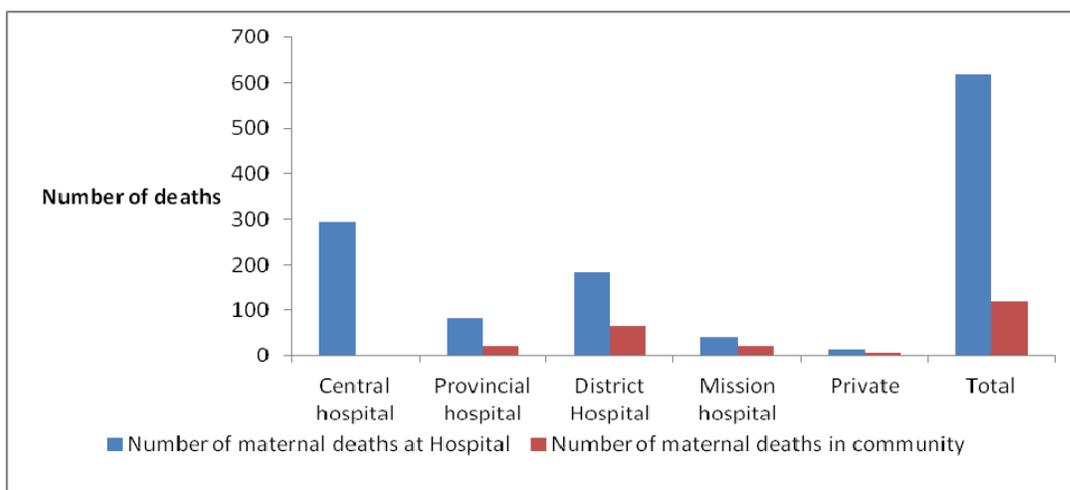


Figure 4 above and Figure 5 below illustrate that the majority of deaths (48%) in hospitals are at central hospital level. Thirty percent occur at district hospitals and 13% at provincial level. Mission hospitals accounted for a relatively smaller proportion of institutional maternal

deaths (7%). Relatively fewer community maternal deaths are reported at hospitals compared to Level 1 facilities. In this assessment 618 institutional deaths compared to 120 community deaths were reported. In addition the higher numbers of maternal deaths reported from hospitals in Bulawayo and Harare, could be explained by referral of complicated maternal cases.

**Figure 5: Proportion of institutional maternal deaths reported by type of hospital, Jan-Dec 2010**

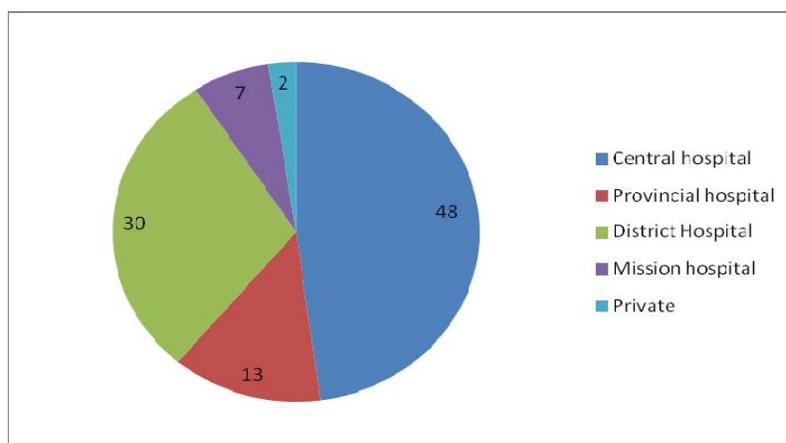


Table 9 below illustrates that of the total number of maternal deaths reported, 4% occur at Level 1, 68% at a hospital level and 28% in the community. Harare and Manicaland provinces reported the highest number of maternal deaths between Jan-Dec 2010. It appears that community maternal deaths are particularly problematic in Manicaland province with this province reporting 38% of all community deaths from both Level 1 facilities and Hospitals.

**Table 9: Summary of reported maternal deaths at Level 1, hospitals and community stratified by Province, Jan-Dec 2010 (N=1375)**

Province	Number of Live Births	Level 1 reported Maternal deaths	Hospital reported Maternal deaths	Level 1 reported Community Maternal Deaths	Hospital reported Community Maternal Deaths	Total reported Maternal Deaths
Bulawayo	20,607	0	114	0	3	117
Harare	68,735	3	182	0	0	185
Manicaland	44,922	5	85	46	49	185
Mashonaland Central	52,425	4	36	16	9	65
Mashonaland East	41,062	3	36	21	10	70
Mashonaland West	40,256	4	43	15	31	93
Masvingo	44,564	3	38	4	0	45
Matabeleland North	18,535	5	23	8	2	38
Matabeleland South	18,041	2	9	6	4	21
Midlands	39,363	5	52	17	12	86
<b>Total</b>	<b>388,510</b>	<b>34</b>	<b>618</b>	<b>133</b>	<b>120</b>	<b>905</b>

#### 4.2 Neonatal Mortality

In the assessment both Level 1 facilities and hospitals were asked to indicate the number of institutional neonatal deaths (up to 28 days of life) that occurred within the period under review. Table 9 below illustrates the reported neonatal deaths for Level 1 facilities and hospitals stratified by type of facility.

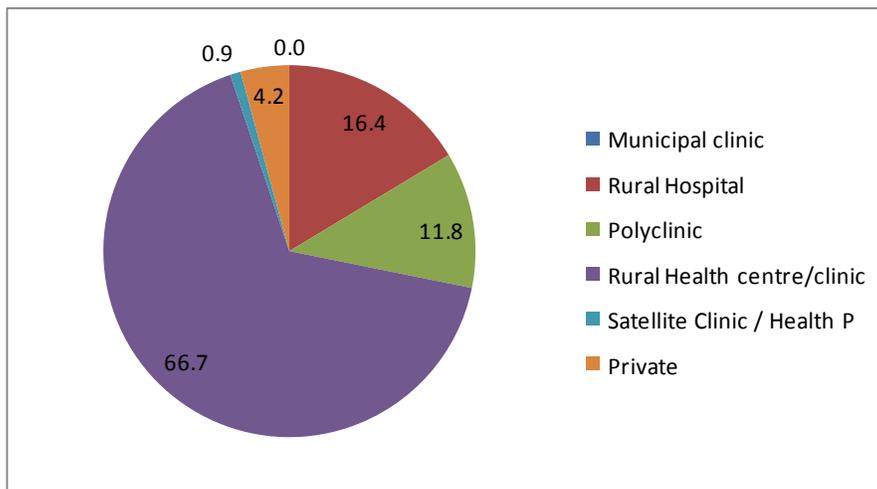
Table 10 shows that most neonatal deaths (up to 28 days of life) are reported in hospitals accounting for 92% of all neonatal deaths. Harare (1,048 neonatal deaths or 24% of total) followed by Midlands (566 neonatal deaths – 13% of total) and Manicaland (518 neonatal deaths – 12%) had the highest reported number of neonatal deaths. It is worth noting that Harare and Manicaland also had the highest number of reported maternal deaths. This data is self reported and may be an overestimate or under estimate of the true picture. Matabeleland South had the lowest number of reported neonatal deaths (4%).

**Table 10: Summary of the number of reported neonatal deaths at Level 1 facilities and hospitals, between Jan-Dec 2010**

Province	Number of Live Births reported by Province from all facilities	Level 1 Neonatal Mortality	Hospital Neonatal Mortality	Total Neonatal Deaths
Bulawayo	20,607	2	457	459
Harare	68,735	36	1,012	1,048
Manicaland	44,922	66	452	518
Mashonaland Central	52,425	40	206	246
Mashonaland East	41,062	45	345	390
Mashonaland West	40,256	42	333	375
Masvingo	44,564	20	404	424
Matabeleland North	18,535	23	158	181
Matabeleland South	18,041	16	157	173
Midlands	39,363	40	526	566
<b>Total</b>	<b>388,510</b>	<b>330</b>	<b>4,050</b>	<b>4,380</b>

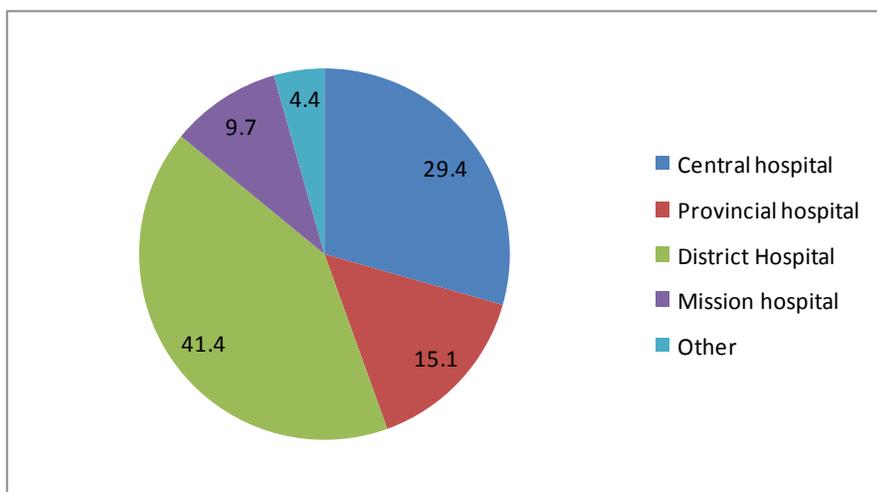
Figure 6 below illustrates the proportion of neonatal deaths reported by Level 1 facilities. Of all the deaths occurring at Level 1, the majority (66.7%), were reported at rural health centre/clinic level. Rural Hospitals reported 16.4%, and polyclinics at 11.8% of neonatal deaths at this level. Of note were municipal clinics that did not record any neonatal deaths for the period under review which needs further verification.

**Figure 6: Proportion of neonatal deaths reported by Level 1 facilities by type of facility, Jan- Dec 2010**



The Figure 7 below gives proportions of hospitals who reported neonatal deaths by type for the period January – December 2010. The majority (41.4%) of neonatal deaths occurred at district hospitals followed by central hospitals 29.4% and provincial 15.1%. Less deaths occurred at mission hospitals 9.7% in comparison to district, provincial and central hospitals.

**Figure 7: Proportion of reported neonatal deaths reported by type of hospital, Jan – Dec 2010**



**Summary of Key Findings**

- The commonest two top ranking diseases seen at Level 1 and hospital facilities in Under 5 children were diarrhoea and ARI.
- Rural health centres attended to the most outpatient consultations attending to

10,846,112 cases between Jan-Dec 2010.

- District hospitals admitted the most inpatient cases (33.9%).
- In total 905 maternal deaths were reported by both Level 1 and hospital facilities in 2010. The majority of maternal deaths occurred at a hospital level (68%), with 28% occurring in the community and only 3.8% at Level 1 facilities. Of those occurring at Level 1 facilities, the majority occurred at a rural health centre.
- The majority of maternal deaths (48%) reported by hospitals occurred at the central hospital level.
- A total of 4,380 neonatal deaths occurred in 2010. Hospitals reported the highest number of neonatal deaths, 92% compared with 8% occurring at Level 1 facilities.

## 5. Human Resources for Health

The availability of appropriately trained, skilled and a well-motivated workforce is a critical component for the efficient delivery of health care. In recognition of this, one of the goals of the National Health strategy 2009-2013 is to reduce vacancy levels across all staff categories by 50% by 2013. To ensure that the health delivery system is able to effectively and efficiently carry out its mandate of providing health care to the population, staffing levels are guided by the setting of an establishment figure across all staff categories. The setting of an establishment helps track and monitor human resources movement within and outside the health sector. However, establishments need to be reviewed periodically taking into consideration population growth and changes in burden of disease e.g. HIV epidemic, maternal mortality and non-communicable diseases. As highlighted in the background of this assessment, Zimbabwe is slowly emerging from an unprecedented socio-economic situation that resulted in inadequate resources including financial, human and material.

This section of the report assesses the availability of human resources for health care during the NIHFA assessment. Table 11 below shows the current establishment and vacancy rates reported by health facilities in Zimbabwe.

### *Medical Doctors*

The MoHCW establishment of doctors includes specialists, general practitioners and interns. The MoHCW has an establishment of 1,768 doctors, which also includes medical cadets. In this assessment, interns were not captured so reference was made to current MoHCW returns. The overall vacancy rate for doctors was 44%. Matebeleland South province had the highest vacancy rate for doctors at 71%, followed by Bulawayo, which had a vacancy of 69%. The NIHFA requested facilities to report numbers of government medical officers in post and findings recorded a total of 22. This varies slightly with MOHCW routine reporting system that indicated 24 district medical officers were in post in December 2011 against an establishment of 59. The NIHFA results therefore showed a DMO vacancy rate of 63%,

which is consistent with the MoHCW returns of 2011. The doctor population ratio was 1 doctor per 15,473 people. However this figure excludes doctors from private sector.

**Table 11: Total establishment of health workers, current numbers in post and vacancy rate by type of health worker, Dec 2011**

Province	Medical doctors			Nurses: RGNs, SCNs, PCNs,			Pharmacist			Laboratory Scientists			Environmental Health (officers and Technicians)			Radiographer		
	Estab	In post	% vacant	Estab	In post	% vacant	Estab	In post	% vacant	Estab	In post	% vacant	Estab	In post	% vacant	Estab	In post	% vacant
Bulawayo	403	123	69%	1336	1183	11%	23	18	21%	1	1	0	0	0	0	30	24	20%
Harare	663	510	23%	2557	2276	11%	30	27	10%	13	10	23%	87	52	40%	59	42	29%
Manicaland	52	38	27%	1315	1198	9%	8	6	25%	13	9	31%	245	127	48%	14	3	79%
Mashonaland Central	49	23	53%	945	751	21%	7	0	100%	5	2	40%	232	135	42%	7	3	57%
Mashonaland East	58	24	59%	1323	1086	20%	10	4	60%	1	0	100%	299	135	55%	7	2	71%
Mashonaland West	55	20	64%	1047	1015	3%	7	6	14%	4	3	25%	184	115	38%	10	4	60%
Masvingo	49	18	63%	1150	1084	6%	10	6	40%	3	2	33%	191	133	30%	15	5	67%
Matabeleland North	25	13	48%	660	574	13%	8	3	63%	3	2	33%	223	127	43%	6	1	83%
Matabeleland South	45	13	71%	765	712	7%	8	2	75%	0	0		133	92	31%	8	1	88%
Midlands	59	32	46%	1352	1211	10%	9	5	44%	14	6	57%	278	138	50%	14	7	50%
<b>Total</b>	<b>1458</b>	<b>814</b>	<b>44%</b>	<b>12450</b>	<b>11090</b>	<b>11%</b>	<b>120</b>	<b>77</b>	<b>36%</b>	<b>57</b>	<b>35</b>	<b>39%</b>	<b>1872</b>	<b>1054</b>	<b>44%</b>	<b>170</b>	<b>92</b>	<b>46%</b>

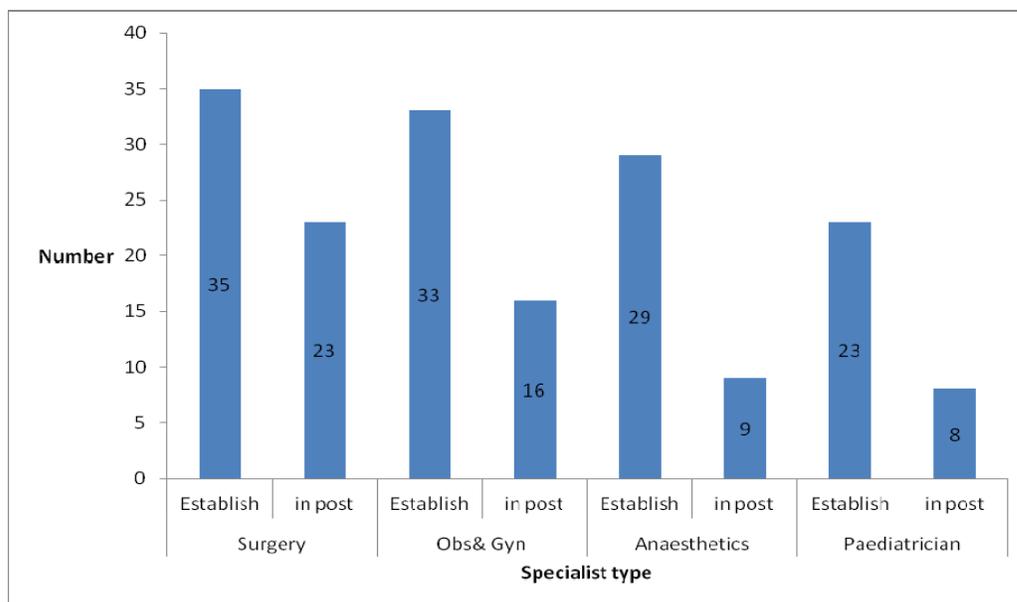
Note: for doctors MoHCW returns were used to complement the NHIFA findings

Amongst pharmacists, the overall vacancy rate was 36%. Mashonaland Central Province has an establishment of 7 pharmacists but did not have any in post at the time of the study. For laboratory scientists, there was also a high overall vacancy rate of 39%. This is particularly acute for medical laboratory scientists where in the whole country there were 35 in post against an establishment of 57. Mashonaland East Province did not have a medical laboratory scientist in post. For environmental health (officers and technicians) there was an overall vacancy rate of 44%. Mashonaland East Province reported the highest vacancy rate for environmental health personnel 55%. Almost half 46% of radiographer posts were also vacant. Amongst the nurses the overall vacancy rate was 11%. Mashonaland central province reported the highest vacancy rate for nurses of 21%.

**Specialist Doctors**

Specialists are critical in the health care delivery system to ensure provision of specialised services. Specialised doctors also play an important role in training and undertaking supervision of health professionals at provincial and district levels. Figure 8 shows the number of reported different specialist doctors in hospitals. This assessment revealed high vacancy rates for specialists. For anaesthetists for example, only 31% of posts were filled. Most of the specialist posts are filled in the urban areas only. Of note is that among the hospitals in Bulawayo city, none had an anaesthetist in post. This compromises delivery of surgical as well as intensive unit care services.

**Figure 8: Number of selected specialists in post by category national level, December 2011**



Given the high specialist doctors vacancy rates across the different areas, this means that newly qualified doctors, deployed to the districts are receiving inadequate clinical and supportive supervision from specialist doctors.

To assess distribution of nurses across the country both Level 1 facilities and hospitals were asked to indicate the number of nurses who were in post at the time of the assessment. Table 12 below summarises the total number of Registered General Nurses (RGNs) and Primary Care Nurses (PCN) reported to be in post by province. Information from the assessment indicates that Harare Province reported the highest number of all nurses 2,177, followed by Midlands Province with 1,424. However, the holding of RGNs posts by PCNs obscures the absolute vacancy rate among RGNs. Data on midwives is presented below.

**Table 12: Distribution of Registered General Nurses, State Certified Nurses and Primary Care Nurses by Province, December 2011**

Province	Total Population (Census data)	RGN- level 1	SCN -level1	PCN -level1	RGN - hospital	SCN -hospital	Total Number of nurses	Nurse population ratio
Bulawayo	732,715	43	3	0	1047	90	1183	1:619
Harare	2,053,241	241	32	13	1910	80	2276	1:902
Manicaland	1,698,926	116	32	336	634	80	1198	1:1418
Mashonaland Central	1,077,905	40	28	282	388	13	751	1:1435
Mashonaland East	1,220,827	84	28	330	592	52	1086	1:1124
Mashonaland West	1,326,142	150	27	293	503	42	1015	1:1306
Masvingo	1,429,845	123	44	298	579	40	1084	1:1319
Matabeleland North	763,358	85	20	175	268	26	574	1:1330
Matabeleland South	707,164	71	20	267	308	46	712	1:993
Midlands	1,585,295	155	43	306	657	50	1211	1:1309
<b>Total</b>	<b>12,595,418</b>	<b>1,108</b>	<b>277</b>	<b>2,300</b>	<b>6,886</b>	<b>519</b>	<b>11,090</b>	<b>1:1136</b>

Data for nurses includes registered general nurses and primary care nurses only.

\* PCNs are holding posts for RGNs

In this assessment the national average nurse to population served was 1:1136. Bulawayo had the lowest population/nurse ratio with 1 nurse to 619 people and Mashonaland Central and Manicaland with the fewest nurses per population served.

Table 13 below shows that there were 70 registered nurse anaesthetists among the 125 hospitals with 15 of these being in Harare. This is against a self-reported ideal establishment of 288. The ideal figure given is recognised for being very subjective. There were 124 registered theatre nurses across 125 hospitals. Of the 259 registered psychiatry nurses, 148 (57%) were from Bulawayo. This is likely because Ingutsheni hospital, a mental health institution, employs most of these nurses.

**Table 13: Distribution of Specialist Nurses by Province at Hospital level, Dec 2011**

Province	Reg Nurse Anaesthetist			Reg Nurse Theatre			Reg Nurse Psychiatry		
	Est*	Filled*	Ideal	Est*	Filled*	Ideal	Est*	Filled*	Ideal
Bulawayo	0	2	30	0	1	40	136	148	246
Harare	0	15	15	0	38	182	25	20	49
Manicaland	4	9	40	10	27	53	11	8	27
Mashonaland Central	11	7	16	7	4	22	4	5	10
Mashonaland East	7	4	40	7	8	54	8	10	52
Mashonaland West	4	8	57	2	8	35	5	27	54
Masvingo	11	7	22	5	14	48	10	12	33
Matabeleland North	7	7	20	4	7	20	8	5	14
Matabeleland South	5	3	25	4	4	27	5	10	39
Midlands	4	8	23	2	13	35	3	14	18
<b>Total</b>	<b>53</b>	<b>70</b>	<b>288</b>	<b>41</b>	<b>124</b>	<b>516</b>	<b>215</b>	<b>259</b>	<b>542</b>

\*Est= approved establishment as reported by hospital

\*\*Filled= number of posts filled at time of assessment

Table 14 below shows the ratios by Province of midwives to women of a reproductive age. On average there was an average of 1 midwife per 988 women of reproductive age. Mashonaland Central had the lowest number of midwives to population served, 1 midwife to 1,530 population. Both Harare and Manicaland, which had the highest maternal mortality cases reported also, have some of the lowest midwife to population served ratios. However it should be noted that primary care nurses, state certified and registered general nurses are also expected to provide reproductive services as part of their general duties so this is only a very crude estimate, which needs further analysis.

**Table 4: Distribution of midwives by Province, Dec 2011**

Province	Total Population*	Total Number Women of reproductive age	Total Number of Midwives	Ratio of midwives to population of women of reproductive age
Bulawayo	732,715	226,490	339	1:668
Harare	2,053,241	623,768	609	1:1024
Manicaland	1,698,926	414,408	320	1:1295
Mashonaland Central	1,077,905	261,683	171	1:1530

Mashonaland East	1,220,827	293,637	230	1:1277
Mashonaland West	1,326,142	332,719	420	1:792
Masvingo	1,429,845	359,838	346	1:1040
Matabeleland North	763,358	176,174	192	1:918
Matabeleland South	707,164	163,755	201	1:815
Midlands	1,585,295	395,599	459	1:862
<b>Total</b>	<b>12,595,418</b>	<b>3,248,071</b>	<b>3287</b>	<b>1:988</b>

\*2002 census projections

### ***Primary Care Counsellors***

Primary care counsellors superseded the approved establishment as 161.9% were in post. This could be attributed to the scale up of programmes such as HIV testing and counselling, prevention of mother-to-child transmission of HIV and TB interventions.

### **Summary of Key findings**

- In December 2011, the overall vacancy rate for doctors was 44% compared to 11% of nurses.
- The doctor population ratio was 1 doctor per 15,473 people.
- The vacancy rates for specialist doctors were also high with vacancy rates for surgeons at 34%, anaesthetists at 69% and paediatricians at 65%.
- The national average ratio of nurse to population served was 1:1136.
- The national ratio of one midwife to women of reproductive age served was 1:988 with lowest coverage of midwives/population served in Mashonaland central.

## ***4.1 In-service Training***

As new medical conditions arise and new treatment methods are adopted, health workers need further training to keep abreast with trends. The trainings are also a strategy for staff development. In this assessment both Level 1 and hospital facilities were asked to indicate the type of training they had received and the numbers trained in various disciplines in the previous 2 years. Figure 9 and Table 14 below illustrate the number of people trained in various disciplines. Figure 9 gives a summary of the national picture of trainings conducted while Table 14 is stratified by province.

**Figure 9: Total number of health workers trained by training category between January 2010-December 2011**

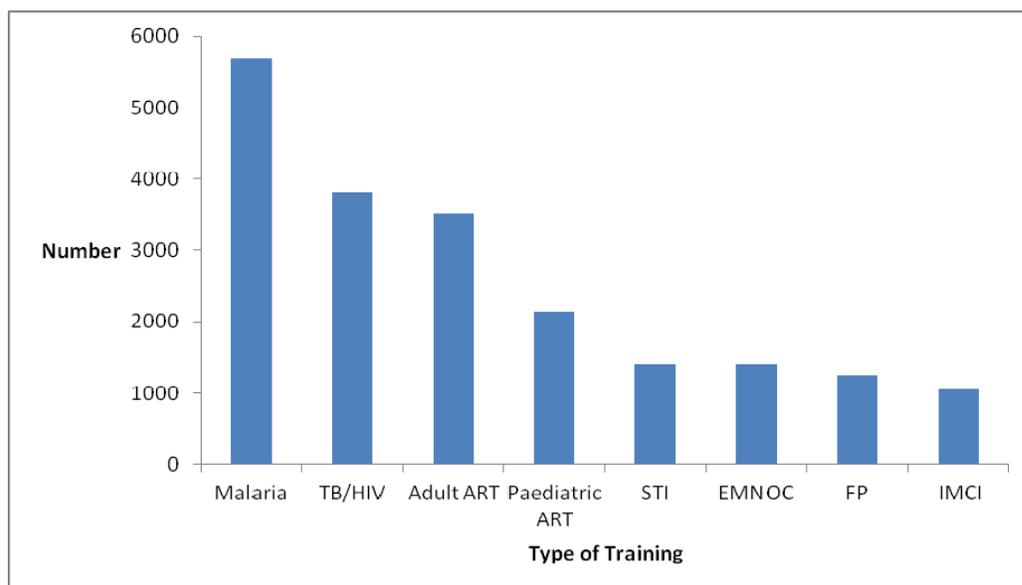


Table 15 shows that most of the training in the preceding two years focused mainly on malaria, TB and HIV including PMTCT. In comparison relatively little training was conducted for IMCI, FP, EMONC and STI management.

**Table 15: Total numbers of health workers trained in various disciplines in all facilities between January 2010-December 2011**

Province	IMCI	Malaria	TB/HIV	PMTCT	STI	FP	EMONC	Paed ART	Adult ART
Bulawayo	17	93	277	331	89	88	133	182	292
Harare	51	206	630	515	143	226	129	152	270
Manicaland	213	976	485	776	258	162	259	307	580
Mashonaland Central	73	823	288	455	133	111	105	221	352
Mashonaland East	149	827	622	649	164	125	146	373	540
Mashonaland West	131	432	192	471	99	121	153	136	192
Masvingo	103	666	458	494	153	137	160	175	369
Matabeleland North	35	588	236	367	78	57	112	175	282
Matabeleland South	124	544	221	465	107	95	94	203	216
Midlands	157	541	404	1036	183	124	110	212	433
<b>Total</b>	<b>1,053</b>	<b>5,696</b>	<b>3,813</b>	<b>5,559</b>	<b>1,407</b>	<b>1,246</b>	<b>1,401</b>	<b>2,136</b>	<b>3,526</b>

In this assessment, staff at Level 1 facilities and hospitals were asked to indicate areas where further training was required. The most commonly mentioned area of training was in midwifery. Provision of ART and use of family planning methods such as insertion of IUDs

and implants were ranked 2<sup>nd</sup> and 3<sup>rd</sup> respectively. Table 16 shows the ranking of areas of further training requested.

**Table 16: Ranking of areas of further training requested by Level 1 facilities and hospitals, Dec 2011**

<b>Ranking</b>	<b>Technical area</b>
1	Midwifery
2	ART(Adult AND paediatric)
3	Family Planning (Insertion of implants and IUCDs)
4	Emergency Obstetric Care
5	Integrated Management of Newborn and Child health Illness
6	Essential Newborn Care
7	Use of Point of care CD 4 machine
8	Essential Obstetric Care
9	Data Management
10	Sexually Transmitted Diseases

These figures are subjective and further analysis to understand actual needs based on numbers already trained and establishment of staff have not been further analysed.

#### ***4.2 Information, Education and Communication materials***

Information, Education and Communication (IEC) materials are important tools for health education and promotion. Level 1 facilities were asked in this assessment to indicate the availability of posters and brochures in their settings for a variety of conditions. Figure 10 below reflects availability of these education materials. Most of Level 1 facilities had HIV and AIDS related IEC materials. EmONC (13.7%) and IMCI 22.7% brochures were the least available. As a form of educational tool use of videos was very minimal as only 2.3% of Level 1 facilities reported use of videos. Facilities from Harare were more likely to report use videos compared to any other province.

**Figure 10: Availability of educational materials among Level 1 facilities by Province, December 2011**

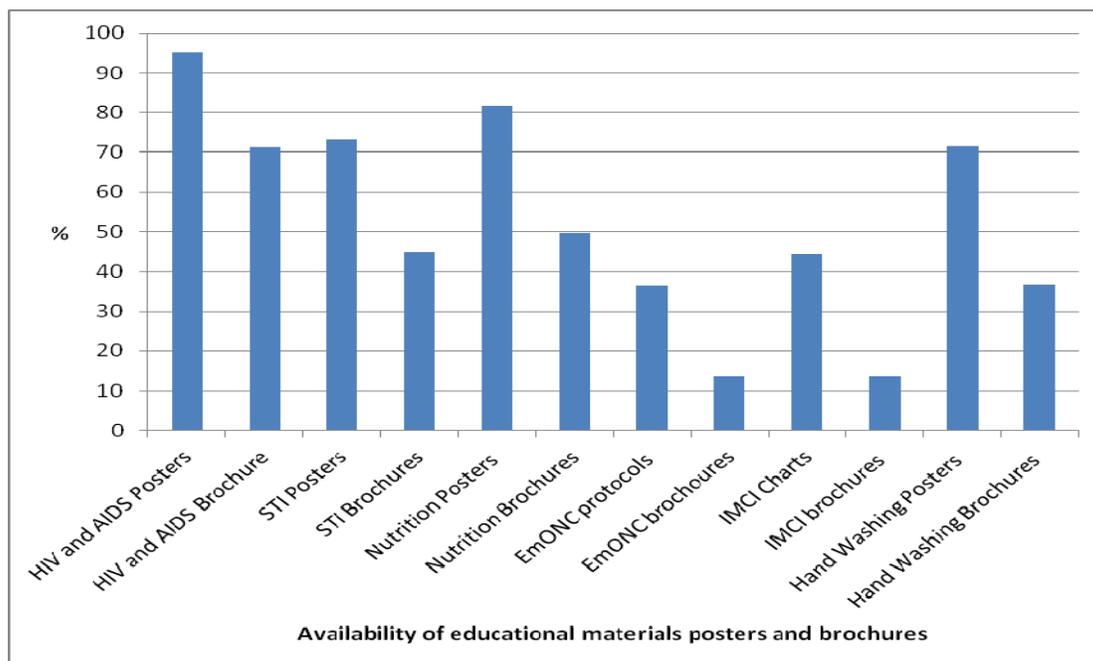
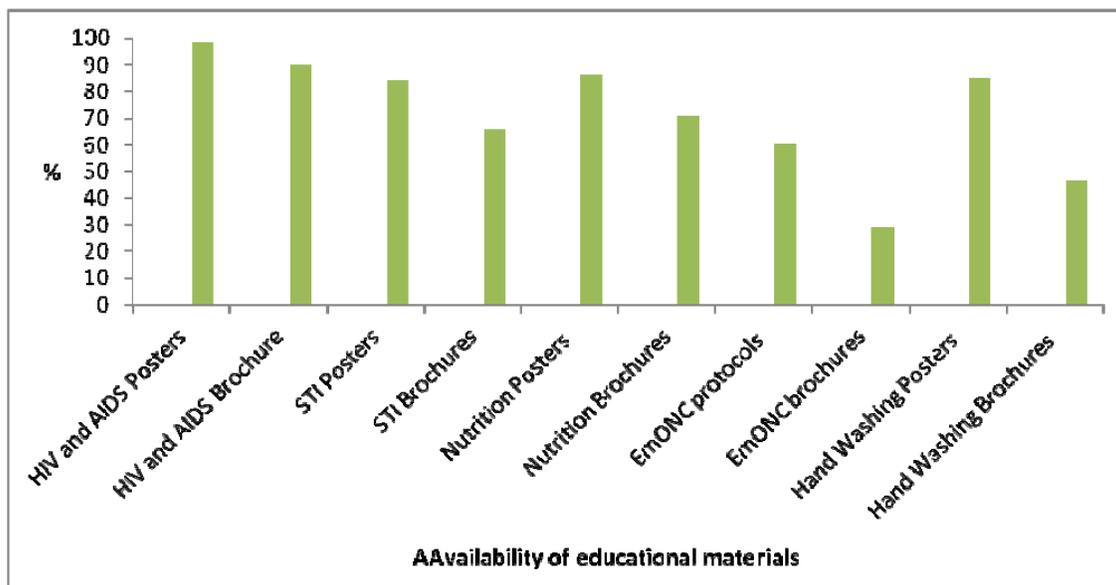


Figure 11 below illustrates the availability of educational materials for a variety of conditions at hospitals.

**Figure 11: Availability of IEC materials among hospitals by Province, December 2011**



In general, hospitals had more posters and brochures compared to Level 1 facilities. However, availability of EmONC brochures was similar to that of Level 1 facilities below 23% at Level 1 and 29% at hospitals.

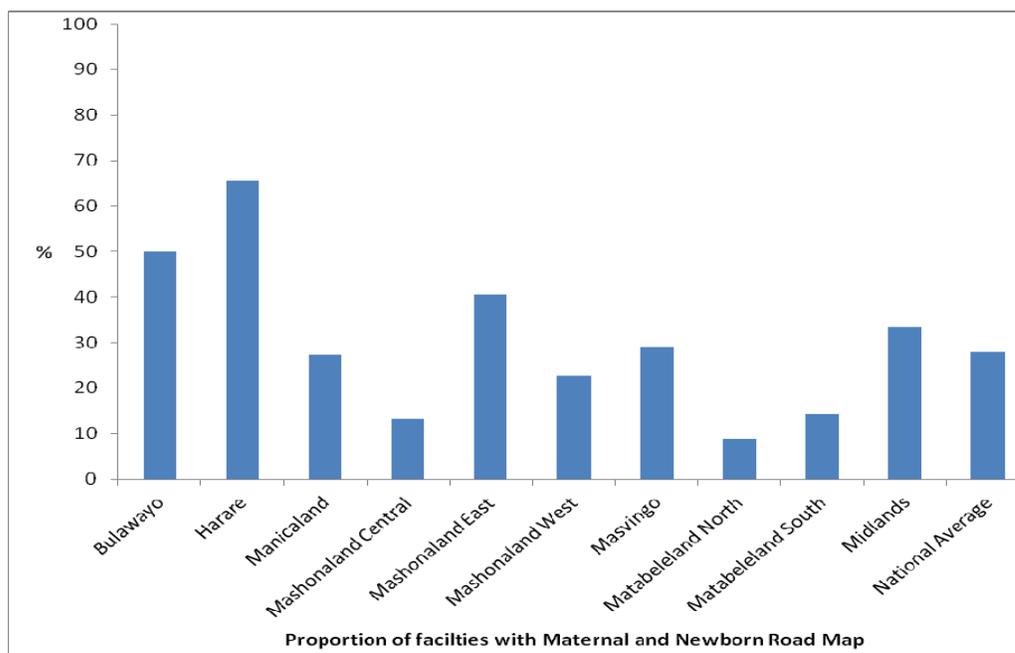
### 4.3 Availability of Guidelines and National Protocols

Guidelines and national protocols are designed, distributed and periodically reviewed and upgraded to meet and address emerging health needs. They can be used as a reference to guide practice and standardise care across the health delivery system. In addition the availability of different guidelines, for example EDLIZ, also promotes rational drug use.

Most of the hospitals in the assessment indicated that they had the following guidelines: Focused Ante-natal Care (98%); Emergency Obstetric Protocols (78%); Newborn Care Protocols (73%); National Maternal and Newborn Health Road Map (54%); and guidelines on family planning (77%).

Figure 12 below shows that approximately 30% of all public health facilities reported that the Maternal and Newborn Health Roadmap was available. Harare reported the highest proportion of facilities (65%) who had the MNH roadmap, while Matebeland North reported the lowest (8.8%) which is significantly below the national average. The NIHFA did not assess how often these guidelines, policies or protocols were used or acknowledged as being available by all health workers.

**Figure 12: Proportion of all facilities (Level 1 and hospitals) with the National Maternal and Newborn Road Map present at the facility, December 2011**



More detailed information on the availability of other national guidelines is available on request to the MoHCW.

**Summary of key findings**

- Most of the in-service training provided in the past 2 years focused on HIV, TB and Malaria. Less training was conducted for IMCI, FP and EmONC.
- The most commonly mentioned area of training needed was midwifery.
- Among Level 1 facilities, IEC materials on EmONC (13.7%) and IMCI 22.7% were the least available and brochures with key pregnancy related messages were only available in 29% of hospital facilities.
- Use of videos was minimal with only 2.3% of Level 1 facilities reporting use of videos.
- 30% of all public health facilities reported the availability of the Maternal and Newborn Health Roadmap.

**5 Service Delivery****5.1 Provision of Emergency Care Services**

Availability of trained health professional at health facilities on a 24 hour basis is one of the cornerstones of achieving good health outcomes. This study assessed whether facilities provide continuous care.

**Table 17: Provision of after-hours services by Level 1 facilities by Province, December 2011**

<b>Province</b>	<b>Nos. of Level 1 facilities</b>	<b>Nos. providing after hour services</b>	<b>% Providing after hour services in each Province</b>	<b>Average nos. of patients attended per day after hours</b>
Bulawayo	19	0	0	1
Harare	52	4	7.7	2
Manicaland	216	179	82.9	6
Mashonaland Central	111	91	82.0	9
Mashonaland East	168	117	69.6	4
Mashonaland West	141	97	68.8	4
Masvingo	162	122	75.3	5
Matabeleland North	92	74	80.4	5
Matabeleland South	108	88	81.5	5
Midlands	181	138	76.2	5
<b>Total</b>	<b>1,250</b>	<b>910</b>	<b>72.8</b>	<b>5</b>

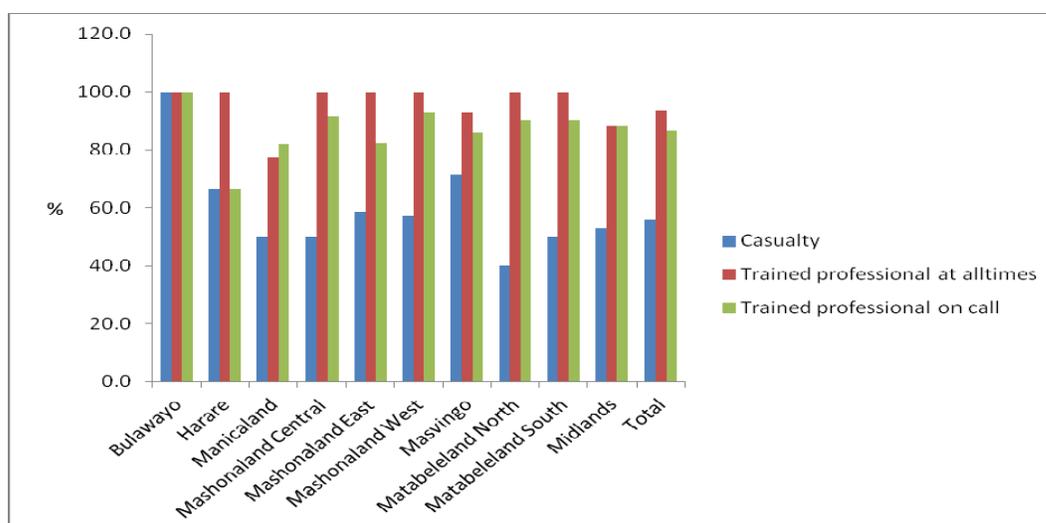
Table 17 illustrates that among Level 1 facilities, 72.8% reported that they provide after hour services. Most facilities attend to an average of 5 patients after hours. On average Mashonaland Central attended to almost double (9) the number of patients after hours that other facilities managed. Level 1 facilities from Harare and Bulawayo generally did not provide on call services. It should be noted that the level of care that can be provided after hours will vary depending on the type of Level 1 facility but actual scope of services provided was not differentiated or analysed in this assessment.

**Table 18: Availability of a 24-hour Casualty department by type of hospital, Dec 2011**

Type of Health Facility	Yes	No	Total
Central hospital	6	0	6
Provincial hospital	7	1	8
District Hospital	19	31	50
Mission hospital	31	15	46
Private	7	8	15
<b>Total</b>	<b>70</b>	<b>55</b>	<b>125</b>

At hospital level, the assessment shows that although 93.6% of the hospitals have a trained health professional on duty at all times, only 56% of hospitals have a 24-hour casualty department open as seen in Table 18. All central hospitals in Harare and Bulawayo reported that a casualty or emergency department was operational 24 hours a day, 7 days a week. Out of the 8 provincial hospitals only 1 did not have a 24-hour casualty department. 19 out of 50 (38%) of district hospitals reported having a casualty or emergency department operating 24 hours a day compared to 31 out of 46 (67%) mission hospitals. However, this finding may not be a true representation of the situation as outpatients departments also double up as emergency/casualty departments in most districts and the questionnaire did not explore how often this occurs.

**Figure 13: Availability of a 24-hour casualty department, trained professional at all times and on call from hospital data by Province, Dec 2011**



### 5.1.1 Distance travelled to access care between the different levels of care

To enhance effective and efficient planning for transportation of patients who will have been referred for further management and care from Level 1 facilities to hospitals, the assessment asked for distances travelled by ambulances between the different levels of care.

Approximately 21,443 patients were referred from a Level 1 facility to the next level of care in the last month preceding the assessment. According to the assessment, the maximum distance between a health facility and next referral level was 351 km and this was in Matabeleland South Province. Table 19 below shows the minimum and maximum distances travelled from health facility to the next level of care by Province.

**Table 19: Minimum and maximum distance from Level 1 facility to next level of care and number of patients referred in the previous month by Province, December 2011**

Province	Nos. of Patients referred last month	Minimum (km)	Maximum (km)
Bulawayo	1,566	2	15
Harare	3,949	0	23
Manicaland	3,735	0	163
Mashonaland Central	854	0	260
Mashonaland East	2,583	2	160
Mashonaland West	1,693	1	210
Masvingo	2,049	2	245
Matabeleland North	1,469	1	203
Matabeleland South	1,229	0	351
Midlands	2,316	0	178

It should be noted that some Level 1 facilities do not always follow standard referral protocols but refer patients straight to central hospitals, bypassing District and Provincial hospital levels depending on the emergency. Level 1 facilities in urban centres e.g. Bulawayo and Harare have easier access to central hospitals in comparison to rural provinces, hence the lower maximum travel distances between the levels of care.

#### Summary of Findings

- Among Level 1 facilities, 73% reported having a trained health professional available on call after hours.
- 94% of the hospitals have a trained health professional at all times.
- 56% of the hospitals had a casualty or emergency department.
- The maximum distance between a health facility and the next referral level of care is 351km and this was in Matabeleland South Province.

## 5.2 Universal Precautions

### 5.2.1 Infection control

The World Health Organization (WHO) prioritised infection control as one of the essential components for the provision of quality care. However, due to lack of funding, loss of experienced staff, lack of training, and deterioration of infrastructure, infection prevention and control programmes are not performing effectively in Zimbabwe. Initiatives are underway to strengthen infection control in health facilities.

Consistent supply of clean water is critical to everyday hospital operations. The NIHFA asked all health facilities to indicate availability of hand washing facilities including the availability of soap in outpatient consulting rooms as one important component of IPC. Amongst the 1,250 Level 1 facilities, 70% reported that there was a hand washing facility with water in the general outpatient consulting room(s). Amongst the mainly urban provinces, this was almost universal for example, all facilities in Bulawayo. Eighty percent of Level 1 facilities reported that soap was available in the general outpatient consultation rooms. The rural Provinces reported lower availability of soap compared to other urban Provinces.

### 5.2.2 Availability of Disinfectants

Adequate supply of disinfectants prevents spread of infections in health care settings. In the NIHFA, all health delivery settings who participated in the survey were asked to indicate the type and adequacy of selected disinfectants. Table 20 summarises selected disinfectants at both Level 1 facilities and hospitals.

**Table 20: Proportion of Level 1 facilities and hospitals with adequate supply of disinfectants in the last six months by Province, July - December 2011**

Province	% Facilities with adequate supply of disinfectant material (all types) in last 6 months	
	Level 1 Facilities N=1250	Hospitals N=125
Bulawayo	4	2
Harare	34	3
Manicaland	66	7
Mashonaland Central	44	7
Mashonaland East	45	8
Mashonaland West	29	6
Masvingo	68	7
Matabeleland North	15	5
Matabeleland South	22	4
Midlands	35	10
<b>Total (%)</b>	<b>362 (29%)</b>	<b>59 (47%)</b>

Slightly less than a third (29%) of Level 1 facilities reported adequate stocks of disinfectants in the last 6 months. A higher portion of hospitals 47% reported that they had adequate supplies of disinfectants in the last 6 months.

**Table 21: Proportion of Level 1 facilities and hospitals using sodium hypochlorite disinfectant by province, 2011**

Province	Nos. of Level 1 Facilities using sodium hypochlorite N=1250	Nos. of Hospitals using sodium hypochlorite N=125
Bulawayo	18	3
Harare	46	6
Manicaland	169	22
Mashonaland Central	103	12
Mashonaland East	153	16
Mashonaland West	111	14
Masvingo	139	14
Matabeleland North	66	8
Matabeleland South	76	9
Midlands	155	16
<b>Total (%)</b>	<b>1,036 (83%)</b>	<b>120 (96%)</b>

The majority of both Level 1 and hospitals used sodium hypochlorite as a disinfectant. For 83% of Level 1 facilities, sodium hypochlorite was the disinfectant of choice while for hospitals it was 96%.

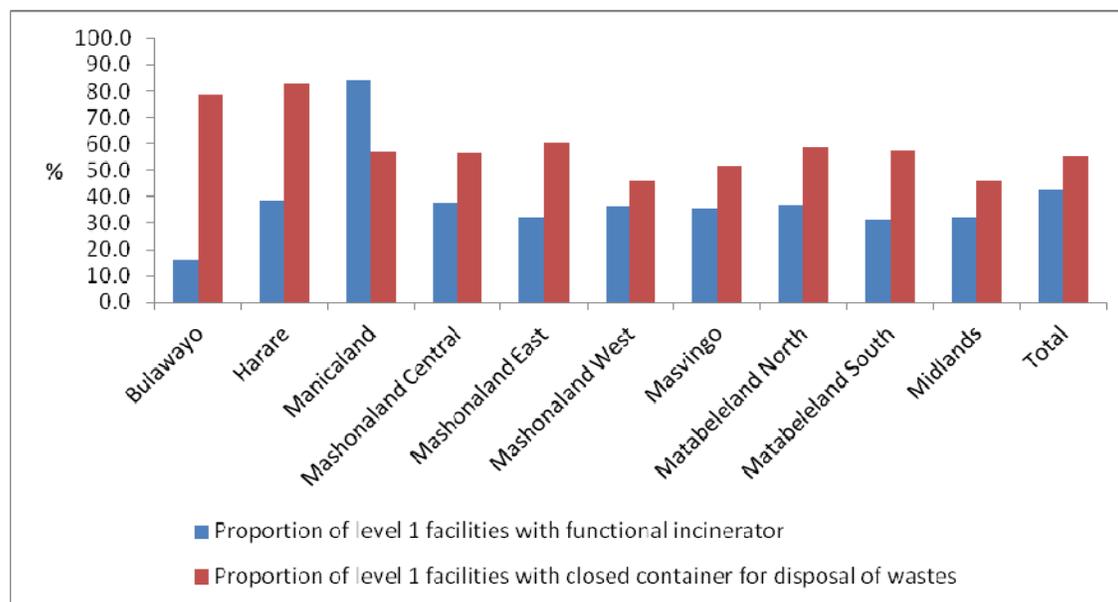
As part of the national IPC guidelines, the MoHCW recommends that every health facility should have a functional incinerator at all times. However due to the deterioration of infrastructure, a shortage of effective incinerators and poor waste disposal management practices have been observed.

Table 22 below shows the number of health facilities with guidelines for managing waste material; the number who have functional incinerators; and those that have closed containers for disposal of other waste. Less than a third (32%) of all health facilities (both Level 1 and hospitals) had Infection prevention and Control (IPC) guidelines, with these being more available at a hospital level (62%) compared to Level 1 (29%). The low proportion of Level 1 health facilities with guidelines on infection control might affect adherence to standardised approaches to infection control across health facilities.

Overall 45% of facilities had a functioning incinerator but Level 1 facilities were less likely to have these functioning (43%) compared to hospitals (68%). Closed containers for waste disposal were also more available at hospitals (75%) compared to Level 1 facilities (56%).

**Table 22: Availability of Guidelines, functional incinerators and closed container for waste disposal reported by all facilities by Province, December 2011**

Province	Nos. reporting Availability of Guidelines For managing waste		Nos. reporting Functional incinerator		Nos. reporting Closed container for waste disposal	
	Level 1 Facilities N=1250	Hospitals N=125	Level 1 Facilities N=1250	Hospitals N=125	Level 1 Facilities N=1250	Hospitals N=125
Bulawayo	12	2	3	3	15	1
Harare	21	5	20	3	43	4
Manicaland	64	11	182	18	123	19
Mashonaland Central	37	4	42	6	63	8
Mashonaland East	54	11	54	7	101	15
Mashonaland West	40	7	51	11	65	12
Masvingo	49	11	57	11	84	9
Matabeleland North	15	8	34	5	54	8
Matabeleland South	19	5	34	8	62	7
Midlands	55	13	58	13	84	11
<i>Total</i>	<i>366</i>	<i>77</i>	<i>535</i>	<i>85</i>	<i>694</i>	<i>94</i>

**Figure 14: Availability of incinerators and closed containers for disposal of waste among Level 1 facilities by Province, December 2011**

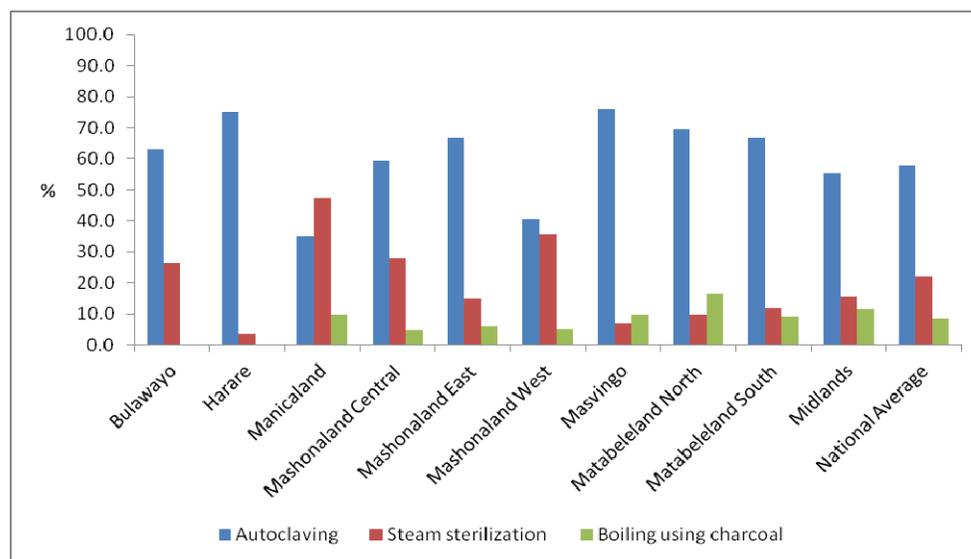
### 5.2.3 Methods of Sterilization

To curb infection transmission in health care settings reusable equipment should always be adequately sterilized. Both Level 1 facilities and hospitals were asked to indicate the final methods used for sterilizing equipment before re-use. Level 1 facilities reported on at least 3

final methods and hospitals reported on two. Figure 16 gives the distribution of final methods of sterilization used by Level 1 facilities followed by Figure 17 for the hospitals.

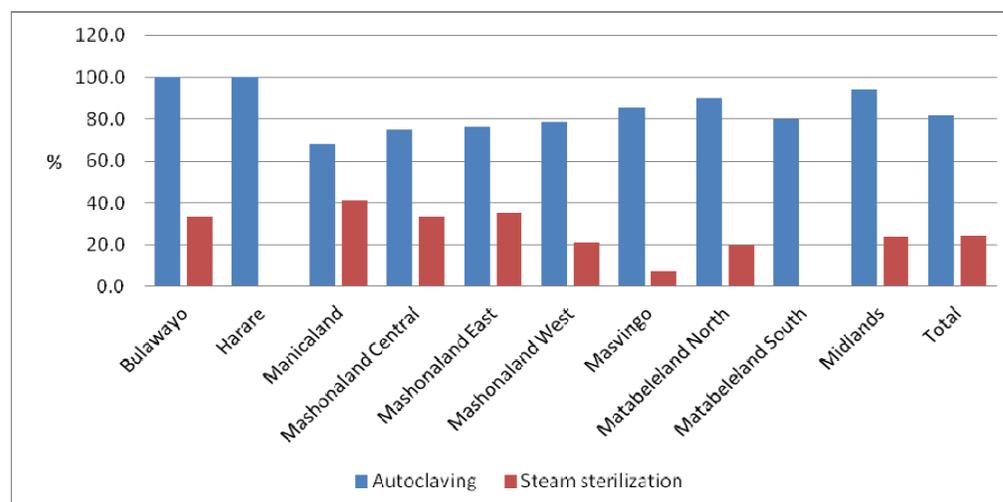
Among Level 1 facilities, 58% reported autoclaving as the final method of sterilization of equipment. The second most common method used was steam sterilization at 22%. Of note is that 105 facilities (8.4%) used charcoal or wood fire to sterilize equipment. The assessment did not have a follow up question on the functionality of the autoclaves so it is unclear whether these are the number of facilities who are currently using these for sterilization.

**Figure 15: Final methods of sterilization used by Level 1 facilities by Province, December 2011**



For hospitals the two most common final methods of sterilization used were autoclaving (82%) and steam sterilization (24%).

**Figure 16: Final methods of sterilization used by hospitals facilities by Province, December 2011**



#### **5.2.4 Isolation, Infrastructure and Personal Protective Equipment (PPE)**

To curb the spread of infection among both health workers and patients, there should be adequate and well ventilated rooms available to isolate and treat patients with infectious conditions. By their design, Level 1 facilities do not admit patients with infectious conditions and isolation wards are not part of the infrastructure. Hospitals, which are the higher level of care, should be designed to have isolation wards for patients with infectious conditions. In this assessment, hospitals were asked to indicate availability and adequacy of isolation facilities. Seventy one per cent of hospitals indicated that they had an isolation ward.

The constant supply of personal protective equipment protects both health providers and patients from acquisition and transmission of infectious diseases. Hospitals were asked to indicate availability of PPE. Personal protective equipment seems to be a challenge as only 38% of the hospitals had protective boots in stock.

#### **Summary of Findings**

- Only 29% of Level 1 facilities reported adequate stock of disinfectants in the last 6 months.
- Less than half of the hospitals (47%) reported that they had adequate supplies of disinfectants to last 6 months.
- Less than half (45%) of all Level 1 and hospital facilities had a functional incinerator.
- Less than a third (32%) of all health facilities (N=1375) had health facility guidelines for infection control.
- Autoclaving was reported by 58% of Level 1 facilities as the final method of sterilization of equipment compared to 82% of hospitals.
- 71% of hospitals indicated that having an isolation ward.

## **6 Service Delivery: Specific Health Services including MNCH**

This section of the report provides an overview of maternal and child health services in Zimbabwe. It highlights the key aspects of maternal and child care, including the availability of staff and services for antenatal care (ANC), safe delivery, postnatal care (PNC), and management of obstetric complications. To ensure effective management and provision of maternal health to women, different maternal health services are provided at different health facilities of the tiered health delivery system. In general, Level 1 facilities manage routine and low-risk MNCH cases, while hospitals manage more complicated clinical cases, often on a referral basis.

## 6.1 Antenatal Care Services

ANC is the entry point in promoting healthy behaviors and preparedness during pregnancy, childbirth, and the postpartum period. It is also important for the early detection and treatment of complications. In this assessment both Level 1 facilities and hospitals were asked to report on the total number of ANC cases they had attended in the year 2010. The total number reported included new and repeat ANC bookings.

**Table 23: Summary of ANC cases attended at Level 1 and hospital facilities by Province between Jan-Dec 2010**

Province	Level 1 Facilities N= 1250	ANC cases seen at Level 1 facilities	Hospitals N=125	ANC cases seen at Hospitals	Total Nos. of ANC cases	Total Number of Midwives	Midwife/ANC ratio
Bulawayo	19	9,664	3	4,579	14,243	339	1:42
Harare	52	38,540	6	25,650	64,190	609	1:105
Manicaland	216	56,735	22	23,715	80,450	320	1:251
Mashonaland Central	111	35,855	12	19,198	55,053	171	1:322
Mashonaland East	168	36,610	17	12,282	48,892	230	1:213
Mashonaland West	141	36,867	14	12,082	48,949	420	1:117
Masvingo	162	58,841	14	25,074	83,915	346	1:243
Matabeleland North	92	32,030	10	10,638	42,668	192	1:222
Matabeleland South	108	18,359	10	14,017	32,376	201	1:161
Midlands	181	50,387	17	25,469	75,856	459	1:165
<b>Total</b>	<b>1,250</b>	<b>373,888</b>	<b>125</b>	<b>172,704</b>	<b>546,592</b>	<b>3287</b>	<b>1:166</b>

Table 23 shows that a total of 546,592 ANC cases were attended to at both Level 1 facilities and hospitals in 2010. This includes repeat visits. Masvingo Province reported the highest number of ANC visits at 83,915, while Bulawayo reported the least at 14,243. When comparing Level 1 and hospitals, almost twice as many ANC visits were attended at Level 1 facilities.

Table 24 on the next page below summarises the availability of specific components of ANC at both Level 1 facilities and hospitals including the capacity of health facilities to test clients for anaemia, carry out urinalysis and diagnose syphilis and other common STIs. PMTCT regimes given at different facilities and counselling services on HIV prevention, positive living, nutrition and family planning are also included. These components of care were based on whether they were available in December 2011.

The majority of all facilities, more than 90%, offered key components of routine Antenatal care such as checking weight, blood pressure, testing for syphilis and HIV. In comparison, fewer facilities provided testing for anaemia and urinalysis, although hospitals were more likely to provide these services compared to Level 1 facilities. For example, in Matabeleland South province only 13% of Level 1 facilities were able to measure Hb and only 4.6% conducted urinalysis. Other components of antenatal care included provision of intermittent presumptive treatment of malaria (71.4%) and distribution of free ITNs (28.8%). It should be noted that not all districts are considered malaria prone and so it is not routine practice to

provide malaria prophylaxis in all districts. More specific details on malaria prevention can be found in the section on malaria later on in the report.

Variances were also noted between hospitals and lower levels of health care in the management of pregnancy related complications. The majority of hospitals managed pre-eclampsia (84.0%); hypertension (85.6%), at risk pregnancies (82.4%) and nearly three quarters (74.4%) of hospitals managed diabetes. For more details on the management of complications, refer to Table 30 under the 'delivery' chapter. Only 3 hospitals out of 125 conducted outreach services. For findings related to the quality of care in managing these conditions, see the later chapters that specifically address this.

For effective delivery of ANC services, appropriate and functional equipment should be available. In this survey, it was noted that there were shortages of equipment that included gestation calculators, fetoscopes, glucometers and haemoglobinometers. For example among 1,250 Level 1 facilities there were 288 glucometers compared to a perceived need for 2,191. Similarly for haemoglobinometers only 278 were available compared to a required 1,189. The shortage of haemoglobinometers may explain the low proportion of Level 1 facilities offering an Hb test. Of note was the shortage of gestation calculators where 576 were available against an expected 2,025. For further information on the availability of equipment please refer to equipment section.

**Table 24: Proportion of Level 1 facilities and hospitals providing ANC by type of service and Province, 2011**

Province	Number of facilities		% of facilities Weighing clients		% of facilities measuring Blood Pressure		% of facilities testing for Syphilis		% of facilities carrying out Urinalysis		% of facilities measuring Hb		% of facilities with On Site HIV testing	
	Level 1 N=1250	Hospital N=125	Level 1 N=1250	Hospital N=125	Level 1 N=1250	Hospital N=125	Level 1 N=1250	Hospital N=125	Level 1 N=1250	Hospital N=125	Level 1 N=1250	Hospital N=125	Level 1 N=1250	Hospital N=125
Bulawayo	19	3	94.7	66.7	94.7	66.7	94.7	66.7	57.9	33.3	15.8	66.7	100.0	66.7
Harare	52	6	59.6	50.0	59.6	50.0	59.6	50.0	51.9	50.0	51.9	50.0	76.9	50.0
Manicaland	216	22	96.3	95.5	95.4	95.5	93.5	86.4	14.4	54.5	33.3	59.1	97.7	95.5
Mashonaland Central	111	12	98.2	100.0	100.0	100.0	91.0	100.0	12.6	58.3	27.0	75.0	99.1	100.0
Mashonaland East	168	17	94.0	94.1	97.0	94.1	96.4	94.1	30.4	88.2	37.5	82.4	100.0	94.1
Mashonaland West	141	14	90.1	100.0	95.0	100.0	91.5	100.0	14.9	71.4	36.9	71.4	95.7	100.0
Masvingo	162	14	92.6	100.0	95.1	100.0	93.8	100.0	15.4	57.1	21.0	71.4	96.3	92.9
Matabeleland North	92	10	92.4	100.0	97.8	100.0	93.5	100.0	8.7	40.0	32.6	80.0	95.7	100.0
Matabeleland South	108	10	93.5	100.0	94.4	100.0	84.3	100.0	4.6	30.0	13.0	70.0	98.1	100.0
Midlands	181	17	93.9	94.1	95.0	94.1	88.4	94.1	5.5	52.9	33.7	88.2	96.1	88.2
<b>Total</b>	<b>1,250</b>	<b>125</b>	<b>92.6</b>	<b>94.4</b>	<b>94.5</b>	<b>94.4</b>	<b>90.6</b>	<b>92.8</b>	<b>16.2</b>	<b>57.6</b>	<b>30.9</b>	<b>72.8</b>	<b>96.6</b>	<b>92.8</b>

\*Harare data to be treated with caution as some of the clinics reporting do not offer MCH services

### **6.1.1 User Fees for ANC at Level 1 facilities and hospitals in December 2011**

Current MOHCW policy is that Maternal and child health services should be free at all facilities. Among Level 1 facilities just under half 46% reported charging user fees for ANC. On average Level 1 health facilities charged US\$9.00 for ANC booking compared to hospitals which charged US\$15.00. The figure by Province ranged from the lowest US\$4 for Matabeleland South to the highest of US\$30 in Mashonaland East. Among the hospitals the ANC booking fee ranged from \$4 in Matabeleland South province to \$35 in Harare.

#### **Summary of key findings**

- A total of 546,592 ANC cases were attended to at both Level 1 facilities and hospitals in 2010. This includes repeat visits. Of these 68% of ANC cases are attended to at Level 1 facilities.
- More than 90% of all facilities, offered key components of routine Antenatal care such as checking weight, blood pressure, and testing for syphilis and HIV.
- At Level 1 facilities, only 31% tested for anaemia and only 16% carried out routine urinalysis for pregnant women compared to anaemia testing at 73% of hospitals and urinalysis at 57%.
- Critical shortages of basic equipment to carry out routine Antenatal care including gestation calculators, fetoscopes, glucometers and haemoglobinometers were noted particularly at Level 1 facilities.
- Among Level 1 facilities almost half, 45.5% reported charging user fees for ANC.
- ANC User fee charges ranged between \$4 to \$35.

### **6.2. Deliveries**

Institutional deliveries have the potential to reduce the risk of complications and infections both for the mother and/or the baby that may lead to death, serious illness or life-long disabilities. In this assessment Level 1 facilities and hospitals were asked to indicate the total number of deliveries that they had attended to in the year 2010. Table 25 gives the total numbers by Province for all facilities.

Facilities were asked to indicate if they offer services for normal deliveries. Eighty-nine per cent (n=1110) of the Level 1 facilities reported offering services for normal deliveries. A crude midwife to delivery ratio was calculated and an average of one midwife to 92 deliveries was found. However this calculation does not take into consideration that other nurses also manage deliveries.

**Table 25: Total number of deliveries including caesarean sections reported at Level 1 facilities and hospitals by Province, between Jan-Dec 2010**

Province	Normal Deliveries						
	Nos. of Level 1 Facilities reporting N= 1110	Deliveries reported at Level 1 facilities	Nos. of Hospitals N=124	Deliveries reported at Hospital	Total nos. of deliveries in 2010	Total Number of Midwives	Midwife/Delivery ratio
Bulawayo	6	6,642	3	14,979	21,621	339	1:64
Harare	16	31,718	6	30,149	61,867	609	1:102
Manicaland	205	17,107	22	16,293	33,400	320	1:104
Mashonaland Central	107	10,383	12	15,865	26,248	171	1:154
Mashonaland East	161	14,100	17	15,510	29,610	230	1:129
Mashonaland West	123	10,904	14	19,692	30,596	420	1:73
Masvingo	151	14,780	14	24,476	39,256	346	1:114
Matabeleland North	84	4,973	10	9,455	14,428	192	1:75
Matabeleland South	95	3,071	10	10,258	13,329	201	1:66
Midlands	162	10,412	17	21,797	32,209	459	1:70
<b>Total</b>	<b>1,110</b>	<b>124,090</b>	<b>124</b>	<b>178,474</b>	<b>302,564</b>	<b>3287</b>	<b>1:92</b>

\*Deliveries for the hospitals also include caesarean sections but exclude home deliveries

Not all pregnant women have a delivery at a health facility. Home deliveries are however often captured in a health facility delivery register and routinely reported upon. Table 26 below gives the number of reported home deliveries. Mashonaland West province reported the highest number of home deliveries with the least number reported from Bulawayo province.

The total number of deliveries reported in 2010 including home deliveries was 367,471. A Caesarean Section rate was calculated by dividing the total number of Caesarean Sections by the total number of deliveries to obtain a national average of 6%. This compares to a population figure of 5% reported in the latest 2010/2011 Demographic Health Survey.

**Table 26: Number of reported home deliveries at Level 1 facilities and hospitals between Jan-Dec 2010**

Province	Home Deliveries reported at Level 1 Facilities	Home Deliveries reported at Hospitals	Total Nos. of home Deliveries
Bulawayo	476	480	956
Harare	2338	503	2841
Manicaland	7747	1,010	8757
Mashonaland Central	6876	1,388	8264
Mashonaland East	8777	1,859	10636
Mashonaland West	9342	1,212	10554
Masvingo	4022	832	4854
Matabeleland North	3937	824	4761
Matabeleland South	3355	1,372	4727
Midlands	6190	2,367	8557
<b>Total</b>	<b>53,060</b>	<b>11,847</b>	<b>64,907</b>

### **6.2.1 Capacity of health facilities to manage maternal care**

According to international standards based on UN recommendations, a ‘Basic Emergency Obstetric Care (BEOC) facility’ is defined as performing all of the following six signal functions;

1. Administer parenteral antibiotics
2. Administer parenteral oxytocic drugs
3. Administer parenteral anti-convulsants for pre-eclampsia and eclampsia
4. Perform manual removal of placenta
5. Perform removal of retained products
6. Perform assisted vaginal delivery

In addition to these signal functions, a Comprehensive Emergency Obstetric Care (CEOOC) facility is capable of performing the following additional services:

7. Cesarean sections
8. Blood transfusions

Facilities that are able to provide the first 5 of the above signal functions but are unable to perform assisted vaginal deliveries are classified as BEMOC minus 1 facilities. The NHIFA set out to classify the number of health facilities in Zimbabwe as either a BEMOC or CMEOC facility in order to assist in planning to improve maternal and newborn services in coming years. International standards recommend that per 500 000 population there should be 4 BMEOC and 1 CMEOC facility.

According to MoHCW policy, Level 1 facilities are not expected to conduct assisted vaginal deliveries without a doctor present. Therefore the majority of Level 1 facilities can only be expected to be classified as a “BEMOC minus 1” facility. This is reflected by the fact that only 1.2% of Level 1 facilities reported performing assisted vaginal delivery. Overall only

27.2% reported performing manual removal of the placenta. A higher proportion of facilities provide parenteral oxytocin and antibiotics, 50.8% and 47.6% respectively. Few facilities (21.4%) reported provision of parenteral anticonvulsants. A summary of the functions provided by Level 1 facilities is provided in the Table 27 below.

**Table 27: Proportion of Level 1 facilities providing individual BEMOC functions by province, Dec 2011 (N=1110)**

<b>Province</b>	<b>Nos. of Level 1 facilities</b>	<b>% providing Parenteral Antibiotics</b>	<b>% providing Parental Oxytocics</b>	<b>% providing Parenteral anticonvulsants</b>	<b>% providing Manual removal of placenta</b>	<b>% providing Manual removal of retained products</b>	<b>% providing Assisted vaginal delivery</b>
Bulawayo	6	16.7	50.0	33.3	0.0	0.0	0.0
Harare	16	56.3	81.3	68.8	18.8	12.5	0.0
Manicaland	205	47.3	41.5	17.1	24.9	12.2	0.5
Mashonaland Central	107	51.4	56.1	29.9	31.8	15.9	3.7
Mashonaland East	161	52.2	52.2	28.6	24.8	7.5	0.6
Mashonaland West	123	36.6	47.2	13.8	28.5	13.0	1.6
Masvingo	151	47.0	53.0	23.8	17.2	9.9	0.0
Matabeleland North	84	52.4	63.1	20.2	40.5	20.2	1.2
Matabeleland South	95	32.6	43.2	10.5	30.5	14.7	2.1
Midlands	162	56.2	53.7	19.1	30.9	13.0	1.2
<b><i>National Average</i></b>	<b><i>1110</i></b>	<b><i>47.6</i></b>	<b><i>50.8</i></b>	<b><i>21.4</i></b>	<b><i>27.2</i></b>	<b><i>12.5</i></b>	<b><i>1.2</i></b>

A further cross tabulation of the data presented above was made to understand the number of Level 1 facilities that can be defined as ‘BEMOC minus 1’ given that policy determines that Level 1 facilities should not be carrying out assisted vaginal deliveries. Table 28 shows the proportion of Level 1 facilities that therefore can be classified as BEMOC minus 1 facilities. Overall, only 4.1 of Level 1 facilities can be classified as ‘BEMOC minus 1’ facilities. In Bulawayo city none of the six Level 1 facilities that conducted deliveries can be classified as offering BEMOC minus 1 services. The next worst Province is Mashonaland West province where only 1 out of the 123 (0.8%) of the Level 1 facilities can be classified as providing BEMOC minus 1 services.

**Table 28: Proportion of Level 1 facilities classified as providing “BEMOC minus 1” services by province, Dec 2011**

Province	Number of Level 1 facilities	Proportion of facilities providing BEMOC minus 1 services
Bulawayo	6	0(0.0)
Harare	16	1(6.3)
Manicaland	205	7(3.4)
Mashonaland Central	107	8(7.5)
Mashonaland East	161	5(3.1)
Mashonaland West	123	1(0.8)
Masvingo	151	5(3.3)
Matabeleland North	84	4(4.8)
Matabeleland South	95	4(4.2)
Midlands	162	10(6.2)
<b>Total</b>	<b>1110</b>	<b>45(4.1)</b>

A similar data analysis was undertaken to understand the number of hospital facilities with the capacity to carry out all 8 signal functions and therefore be classified as providing Comprehensive Emergency Obstetric Care services. The breakdown in the types of services provided by the hospitals have been broken down according to Provinces in Table 29 below and according to type of hospital e.g. central, provincial in Table 30 on the page thereafter.

All hospitals in Harare and Bulawayo provided the 8 signal functions for CEmOC. However a smaller proportion of hospitals from the mainly rural provinces reported providing only 6 of the 8 signal functions. Variations across the provinces were seen in the types of functions provided by hospitals for instance only two hospitals in Matabeleland South province reported being able to provide blood transfusions to pregnant women.

**Table 29: Proportion of Hospitals providing CEmOC signal functions by Province, Dec 2011 (n=117)**

Province	Number of hospitals	% using Parenteral antibiotics	% using Parenteral Oxytocics	% using Parenteral anticonvulsants	% using Magnesium sulphate	% with capacity for Manual removal of placenta	% with capacity for Manual removal of retained products	% with capacity for Assisted vaginal delivery	% with capacity for C/section	% with capacity to provide Blood transfusion
Bulawayo	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Harare	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Manicaland	21	95.2	95.2	76.2	52.4	71.4	66.7	52.4	42.9	52.4
Mashonaland Central	12	100.0	100.0	100.0	75.0	91.7	75.0	58.3	75.0	41.7
Mashonaland East	16	100.0	100.0	93.8	68.8	81.3	68.8	50.0	56.3	50.0
Mashonaland West	14	92.9	100.0	92.9	71.4	78.6	71.4	35.7	35.7	50.0
Masvingo	13	100.0	92.3	92.3	76.9	100.0	92.3	76.9	84.6	69.2
Matabeleland North	10	100.0	100.0	90.0	90.0	90.0	100.0	80.0	90.0	80.0
Matabeleland South	10	100.0	100.0	90.0	100.0	80.0	80.0	70.0	50.0	20.0
Midlands	16	100.0	100.0	81.3	50.0	93.8	75.0	56.3	56.3	43.8
<b>National average</b>	<b>117</b>	<b>98.3</b>	<b>98.3</b>	<b>88.9</b>	<b>70.9</b>	<b>85.5</b>	<b>77.8</b>	<b>59.8</b>	<b>60.7</b>	<b>53.0</b>

All 5 Central hospitals providing maternal care were able to provide all 8 signal functions and these make up 10% of the total number of CEMOC facilities in the country. All 8 Provincial hospitals provided administration of parenteral antibiotics, oxytocin, and anti-convulsants but one was reported not able to carry out manual removal of the placenta or retained products. Assisted vaginal deliveries were not being conducted by 2 Provincial hospitals. Among the hospitals 70% reported performing C/S continuously in the previous three months. Only the central and provincial hospitals provided C/S continuously.

**Table 30: Summary of the provision of basic and emergency signal functions performed by type of hospital, Dec 2011**

Type of Hospital N=124	Parenteral antibiotics n (%)	Parental uterotonic n (%)	Parenteral anti-convulsants n (%)	Manual removal of placenta n (%)	Manual removal of retained products n (%)	Assisted vaginal delivery n (%)	Blood transfusion n (%)	Perform Caesarean section n (%)
Central hospital (n=5)*	5 (100%)	5 (100%)	5 (100%)	5 (100%)	5 (100%)	5 (100%)	5 (100%)	5 (100%)
Provincial hospital (n=8)	8 (100%)	8 (100%)	8 (100%)	7 (87.5%)	7 (87.5%)	6 (75%)	8 (100%)	8 (100%)
District Hospital (n=50)	49 (98%)	50 (100%)	46 (92%)	44 (88%)	37 (74%)	31 (62%)	25 (50%)	37 (74%)
Mission hospital (n=46)	43 (93.5%)	42 (91.3%)	37 (80.4%)	36 (78.2%)	34 (73.9%)	24 (52.2%)	18 (39%)	30 (65%)
Private (n=15)	10 (66.7%)	10 (66.7%)	8 (53.3%)	8 (53.3%)	8 (53.3%)	4 (26.7%)	6 (40%)	6 (40%)
<b>Total N=124</b>	<b>115 (92%)</b>	<b>115 (92%)</b>	<b>104 (83.2%)</b>	<b>100 (80%)</b>	<b>91 (72.8%)</b>	<b>70 (56%)</b>	<b>62 (49.6%)</b>	<b>87 (70%)</b>

\*One Central hospital has been excluded as it specializes in mental health and does not provide maternal services

Overall half of the hospitals were able to provide blood transfusion continuously in the previous three months. Manual removal of the placenta was not performed by 6 (12%) District hospitals while 13 (26%) did not perform removal of retained products. Only 31 (62%) District hospitals conducted assisted vaginal delivery. This may be related to the high vacancy rates of doctors and low numbers of theatre nurses as reported in the previous section or could be attributed to lack of equipment. However the NHIFA did not cross tabulate any of these factors for this report and further analysis would be required to confirm this.

**Table 31: Number of BEMOC and CEmOC facilities among hospitals, December 2011**

Province	No of Hospitals offering delivery	BEMOC minus 1 n (%)	BEMOC n (%)	CEmOC n (%)
Bulawayo	2	2 (100.0)	2 (100.0)	2 (100.0)
Harare	3	3 (100.0)	3 (100.0)	3 (100.0)
Manicaland	21	12 (57.1)	9 (42.9)	7 (33.3)
Mashonaland Central	12	9 (75.0)	7 (58.3)	4 (33.3)
Mashonaland East	16	10 (62.5)	7 (43.8)	6 (37.5)
Mashonaland West	14	10 (71.4)	5 (35.7)	3 (21.4)
Masvingo	13	11 (84.6)	9 (69.2)	7 (53.8)
Matabeleland North	10	8 (80.0)	7 (70.0)	8 (80.0)
Matabeleland South	10	7 (70.0)	6 (60.0)	1 (10.0)
Midlands	16	10 (62.5)	6 (37.5)	3 (18.8)
<b>National Average</b>	<b>117</b>	<b>82 (70.1)</b>	<b>61 (52.1)</b>	<b>44 (37.6)</b>

This assessment shows that 44 (37.6%) hospitals across the country provide Comprehensive Obstetric Emergency Care. Using current census projections this means that there is an estimated 1 CEmOC facility per 500 000 people. This is within the recommended 1 facility per 500 000 people providing CEmOC.

#### ***Management of routine and complicated labour and delivery***

The analysis below starts to unpack some of the indicators to explore the capacity of Level 1 facilities to manage routine and complicated labour and delivery cases. Table 32 shows the proportion of Level 1 facilities that perform basic obstetric functions during a normal delivery as well as manage some common complications of labour and delivery. About two thirds (68%) of these facilities reported use of a partograph to monitor labour progress. Matabeleland South province reported the lowest use of the partograph, in only 37% of facilities.

Although the majority of Level 1 facilities (86%), reported that they provide active management of the third stage of labour only 50.8% reported the use of oxytocin. Slightly more than half reported that they managed the following complications of pregnancy including: management of postpartum haemorrhage (56%), puerperal sepsis (50%) and post abortion care (54%) although a smaller proportion reported use of parenteral antibiotics, 47.6%. Only a fifth (22%) managed eclampsia, which is consistent with the fact that 21.4% reported the use of parenteral anticonvulsants. Slightly more than a quarter reported that they managed retained placenta (29%). Again the quality of care report will verify the observed quality of these practices of care against set standards.

**Table 32: Proportion of Level 1 facilities providing management of routine/complications of labour and delivery services by Province, 2011**

	Nos. of Level 1 facilities	Use of partograph n (%)	Manage third stage of labour n (%)	Manage Eclampsia n (%)	Manage PPH n (%)	Manage Puerperal sepsis n (%)	Manage Retained Placenta n (%)	Provide Post abortion care n (%)
	N=1110	N=1110	N=1110	N=1110	N=1110	N=1110	N=1110	N=1110
Bulawayo	6	5 (83.3)	5 (83.3)	4 (66.7)	4 (66.7)	3 (50.0)	2 (33.3)	2 (33.3)
Harare	16	16 (100.0)	16 (100.0)	11 (68.8)	15 (93.8)	11 (68.8)	11 (68.8)	14 (87.5)
Manicaland	205	134 (65.4)	194 (94.6)	48 (23.4)	124 (60.5)	102 (49.8)	66 (32.2)	130 (63.4)
Mashonaland Central	107	80 (74.8)	106 (99.1)	22 (20.6)	63 (58.9)	55 (51.4)	29 (27.1)	62 (57.9)
Mashonaland East	161	137 (85.1)	161 (100.0)	42 (26.1)	104 (64.6)	94 (58.4)	59 (36.6)	90 (55.9)
Mashonaland West	123	91 (74.0)	116 (94.3)	21 (17.1)	80 (65.0)	75 (61.0)	43 (35.0)	80 (65.0)
Masvingo	151	118 (78.1)	148 (98.0)	29 (19.2)	104 (68.9)	85 (56.3)	33 (21.9)	90 (59.6)
Matabeleland North	84	62 (73.8)	82 (97.6)	33 (39.3)	53 (63.1)	43 (51.2)	30 (35.7)	58 (69.0)
Matabeleland South	95	36 (37.9)	91 (95.8)	20 (21.1)	61 (64.2)	57 (60.0)	42 (44.2)	54 (56.8)
Midlands	162	77 (47.5)	152 (93.8)	17 (10.5)	89 (54.9)	99 (61.1)	44 (27.2)	96 (59.3)
<b>National average</b>	<b>1110</b>	<b>756 (68.1)</b>	<b>1071 (96.5)</b>	<b>247 (22.3)</b>	<b>697 (62.8)</b>	<b>624 (56.2)</b>	<b>359 (32.3)</b>	<b>676 (60.9)</b>

**Table 33: Proportion of hospitals providing routine and emergency obstetric care by province, December 2011**

Province	Number of Hospitals	% offering services for normal delivery	% using partograph to monitor labour and child birth	% with capacity to actively Management of the third stage of labour	% with capacity to manage Eclampsia	% with capacity to manage PPH	% with capacity to manage Puerperal sepsis	% with capacity to manage Retained Placenta	% with capacity to provide Post abortion care
Bulawayo	2	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Harare	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Manicaland	21	100.0	95.2	100.0	81.0	85.7	90.5	76.2	76.2
Mashonaland Central	12	100.0	100.0	100.0	83.3	91.7	91.7	91.7	100.0
Mashonaland East	16	100.0	100.0	100.0	68.8	87.5	100.0	81.3	93.8
Mashonaland West	14	100.0	100.0	100.0	92.9	100.0	100.0	92.9	92.9
Masvingo	13	100.0	100.0	100.0	92.3	100.0	107.7	107.7	107.7
Matabeleland North	10	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Matabeleland South	10	100.0	100.0	100.0	50.0	100.0	100.0	90.0	100.0
Midlands	16	100.0	100.0	87.5	81.3	100.0	100.0	93.8	100.0
<b>Total</b>	<b>117</b>	<b>100.0</b>	<b>99.1</b>	<b>98.3</b>	<b>82.1</b>	<b>94.9</b>	<b>98.3</b>	<b>90.6</b>	<b>94.9</b>

At hospital level there was universal use of the partograph to monitor labour and delivery. Over 90% of hospitals reported managing the third stage of labour, postpartum haemorrhage, retained placenta and post abortion care. A smaller proportion 82.1% reported capacity to manage eclampsia. This was particularly the case in Matabeleland South where only half of the hospitals reported to have the capacity to manage eclampsia.

Out of the 117 hospitals offering delivery service, 69 reported that they had capacity to conduct caesarean sections. A slightly higher number 73 had access to blood transfusion. In Mashonaland Central Province only 5 out of 12 hospitals had access to blood. Table 34 shows number of hospitals with capacity for conducting Caesarian section, access to blood transfusion and functional intensive care for mothers. Functional intensive care facilities were mostly available in Harare and Bulawayo. The mainly rural Provinces have little access to intensive care services.

**Table 34: Number of hospitals offering Caesarean Sections and blood transfusion and user fees for these services (N=117)**

Province	Number of Hospitals	Nos. with capacity to carry out Caesarean Sections	Nos. with access to blood transfusions	Nos. charging for blood Transfusion	Nos. with free blood Transfusion services	Nos. with functional intensive care unit for mothers
Bulawayo	2	2	2	2	0	2
Harare	3	3	5	1	5	3
Manicaland	21	10	11	4	7	1
Mashonaland Central	12	9	5	1	6	1
Mashonaland East	16	7	9	8	7	0
Mashonaland West	14	6	9	4	5	0
Masvingo	13	11	10	9	6	1
Matabeleland North	10	7	9	5	5	1
Matabeleland South	10	5	5	3	2	0
Midlands	16	9	8	3	7	0
<b>Total</b>	<b>117</b>	<b>69</b>	<b>73</b>	<b>40</b>	<b>50</b>	<b>9</b>

### 6.2.2 User fees for deliveries

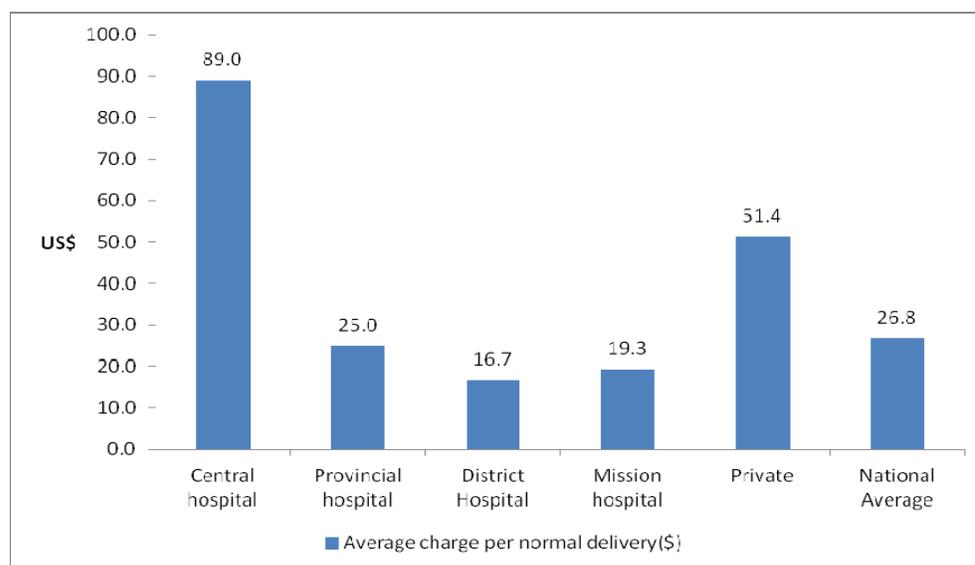
Among Level 1 facilities that provide delivery services (n=1110), 15.1% charged user fees for deliveries. Bulawayo province reported the highest proportion of facilities charging user fees, 36.8% followed by Harare at 25%. Among the mainly rural provinces facilities from Mashonaland East province, a higher proportion charged user fees (22%) compared to other provinces such as Matebeleland South province, 2.9%.

Among the Level 1 facilities an average of \$9.62 was charged for delivery among those facilities conducting deliveries. Harare and Bulawayo reported minimum charges of \$25.00 and maximum of \$30.00 for delivery but this needs to be interpreted with care as on average only 30% of Level 1 facilities in both Harare and Bulawayo actually reported providing deliveries. The other provinces reported a minimum charge of \$1.00 or \$2.00 for delivery.

**Table 5: Mean, minimum and maximum fees charged per delivery for Level 1 facilities by Province, Dec 2011**

Province	Mean cost for delivery in US\$	Minimum cost for delivery in US\$	Maximum charge for delivery in US\$
Bulawayo	28.75	25	30
Harare	26.50	25	30
Manicaland	5.12	1	15
Mashonaland Central	6.98	1	35
Mashonaland East	8.25	1	52
Mashonaland West	12.55	2	100
Masvingo	6.50	1	30
Matabeleland North	28.36	2	250
Matabeleland South	22.00	1	96
Midlands	4.83	1	20
<b>Total</b>	<b>9.62</b>	<b>1</b>	<b>250</b>

Among the 125 hospitals assessed, 70 (56%) reported that they charge fees for delivery in addition to fees charged for ANC booking. Five out of six central hospitals charged fees for delivery services, while 6 out of the 8 provincial hospitals charged. Average fees for delivery varied depending on the level of care with highest average fees being charged for specialized care at Central hospitals (\$89), followed by private hospitals and the lowest being charged at District hospital. Overall an average fee of US\$27 was charged per delivery at all hospitals that charged fees. This fee ranged from US\$11 charged in Matabeleland North Province to US\$88 for Harare. Figure 19 below illustrates the range of fees charged for deliveries by type of hospital.

**Figure 17: Range of user fees for deliveries by type of hospital, 2011**

### ***6.2.3 Capacity of health facilities to manage basic and emergency newborn care***

Table 36 below shows that the majority of Level 1 facilities lack capacity to resuscitate newborns as only 43.7% reported use of bag and mask ventilation. In addition, only 10.5% provided oxygen for resuscitation of newborns compared to 83.8% of the hospitals. Only one Level 1 facility in the Midlands reported providing thermal care for newborns. A relatively small proportion of hospitals 47%, reported providing Vitamin K to newborns with lower reported use at only 6.2% of Level 1 facilities. These findings have a bearing on the high neonatal mortality rates currently reported.

In addition to providing neonatal care services similar to those provided at lower levels, hospitals also manage complicated cases such as preterm newborns and neonatal sepsis, and can carry out newborn surgical procedures as shown in Table 37. These services are offered at higher levels of care because they require more sophisticated equipment and medically trained professionals to manage such complications. Forty four per cent of 44.4% of hospitals for instance provided phototherapy for jaundice, but as few as 6.8% were able to provide exchange transfusions. Only 6 hospitals offered surgical services for the newborn. At hospitals, 89% review maternal deaths but fewer (74%) review newborn deaths.

**Table 36: Summary of the proportion of Level 1 facilities and hospitals offering selected components of routine and emergency neonatal services by Province, Dec 2011**

Province	Ventilating of newborns n (%)		Provision of parenteral antibiotics n (%)		Provision of parenteral Vitamin K n (%)		Provision of parenteral dextrose n (%)		Provision of Oxygen n (%)		Cord Care n (%)		Provision of BCG n (%)	
	Level 1 N=1,110	Hospital N=117	Level 1 N=1,110	Hospital N=117	Level 1 N=1,110	Hospital N=117	Level 1 N=1,110	Hospital N=117	Level 1 N=1,110	Hospital N=117	Level 1 N=1,110	Hospital N=117	Level 1 N=1,110	Hospital N=117
Bulawayo	5 (83.3)	2 (100)	0 (0)	2 (100)	0 (0)	21 (50.0)	1 (16.7)	2 (66.7)	4 (66.7)	2 (100.0)	5(83.3)	2 (100)	5 (83.3)	2 (100)
Harare	14 (87.5)	3 (100)	6 (37.5)	3 (100)	0 (0)	2 (66.7)	8 (50.0)	3 (50.0)	15 (93.8)	3 (100.0)	16 (100.0)	3 (100)	16 (100)	3 (100)
Manicaland	86 (42.0)	21 (95.2)	94 (45.9)	19 (90.5)	25 (12.2)	9 (42.9)	61 (29.8)	19 (86.4)	13 (6.3)	12 (90.5)	203 (99.0)	21 (100)	167 (81.5)	18 (85.7)
Mashonaland Central	64 (59.8)	12 (100)	52 (48.6)	10 (83.3)	7 (6.5)	9 (75.0)	47 (43.9)	8(66.6)	6 (5.6)	12 (100)	107 (100)	12 (100)	87 (81.3)	10 (83.3)
Mashonaland East	92 (57.1)	16 (93.8)	81 (50.3)	15 (93.8)	15 (9.3)	6 (37.5)	70 (43.5)	15 (88.2)	22 (13.7)	15 (93.8)	159 (98.8)	16 (100)	139 (86.3)	15 (93.8)
Mashonaland West	47 (38.2)	14 (92.9)	44 (35.8)	12 (85.7)	6 (4.9)	5 (35.7)	27 (22.0)	10 (71.4)	10 (8.1)	12 (71.4)	122 (99.2)	16 (100)	93 (75.6)	13 (92.9)
Masvingo	61 (40.4)	13 (100)	70 (46.4)	13 (100)	7 (4.6)	17(53.8)	49 (32.5)	13 (92.9)	10 (6.6)	12(100)	149 (98.7)	12 (92.3)	127 (84.1)	13 (100)
Matabeleland North	38 (45.2)	10 (100)	30 (35.7)	10 (100)	3 (3.6)	7 (70.0)	25 (29.8)	8 (80.0)	7 (8.3)	8 (80.0)	79 (94.0)	10 (100)	67 (79.8)	10 (100)
Matabeleland South	32 (33.7)	10 (100)	35 (36.8)	10 (100)	3 (3.2)	4 (40.0)	25 (26.3)	10 (100)	14 (14.7)	8(100.0)	92 (96.8)	10 (100)	77 (81.1)	10 (100)
Midlands	46 (28.4)	16 (100)	72 (44.4)	14 (87.5)	3 (1.9)	5 (31.3)	51 (31.5)	10 (58.8)	16 (9.9)	13 (62.5)	156 (96.3)	16 (100)	124 (76.5)	16 (100)
<b>Total</b>	<b>485 (43.7)</b>	<b>114 (99.1)</b>	<b>484 (43.6)</b>	<b>108 (92.3)</b>	<b>69 (6.2)</b>	<b>55(44)</b>	<b>364 (47.0)</b>	<b>98 (78.4)</b>	<b>117 (10.5)</b>	<b>97 (83.8)</b>	<b>1088 (98.0)</b>	<b>116 (99.1)</b>	<b>902(81.3)</b>	<b>110 (94.0)</b>

**Table 37: Number of hospitals that provide emergency neonatal services and review maternal and perinatal deaths by Province, Dec 2011 (n=117)**

<b>Province</b>	<b>Number of Hospitals</b>	<b>Manage preterm newborns</b>	<b>Manage neonatal sepsis</b>	<b>Manage birth asphyxia</b>	<b>Neonatal intensive care unit</b>	<b>Ventilate newborns</b>	<b>Newborn surgical services</b>	<b>Review maternal deaths</b>	<b>Review newborn deaths</b>
Bulawayo	2	2	2	2	2	2	2	2	2
Harare	3	3	3	3	1	1	1	3	1
Manicaland	21	13	18	19	0	10	0	19	15
Mashonaland Central	12	12	12	12	0	10	1	11	9
Mashonaland East	16	15	17	16	1	11	0	14	14
Mashonaland West	14	12	13	13	1	7	1	12	11
Masvingo	13	12	14	12	1	11	0	12	11
Matabeleland North	10	9	10	10	2	5	0	8	7
Matabeleland South	10	10	10	10	0	5	1	7	5
Midlands	16	14	16	15	2	10	0	16	12
<b>Total</b>	<b>117</b>	<b>102</b>	<b>115</b>	<b>112</b>	<b>10</b>	<b>72</b>	<b>6</b>	<b>104</b>	<b>87</b>

### 6.2.4 Postnatal Care Services

In this assessment both Level 1 facilities and hospitals were asked to indicate if they provided postnatal services and the timing. Table 38 reflects the proportion of Level 1 facilities providing PNC and the timing.

**Table 38: Proportion of Level 1 facilities providing Postnatal Care Services and the timing of PNC by Province, December 2011**

Province	Level 1 facilities	Post natal services Provided %	Kangaroo Mother Care %	HF charges for PNC %	Timing PNC visits			
					3 days	7 days	10 days	6 weeks
Bulawayo	19	94.7	21.1	5.3	78.9	47.4	73.7	94.7
Harare	52	65.4	40.4	5.8	76.9	73.1	69.2	71.2
Manicaland	216	99.1	46.8	3.7	73.1	69.0	69.9	96.3
Mashonaland Central	111	100.0	55.9	8.1	73.0	73.9	52.3	96.4
Mashonaland East	168	99.4	56.0	4.8	96.4	92.3	31.0	95.8
Mashonaland West	141	97.9	41.1	5.0	78.7	83.7	34.8	97.2
Masvingo	162	96.9	56.2	3.1	75.3	71.0	54.3	92.0
Matabeleland North	92	96.7	48.9	7.6	88.0	87.0	48.9	97.8
Matabeleland South	108	96.3	32.4	3.7	65.7	57.4	76.9	91.7
Midlands	181	98.9	39.8	11.6	55.2	63.5	73.5	96.7
<b>Total</b>	<b>1,250</b>	<b>96.9</b>	<b>46.6</b>	<b>5.8</b>	<b>75.3</b>	<b>73.8</b>	<b>56.7</b>	<b>94.5</b>

Table 38 shows that almost 97% of Level 1 facilities provided postnatal care, although less than half provided kangaroo mother care. Three quarters of facilities provided PNC visits at 3 days and 7 days, while the vast majority 94.5% offered services at the 6 week visit. Over half (56.7%) offered a 10-day PNC visit.

Early diagnosis of infants exposed to HIV was conducted in the majority of hospitals 88% this compares to 77% of Level 1 facilities providing EID services (see PMTCT and HIV sections for more details on PMTCT).

Other services provided by hospitals postpartum are captured in Table 39 below. Only 27 (22.7%) of the 119 hospitals were offering screening for cancer of the cervix. In Harare only one hospital was offering this service compared to two of the three hospitals in Bulawayo. This has implications on early detection and management of cervical cancer.

**Table 39: Postnatal Services provided by hospitals by Province, Dec 2011 (n=119)**

Province	Number of Hospitals	% Providing CTX prophylaxis to HIV-exposed infants	% Providing CTX prophylaxis to HIV+ve mothers	% Providing Ca Cervix screening at 6 weeks PNC	% Providing IYCF counselling and monitoring at 6 weeks PNC	% Providing FP counselling and services at 6 weeks PNC
Bulawayo	2	100	100	100	100	100
Harare	4	100	125.0*	25.0	50.0	75.0
Manicaland	20	100	100	15.0	90.0	90.0
Mashonaland Central	12	100	100	33.3	83.3	91.7
Mashonaland East	17	100	100	29.4	70.6	94.1
Mashonaland West	14	100	100	7.1	71.4	85.7
Masvingo	14	100	100	50.0	92.9	85.7
Matabeleland North	10	100	100	10.0	80.0	100
Matabeleland South	10	100	100	10.0	90.0	100
Midlands	16	100	100	12.5	87.5	87.5
<b>Total</b>	<b>119</b>	<b>100</b>	<b>100.8</b>	<b>22.7</b>	<b>82.4</b>	<b>90.8</b>

\*Problem with data reporting

### 6.2.5 Vitamin A supplementation

Vitamin A supplementation is essential: for the immune system to develop and function effectively; to enhance healthy growth and development; and for protection from respiratory infections and night blindness. In this assessment, Vitamin A stocks were available in 60% of the Level 1 facilities while only 7.7% reported stock outs of Vitamin A in the previous six months. In comparison a higher proportion 14.4% of hospitals reported stock of Vitamin A in the previous six months.

### 6.2.6 User Fees for PNC services

Only a small proportion (5.8%) of Level 1 facilities reported charging for PNC services. The average charge was US\$3 with a maximum charge of US\$19 reported in Harare.

### Summary of Key Findings

- The total number of deliveries reported in 2010 was 367,471 of which 18% (64,907) were home deliveries.
- Of all institutional deliveries, 59% occur at a hospital level. Harare manages the highest number of deliveries, reporting 61,867 (20%) in 2010.
- 6.1% of all deliveries were by Caesarean Section.
- Out of the 117 hospitals offering delivery services, 44 (37.8%) were able to deliver

six of the eight Comprehensive Emergency Obstetric Care (CEmOC) services.

- All central hospitals were able to provide all 8 signal functions of comprehensive obstetric care (CEmOC).
- Only 53% of hospitals reported having the capacity to provide blood transfusions and only 61% reported capacity to carry out Caesarean Sections.
- Only 45% of Level 1 facilities were categorised as providing Basic Emergency Obstetric Care minus 1 facilities i.e. ability to perform 5 out of 6 basic signal functions according to WHO recommendations.
- While approximately 50% of Level 1 facilities provided parenteral antibiotics and oxytocics, only 21% provided parenteral anti-convulsants and 27% could perform manual removal of a placenta.
- Eighty-nine per cent of the Level 1 facilities conducted normal deliveries but less than two thirds (60%) of these facilities used a partograph to monitor labour progress in comparison to more than 90% among hospitals.
- The majority of Level 1 facilities lack capacity to resuscitate newborn babies as only 43.7 % reported use of bag and mask ventilation. Only 10.5% provided oxygen for resuscitation of newborns compared to 83.8% of the hospitals.
- Among Level 1 facilities that provide delivery services (n=1110), 15.1% charged user fees for deliveries with a range between \$1 to \$250. 56% of hospitals reported charging user fees for delivery with an average charge at central hospitals of \$89 compared to lower charges of \$16 at District hospitals.
- 97% of Level 1 facilities provided postnatal care with three quarters providing PNC visits at 3 days and 7 days, while the vast majority 94.5% offered services at the 6 week visit.
- At hospitals, less than 22% provide cervical cancer screening as part of the routine 6 week postnatal care visit.

### **6.3 PMTCT and ART**

The government of Zimbabwe is strengthening the prevention of mother-to-child transmission of HIV (PMTCT) through provision of a comprehensive package of services that includes counselling, testing and provision of antiretroviral prophylaxis. The approach is anchored on the United Nations 4 pronged approach is as follows:

- Primary prevention of HIV
- Prevention of unintended pregnancies
- Prevention of mother-to-child HIV transmission

- Provision of comprehensive HIV care, treatment, and support for the HIV-positive woman and their families

The services are an integral package of Maternal and Child health services and include a variety of activities. The level of staffing often determines the degree, to which a facility offers the total PMTCT package, and whether the facility offers both antenatal care (ANC) and delivery services. Acceptable standards for PMTCT include the following:

- HIV testing and counselling for pregnant women
- Counselling HIV-positive women on infant feeding practices and maternal nutrition
- Providing prophylactic ARV drugs to HIV-positive women during pregnancy, labour, and delivery and to the newborn
- Providing family planning counselling and/or referrals

### ***6.3.1 HIV testing, counselling and antiretroviral therapy***

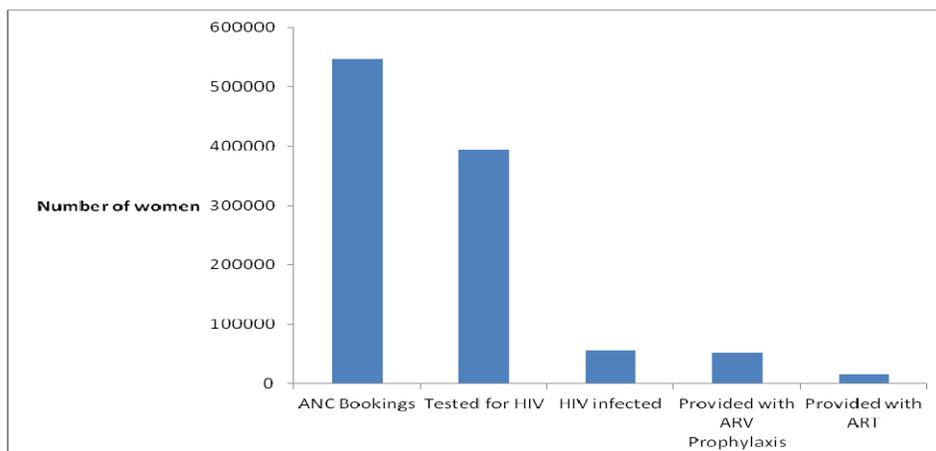
As part of accessing services given to pregnant women during ANC, health facilities were asked to provide information on HIV testing, counselling, provision of ARV prophylaxis and ART provision. Table 40 below reflects number of pregnant women counselled and tested for HIV, provided with ARV prophylaxis and initiated on ART where eligible at all facilities.

**Table 40: Number of pregnant women who received PMTCT care at Level 1 and hospital facilities by Province, Jan-Dec 2010**

Province	Total ANC*	Total Tested for HIV	Total HIV positive	Total provided with ARV prophylaxis	Total provided with ART
Bulawayo	14,243	13,398	4,255	4,258	4,527
Harare	64,190	43,709	4,842	5,314	3,415
Manicaland	80,450	55,382	5,410	4,997	1,951
Mashonaland Central	55,053	43,172	4,933	6,864	840
Mashonaland East	48,892	48,120	6,637	6,021	1,219
Mashonaland West	48,949	40,359	6,093	5,392	455
Masvingo	83,915	54,621	6,171	5,482	2,079
Matabeleland North	42,668	27,057	3,793	3,101	369
Matabeleland South	32,376	22,539	5,523	4,823	528
Midlands	75,856	45,966	7,478	5,372	983
<b>Total</b>	<b>546,592</b>	<b>394,323</b>	<b>55,135</b>	<b>51,624</b>	<b>16,366</b>

\*May include repeat visits for ANC or double counting as hospitals may have counted referred patients as an ANC booking

**Figure 18: The PMTCT Cascade for all facilities Jan-Dec2010:**



As shown in Figure 20, among women who were tested for HIV at Level 1 health facilities and hospitals, 14% tested HIV positive. This finding is consistent with current ANC estimates that put the proportion at 13.9% (2009 ANC estimates). Of all pregnant women testing HIV positive, the majority 93.6% were commenced on ARV prophylaxis<sup>1</sup> and 30% were commenced on antiretroviral therapy. There were however variations in numbers of eligible HIV positive women commenced on ART with the lowest number of 7.5% being in Mashonaland West province. Information on access to early infant diagnosis is presented in the section on STIs, HIV and AIDS and further details on access to CD4 testing are presented later on in the report.

#### Summary findings

- Among pregnant women who were tested for HIV at all facilities, 14%, tested HIV positive.
- The majority (94%) of women who tested HIV positive were commenced on ARV prophylaxis and 30% were commenced on antiretroviral therapy.

### 6.4 Family Planning Services

Family planning is one of the critical interventions in reducing maternal morbidity and mortality. Hence there is need to sustain the strong national family planning programme. The national programme aims at preventing unwanted pregnancies, and encouraging child spacing. To encourage appropriate and efficient use of family planning services, there is need for a comprehensive package of FP methods including long and short acting methods for women visiting health services that should include appropriate, safe and affordable methods.

<sup>1</sup>This is slightly higher than the rate of 84% that was reported in the national PMTCT annual report

Table 41 shows contraceptive methods provided by type for Level 1 facilities. Over 95% of the Level 1 facilities reported providing oral contraceptives, Depot Provera injection and both male and female condoms. Only 9% provided implants and 2.6% provided the Intra Uterine Contraceptive Device (IUCD). Among the hospitals the majority, over 80%, provided a variety of family planning methods that included condoms (male and female), oral contraceptives, and progesterone injections. Two thirds (69.6%) provided implants and slightly more than half, 52% provided emergency contraception. Only 8% provided intrauterine devices.

**Table 41: Proportion of facilities providing family planning methods by specific method at Level 1 facilities by Province, Dec 2011 (N=1250)**

<b>Province</b>	<b>Level 1 facilities</b>	<b>Combined oral pill (%)</b>	<b>Progesterone only pill (%)</b>	<b>Progesterone injection (%)</b>	<b>IUCD (%)</b>	<b>Implant (%)</b>	<b>Male condom (%)</b>	<b>Female condom (%)</b>
Bulawayo	19	100	100.0	100.0	5.3	21.1	100.0	100.0
Harare	52	88.5	94.2	86.5	5.8	9.6	98.1	100.0
Manicaland	216	97.7	96.8	97.2	1.9	11.1	97.7	95.4
Mashonaland Central	111	99.1	98.2	97.3	1.8	7.2	97.3	94.6
Mashonaland East	168	99.4	99.4	98.8	0.6	8.3	100.0	98.8
Mashonaland West	141	97.9	97.2	99.3	5.0	8.5	96.5	95.7
Masvingo	162	93.8	92.6	93.8	3.1	3.7	94.4	93.8
Matabeleland North	92	93.5	92.4	92.4	2.2	9.8	92.4	91.3
Matabeleland South	108	98.1	98.1	99.1	1.9	13.9	92.6	93.5
Midlands	181	97.8	97.8	97.8	3.3	8.3	97.8	98.3
<b>Total</b>	<b>1,250</b>	<b>97.0</b>	<b>96.6</b>	<b>96.7</b>	<b>2.6</b>	<b>9.0</b>	<b>96.6</b>	<b>95.8</b>

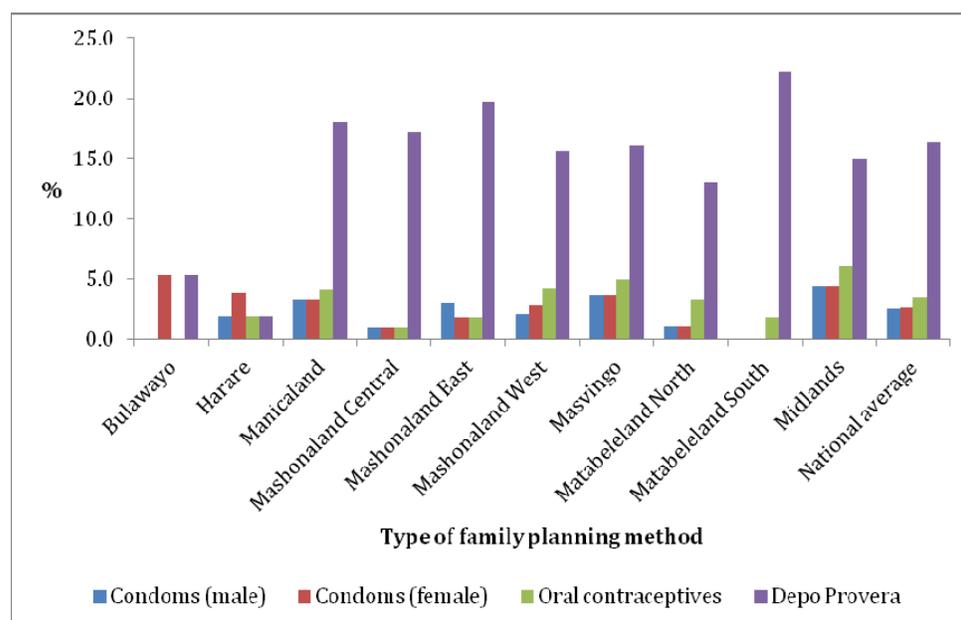
**Table 42: Proportion of facilities providing family planning by specific method at hospitals, by Province, Dec 2011 (N=125)**

Province	Number of Hospitals	Combined oral pill (%)	Progesterone only pill (%)	Progesterone Injection (%)	IUCD (%)	Implant (%)	Male condom (%)	Female condom (%)	Emergency contraceptive (%)
Bulawayo	3	100.0	66.7	100.0	0.0	33.3	100.0	100.0	33.3
Harare	6	66.7	66.7	66.7	0.0	50.0	83.3	83.3	50.0
Manicaland	22	81.8	81.8	81.8	9.1	63.6	90.9	86.4	45.5
Mashonaland Central	12	83.3	83.3	83.3	8.3	66.7	83.3	83.3	50.0
Mashonaland East	17	100.0	94.1	94.1	11.8	76.5	100.0	100.0	64.7
Mashonaland West	14	78.6	78.6	78.6	0.0	71.4	85.7	85.7	42.9
Masvingo	14	78.6	78.6	78.6	14.3	71.4	78.6	71.4	42.9
Matabeleland North	10	90.0	90.0	90.0	10.0	80.0	100.0	90.0	70.0
Matabeleland South	10	100.0	100.0	100.0	0.0	90.0	100.0	100.0	50.0
Midlands	17	88.2	88.2	88.2	11.8	64.7	100.0	94.1	58.8
<b>Total</b>	<b>125</b>	<b>86.4</b>	<b>84.8</b>	<b>85.6</b>	<b>8.0</b>	<b>69.6</b>	<b>92.0</b>	<b>88.8</b>	<b>52.0</b>

### 6.4.1 Stock levels of FP commodities

Male and Female Condoms and oral contraceptives were mostly in stock in the previous 30 days prior to the assessment. On average only 2.6% of Level 1 facilities reported stock outs of male or female condoms and only 3.5% reported stock outs of oral contraceptives. Depo-Provera was reported to be more out of stock by the mainly rural Provinces, indicating that there might be challenges with supply to these areas. Matebeleland South province reported the highest proportion of facilities with 22% reporting stock outs.

**Figure 19: Proportion of Level 1 facilities with stock outs of FP commodities in the previous 30 days, Dec 2011**



### 6.4.2 User fees for family planning services

Approximately a third of Level 1 facilities charged user fees for family planning with 33.3% charging for oral contraceptives and 36.8% for injectables. On average, 37% of the hospitals charged user fees for family planning services. The majority, 72.7% of the hospitals provided family planning services on a daily basis. However, only 38.4% had a youth friendly corner, which is an important component of the FP programme.

#### Summary of key findings

- Over 95% of the Level 1 facilities reported providing oral contraceptives, depo Provera injection, and both male and female condoms.
- The majority, more than 80%, of hospitals provided a variety of short acting family planning methods that included condoms (male and female), oral contraceptives, and progesterone injection.
- Access to long acting methods of FP is more centralized with 70% of hospitals

providing access to implants compared to 9% of Level 1 facilities.

- Access to IUCDs is generally poor with only 8% of hospitals offering insertion and less than 3% of Level 1 facilities providing IUCDs.

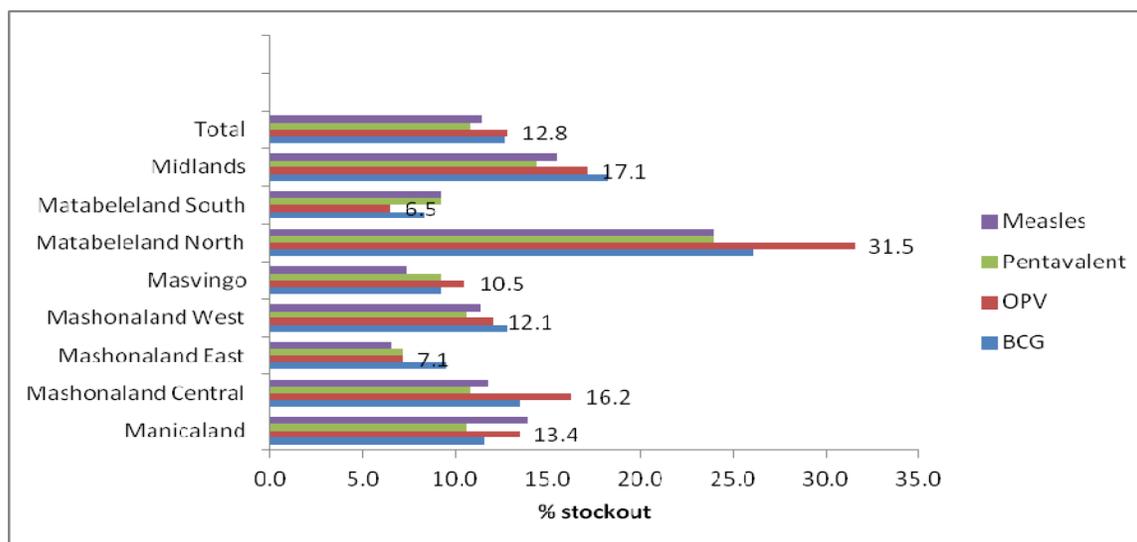
## 6.5 Child Health and Vaccination Services

### 6.5.1 Vaccines

Zimbabwean health facilities are relatively integrated with most offering both preventative and curative services. Immunisation is normally provided routinely at facilities and through outreach services. Ninety per cent of Level 1 facilities provided routine immunisation on a daily basis. However, only 45% had vaccination outreach schedules. Eighty-three percent of hospitals offered immunisations on a daily basis.

Availability of vaccines is critical for ensuring high routine immunisation coverage rates. All basic vaccines for the seven major childhood diseases were available in most health facilities across the country. Generally a small proportion of Level 1 facilities reported stock outs of vaccines. Approximately 12.8% of Level 1 facilities reported stock outs of Oral Polio vaccine (OPV) in previous six months preceding the assessment. Matabeleland North Province reported the highest stock outs across all antigen types. For example 31.5% of the facilities in this Province reported stock outs of OPV in comparison to Bulawayo Province, which did not report any stock outs. In general vaccine stock outs were more likely to be reported by the rural facilities. This implies that there are some constraints in supply chain management of vaccines. Where vaccines are out of stock, routine immunisation is hindered and this creates pockets where diseases such as polio may spread. Figure 20 shows proportion of facilities reporting stock outs of key selected antigens.

**Figure 20: Proportion of Level 1 facilities reporting stock outs of vaccines in the previous 6 months by Province, 2010 (N=1,250)**



Among the hospitals on average there were low stock outs of vaccines reported in the last 6 months days preceding the assessment. However 16% of the hospitals reported stock outs of BCG. None of the hospitals from Harare reported stock outs across all antigens. Unlike the Level 1 facilities in Bulawayo, a few hospitals from Bulawayo reported stock outs for most of the vaccines.

**Table 43: Summary of the proportion of hospitals reporting stock outs of vaccines in the preceding 6 months by Province, July-Dec 2011**

Province	Nos. of Hospitals	BCG (%)	OPV (%)	Pentavalent (%)	Measles (%)
Bulawayo	3	33.3	33.3	33.3	33.3
Harare	6	0.0	0.0	0.0	0.0
Manicaland	22	22.7	22.7	22.7	18.2
Mashonaland Central	12	8.3	8.3	8.3	8.3
Mashonaland East	17	5.9	0.0	5.9	0.0
Mashonaland West	14	21.4	7.1	0.0	7.1
Masvingo	14	21.4	21.4	14.3	7.1
Matabeleland North	10	0.0	0.0	10.0	0.0
Matabeleland South	10	10.0	0.0	0.0	0.0
Midlands	17	29.4	23.5	11.8	23.5
<i>National Average</i>	<i>125</i>	<i>16.0</i>	<i>12.0</i>	<i>10.4</i>	<i>9.6</i>

### 6.5.2 Storage facilities for Vaccines at a Hospital level

To promote vaccine efficacy and potency, it is critical that health facilities have the right storage facilities and that the cold chain system is maintained. In this national health facility assessment, Level 1 and hospital facilities were asked to indicate the various systems for storing vaccines. All health facilities that indicated that they offer child immunisations were asked to indicate the vaccines stored and the status and capacity of their storage facilities.

**Table 44: Number of functional vaccine storage equipment among Level 1 facilities by Province, Dec 2011**

Province	Total Level 1 facilities	Nos. of Functioning Electric Fridge	Nos. of Functioning Paraffin Fridge	Nos. of Functioning Gas Fridge	Nos. of Functioning Solar Fridge	Nos. of Cold Box
Bulawayo	19	22	2	2	2	11
Harare	52	69	2	2	2	35
Manicaland	216	148	2	168	2	39
Mashonaland Central	111	96	8	76	13	49
Mashonaland East	168	82	1	125	6	81
Mashonaland West	141	436	0	108	2	38
Masvingo	162	65	1	126	6	108
Matabeleland North	92	66	0	69	0	39

Matabeleland South	108	63	2	67	5	8
Midlands	181	112	4	139	19	58
<b>Total</b>	<b>1,250</b>	<b>1,159</b>	<b>22</b>	<b>882</b>	<b>57</b>	<b>466</b>

Among Level 1 facilities, electrical refrigerators were the most commonly used, followed by gas refrigerators that were found mostly in rural provinces. There were a total of 466 cold boxes, which crudely translates to approximately 0.3 boxes per facility. Of note is that among Level 1 facilities, 30.6% reported that they did not have a cold box. Very few facilities had a solar fridge, for example in Matabeleland province no facility had a solar fridge.

**Table 45: Number of functional vaccine storage equipment in hospitals by Province, Dec 2011**

Province	Number of Hospitals	Number with cold chain		Number of available systems in working condition				
		Nos. having a cold chain temp monitoring chart	% With cold chain	Nos. with functioning Electric refrigerator	Nos. with functioning Paraffin refrigerator	Nos. with functioning Gas refrigerator	Nos. with functioning Solar refrigerator	Nos. with Cold Box
Bulawayo	3	2	66.7	2	0	0	0	0
Harare	6	4	66.7	4	0	0	0	1
Manicaland	22	19	86.4	35	2	7	0	11
Mashonaland Central	12	12	100	27	2	4	2	3
Mashonaland East	17	16	94.1	33	0	6	0	38
Mashonaland West	14	13	92.9	28	0	4	0	7
Masvingo	14	14	100	20	0	3	0	6
Matabeleland North	10	10	100	26	0	6	0	15
Matabeleland South	10	10	100	27	0	3	0	26
Midlands	17	16	94.1	36	1	7	0	25
<b>Total</b>	<b>125</b>	<b>116</b>	<b>92.8</b>	<b>238</b>	<b>5</b>	<b>40</b>	<b>2</b>	<b>132</b>

Out of the 125 hospitals that participated in the survey, 92.8% had a cold chain temperature monitoring chart. Most hospitals had electric refrigerators and 238 were reported to be in working condition. There were less gas refrigerators with only 40 functioning. There were approximately 132 cold chain boxes. Five paraffin refrigerators and only 2 solar refrigerators were available among the hospitals. Among the ten Provinces, only Mashonaland Central used solar refrigerators for vaccines.

### **6.5.3 Provision of Child Health Services**

Almost all Level 1 facilities (98%) provided services to children under the age of five. Child health services were offered on an average of six days per week in nearly all the facilities.

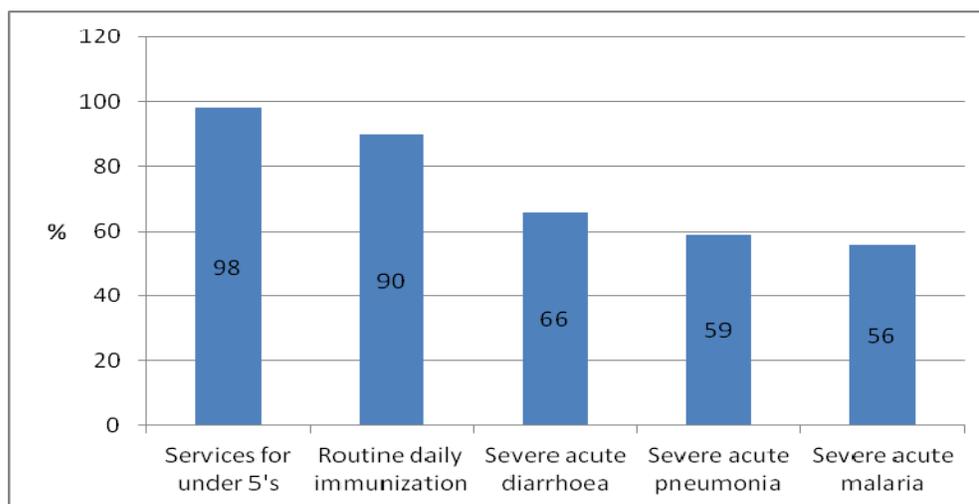
The urban centres of Harare and Bulawayo provided services on average for five and a half days per week, compared to the other Provinces, which offer services on six days of the week.

Integrated Management of Neonatal and Childhood Illnesses (IMNCI) is one of key MoHCW strategies for child survival. The aim of the IMCI strategy is to reduce morbidity and mortality among children under age 5 years, through implementation of essential child survival interventions both at health facility and community levels. Three strategies are evident in the IMCI approach. These include:

- 1) Improving skills of health works in case management
- 2) Improving the health system support that is critical for effective management of childhood illness e. g. through adequate equipment and supplies, efficient organisation of work, and strong referral systems
- 3) Improving health systems, includes improving childcare at the community and household levels in line with key family practices

Figure 21 is a reflection of facilities offering both preventative and curative services at Level 1 facilities. Level 1 facilities that reported providing services for the more severely ill children were more likely to be in the rural Provinces. For example, whilst almost two thirds (66%) managed severe acute diarrhoea, 70% of facilities in Mashonaland East Province reported providing care for children with severe acute diarrhoea compared to only 4% in Harare City. This may be an indicator that urban facilities have greater access to referral facilities for such children. Curative care services for severe acute malaria was available in 56% of Level 1 facilities, while 59% reported treating severe acute pneumonia. Only 23 per cent of facilities reported managing acute malnutrition with a range of 8% to 33%. A high proportion (55%) of facilities reported stock outs of RUTF for managing malnourished children.

**Figure 21: Availability of child health services at Level 1 facilities Dec 2011 (N=1,250)**



More than 90% of hospitals reported managing severe acute pneumonia, diarrhoea and malaria for children under 5 years of age, perhaps a figure lower than expected but Ingutsheni hospital Bulawayo Province has been included which is a psychiatric institution. Among the hospitals, 76% reported that they had an ORS corner but a smaller proportion (66%) prescribed both ORS and Zinc for diarrhoea. The majority of hospitals 88% managed severe acute malnutrition with provision of RUTF for malnourished children at 56% of hospital facilities. Sixty eight per cent of hospitals reported adequate stocks of RUTF.

Among the hospitals, 34.4% reported that they had a functional adolescent friendly corner. Among the mainly rural provinces Matebeleland North province reported the highest proportion with 6 out of the 10 hospitals reporting such facilities. Fewer hospitals from Manicaland reported such facilities, with only 2 out of 22 having this service available.

#### **6.5.5 User fees for child health services**

Among Level 1 facilities, 15% reported charging user fees for child health curative services while 1.6% reported charging for preventive services. Among hospitals, 24% reported charging consultation fees for sick children. There were variations in the proportions of hospitals charging user fees across the provinces, with 43% of hospitals in Mashonaland West charging compared to Masvingo where 7% were charging consultation fees for sick children.

#### **Summary of key findings**

- Ninety per cent of Level 1 facilities provided routine immunisation on a daily basis in comparison to 83% of hospitals.
- A small proportion of Level 1 facilities reported stock outs of vaccines with approximately 13% reporting stock outs of Oral Polio vaccine (OPV) in the previous six months preceding the assessment.
- Among hospitals on average, there were low stock outs of vaccines reported in the last 6 months preceding the assessment.
- Level 1 facilities in rural provinces were more likely to manage severely ill children compared to urban areas.
- Most hospitals (more than 90%) reported managing severe acute pneumonia, diarrhoea and malaria for children under 5 years of age.
- Capacity to manage acute malnutrition was only reported by 23% of Level 1 facilities and 88% of hospitals.
- User fees for curative child health services were being charged on average at 15% of Level 1 facilities and 24% of hospitals.

## 6.6 STIs, HIV and AIDS services

Zimbabwe is among one of the countries with a declining HIV prevalence with rates decreasing from 20.1% in 2005 to 15% in 2010 (ZDHS 2005-6, & 2010-2011). According to the Zimbabwe National HIV and AIDS strategic Plan 2011-2015, the country aims to reduce annual HIV incidence by 50% by 2015. Although HIV prevalence has been demonstrated to be on the decline, both adult and paediatric HIV/AIDS contributes significantly to the burden of disease in the population.

Health Information data indicates that STIs remain a priority problem especially among young adults. This survey assessed availability of STI diagnostic and treatment services as well as HIV counselling and Testing, PMTCT and Anti-retroviral Therapy. Almost all 98% of Level 1 facilities were reported to offer STI diagnosis and treatment services with half of them routinely charging a fee for these services. At Level 1 facilities, a median of US\$2 was charged for STI consultations.

Among hospitals, approximately 27,000 patients were treated for STIs. District, mission and private hospitals attended to an average of almost 8,000 patients each. Almost 80% charged user fees for treatment of STIs. At hospital level, a median of US\$4 was charged for STI consultation. At central hospital level a median of US\$10 was charged.

Table 646 shows that most facilities offer HIV diagnostic services. Among the Level 1 facilities, 96% offered Provider Initiated Counselling and Testing (PITC). This figure is significantly higher than that reported by the MoHCW in 2010 which reported that 64% of facilities were providing HIV Testing and Counselling (ZNASP 11 2010-2015).

Approximately 89% of Level 1 facilities, routinely screened TB patients for HIV. TB/HIV collaborative activities may be easier to implement at this level as both HIV and TB services are provided by the same health worker in that facility. Seventy-nine percent of Level 1 facilities offered Early Infant Diagnosis using Dried Blood Spots for PCR. This figure is higher than that reported by the PMTCT programme for all health facilities in Zimbabwe. This development may be an indicator of the rapid roll out of EID starting in 2007 or differences in the reported data.

**Table 46: Proportion of Level 1 facilities offering HIV diagnostic services, by Province, Dec 2011 (N=1250)**

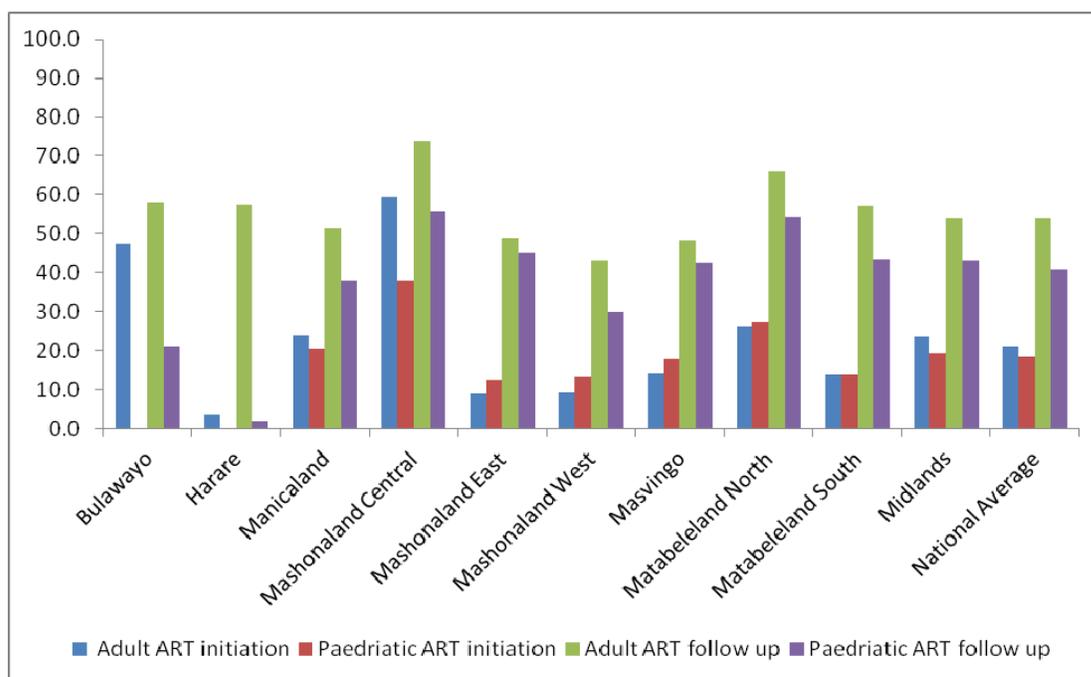
Province	Level 1 Facilities	PITC (%)	VCT (%)	Screen HIV patients for TB (%)
Bulawayo	19	100.0	100.0	94.7
Harare	52	84.6	76.9	75.0
Manicaland	216	94.4	97.7	86.6
Mashonaland Central	111	100.0	99.1	93.7
Mashonaland East	168	100.0	100.0	94.0
Mashonaland West	141	98.6	95.7	86.5
Masvingo	162	95.7	96.3	87.0

Matabeleland North	92	93.5	95.7	92.4
Matabeleland South	108	99.1	98.1	88.9
Midlands	181	95.0	96.1	87.8
<b>National Average</b>	<b>1,250</b>	<b>96.4</b>	<b>96.6</b>	<b>88.7</b>

Sustained provision of comprehensive and quality antiretroviral therapy (ART) reduces adult and child mortality as well as improving the quality of life of people living with HIV (PLWHIV). A total of 260,533 PLWHIV (adults and children) were reported to be currently enrolled in Level 1 clinics and 339,381 were enrolled at hospitals. Figure 22 shows that a significant proportion of Level 1 facilities provided adult and paediatric follow-up services, reflecting the de-centralization of follow-up services at the time of the assessment.

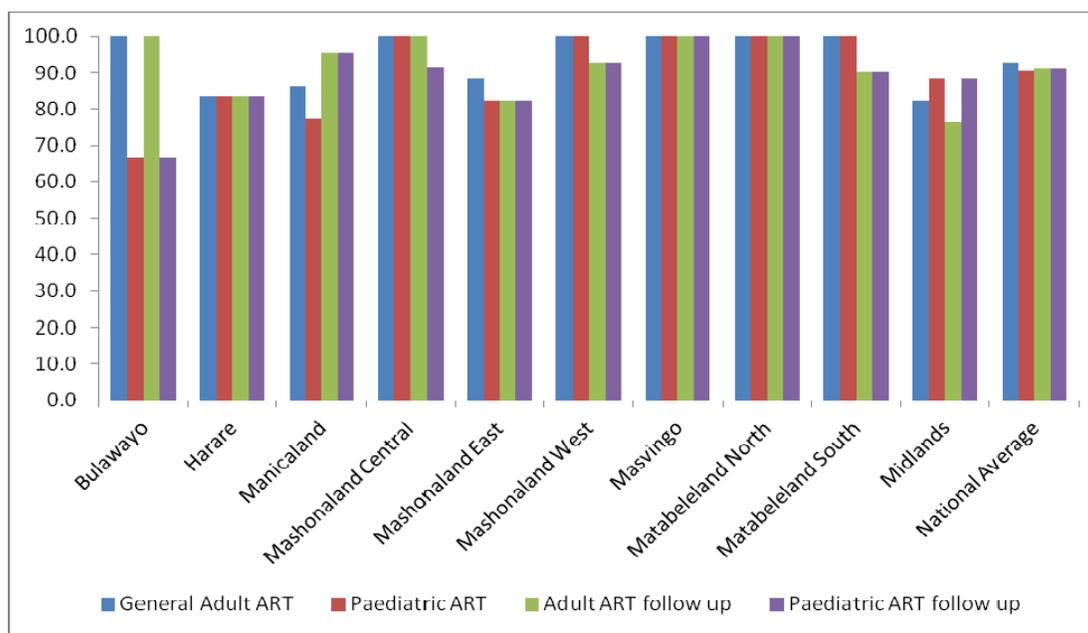
Mashonaland Central Province reported the highest number of Level 1 facilities initiating both adult and paediatric ART. No clinics from the 2 major cities of Harare and Bulawayo were initiating paediatric ART at the time of the study. This could be one of the contributing factors to the congestion seen at paediatric ART sites at the two central hospitals in Harare. While Level 1 facilities in Bulawayo city were following up paediatric ART patients, only one of the 52 clinics in Harare were providing follow-up care. Rural Provinces were noted to be more likely to provide paediatric ART initiation at almost similar rates to adult ART initiation.

**Figure 22: Provision of adult and paediatric ART services by Level 1 facilities by Province (N=1,250), Dec 2011**



In this assessment, most hospitals (more than 90%) reported providing both adult and paediatric ART initiation and follow up services. Figure 23 illustrates provision of paediatric and adult ART initiation and follow up by province.

**Figure 23: Provision of adult and paediatric ART services at hospitals by Province, Dec 2011 (N=125)**



Treatment of Opportunistic Infections (OIs) is important in the prevention of morbidity and mortality among PLWHIV. Almost all (97%) Level 1 facilities provided Cotrimoxazole prophylaxis to HIV positive patients and this was available an average six days per week. A third of facilities (33%) reported stock outs of paediatric Cotrimoxazole suspension. These stock outs lasted an average of 125 days. As a result of the stock outs, HIV infected children are more prone to opportunistic infection, leading to poorer health outcomes. Fluconazole is required for the treatment and prevention of fungal opportunistic infections such as Cryptococcal meningitis and oral candidiasis. Among Level 1 facilities, 52% reported stock outs of Fluconazole. Patients requiring fluconazole prophylaxis may need to travel to either district, provincial or central hospitals to obtain these medicines.

A small proportion of facilities, 13% provide complementary feeding to HIV positive patients. This is an area, which needs attention especially in food insecure parts of the country. PLWHIV may be at higher risk of suffering the consequences of malnutrition.

#### Summary of key findings

- Almost all (98%) of Level 1 facilities offer STI diagnosis and treatment services with half of them routinely charging a fee for these services.
- 96% offer Provider Initiated Counselling and Testing (PITC) among Level 1 facilities.

- Seventy-nine percent of facilities offer Early Infant Diagnosis using Dried Blood Spots for PCR.
- 89% of Level 1 facilities routinely screen TB patients for HIV.
- Almost all, (more than 90%) of hospitals reported providing both adult and paediatric ART initiation and follow up services.
- No Level 1 facilities in Harare or Bulawayo initiated children on ART and significantly fewer Level 1 facilities in Harare and Bulawayo offered paediatric ART follow-up services.

## 6.7 Tuberculosis

Among Level 1 facilities, 53,653 suspected TB cases were registered in 2010 with 1,463 defaulters reported. This compares to 69,831 TB suspects reported at hospitals and 1,984 defaulters. As shown in Table 47 below, from hospitals records, 47,822 cases of confirmed TB were reported in 2010 with 27,543 completed treatment courses recorded. Eighty eight per cent of hospitals reported having a mechanism in place for tracing treatment defaulters. Of the 1,984 defaulters reported by hospitals, a total of 587 treatment defaulters were traced in 2010. Midlands reported the highest number of treatment defaulters traced at 163, followed by Matebeleland North, 110. Of note were the relatively small number of treatment defaulters traced from Harare and Bulawayo. For example, Bulawayo did not report any defaulters traced in 2010 while Harare province reported 46 defaulters. The assessment was unable to verify whether this is a reporting issue or reflects the reality of the defaulter systems in place.

**Table 47: TB burden and outcomes by type of hospital, Jan-Dec 2010**

Type of Hospital	Number of Hospitals	Suspected TB cases	Confirmed TB cases	Completed treatment	Defaulted
Central hospital	6	6,091	2,588	1,834	61
Provincial hospital	8	8,359	15,803	3,642	589
District Hospital	50	34,716	12,028	9,797	622
Mission hospital	46	16,095	7,665	5,189	254
Private	15	4,570	9,738	7,081	458
<b>Total</b>	<b>125</b>	<b>69,831</b>	<b>47,822</b>	<b>27,543</b>	<b>1,984</b>

Completion of the full course of anti-TB treatment is pivotal to TB control and for prevention of drug resistant TB. The majority of hospitals, 86.4% reported offering Directly Observed Treatment (DOT). However this should be treated with caution as this is self-reported data.

Sputum microscopy remains the gold standard for TB diagnosis. Amongst the reporting Level 1 facilities 82.7% collected sputum and send this for microscopy at a higher level of care, where appropriate laboratory facilities are available. Patients were responsible for

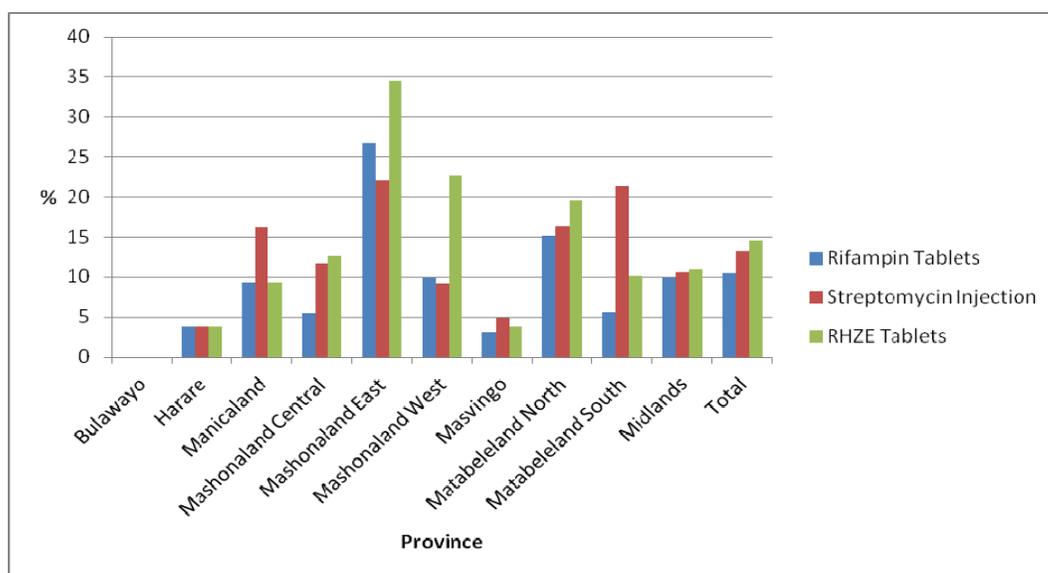
transportation of sputum at 30.7% of the clinics. This may compromise the quality of sputum finally reaching the laboratory, leading to poor yield on microscopy or specimens may even fail to reach the laboratory in such circumstances.

Among the hospitals, 96.8% reported collecting sputum for microscopy, with results obtained on average within 3 days. Among the 125 hospitals, a total of 383 microscopes were reported to be available at the time of the assessment. This translates to an average of 3 microscopes per hospital. Hospitals from Harare had an average of 5 microscopes per hospital while Mashonaland West province had an average of 2 microscopes per hospital.

Among the 6 central hospitals, there were 8 fixed X-ray machines. For provincial and district hospitals there was an average of 1 fixed X-ray machine per hospital. Out of the 46 mission hospitals, only 36 (78%) reported having a fixed X-ray machine. A total of 139 X-ray viewers were reported across the 125 hospitals. This translates to an average of 1 X-ray viewer per hospital, although central hospitals had an average of 3 X-ray viewers per hospital.

Figure 24 illustrates the proportion of Level 1 facilities reporting stock outs of anti-TB drugs in the previous 30 days prior to the assessment. At Level 1 facilities, 14.5% reported stock outs of Anti-TB fixed drug combinations, compared to 10% among the hospitals. This was noted particularly in Mashonaland East Province, where 34.5% reported stock outs of these fixed drug combinations. Among the hospitals, two of the three hospitals in Bulawayo reported stock outs of fixed dose TB drug combinations. This has negative consequences due to potential disruptions in treatment adherence.

**Figure 24: Proportion of Level 1 facilities reporting stock outs of specific anti-TB drugs in the previous 30 days by Province, Dec 2011 (N=1,250)**



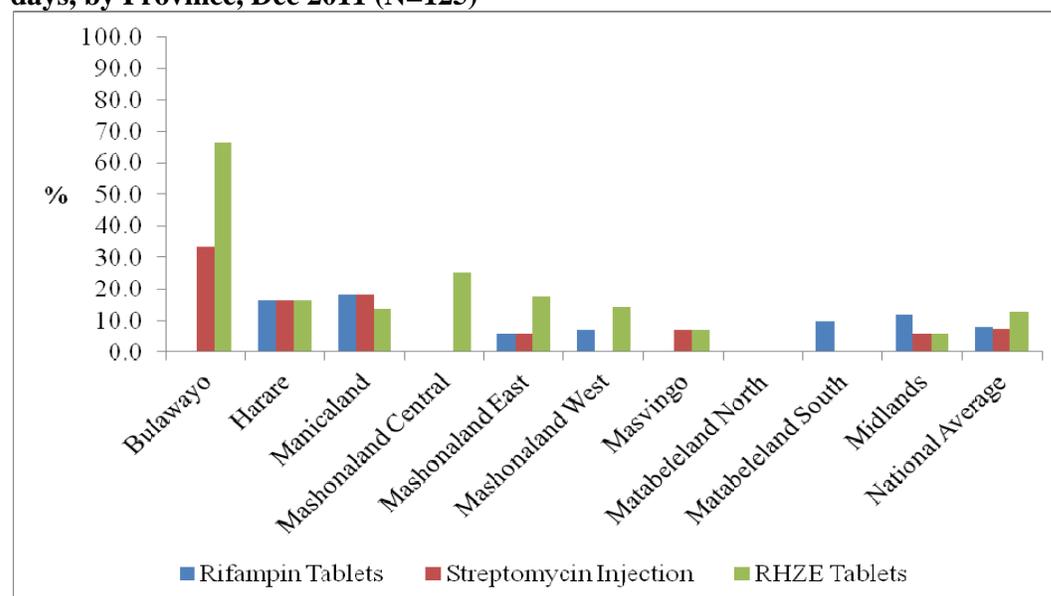
**Figure 25: Proportion of hospitals reporting stock outs of TB drugs in the previous 30 days, by Province, Dec 2011 (N=125)**

Figure 25 above and Table 48 below illustrate the situation with respect to stock outs of TB drugs at a hospital level. In general, central hospitals reported greater stock outs of fixed drug combinations (33.3%) compared to district hospitals, (10%). Hospitals from Bulawayo reported more stock outs for fixed drug combinations as well as Streptomycin injections. A quarter of the hospitals in Mashonaland Central reported stock outs of fixed dose combinations in the previous 30 days. Private hospitals also reported relatively higher stock out rates of both streptomycin and fixed dose combinations at 20%.

**Table 48: Stock outs of TB drugs in the previous 30 days stratified by type of hospital, Dec 2011**

Hospital Type	Nos. Hospitals by Type	% of facilities reporting stock outs				
		Rifampin	Streptomycin	RHZE	RH	Ethambutol
Central hospital	6	0.0	16.7	33.3	0.0	16.7
Provincial hospital	8	0.0	0.0	12.5	0.0	12.5
District Hospital	50	8.0	4.0	10.0	8.0	8.0
Mission hospital	46	8.7	6.5	10.9	6.5	17.4
Private	15	13.3	20.0	20.0	13.3	20.0
<b>Total</b>	<b>125</b>	<b>8.0</b>	<b>7.2</b>	<b>12.8</b>	<b>7.2</b>	<b>13.6</b>

### Summary of Key Findings

- A total of 123,484 suspected cases of TB were seen at both Level 1 and hospital

facilities in 2010.

- At both Level 1 and hospital facilities, 3,447 TB defaulters were recorded.
- The majority of hospitals 86.4% reported offering Directly Observed Treatment (DOT).
- 14.5% of Level 1 facilities reported stock outs of Anti-TB fixed drug combinations compared to 10% of all hospitals. Central hospitals reported higher rates of stock outs of fixed drug combinations.
- 82.7% of Level 1 facilities collected sputum and sent samples for microscopy to a higher level of care although patients were responsible in 31% of cases to organize transfer of samples.
- 96.8% of hospitals reported collecting and receiving results from sputum analysis within 3 days.

## 6.8 Malaria

The incidence of malaria in Zimbabwe is on the decline. One of the strategies used in malaria control is the distribution and use of Insecticide Treated Bed nets (ITNs). In this assessment, 40.1% of Level 1 facilities in Malaria prone provinces reported the distribution of ITNs to children under the age of 5. Thirty two Level 1 facilities reported issuing ITNs to Village Health Workers for distribution in the community. Almost all Level 1 facilities did not charge for the ITNs.

**Table 49: Number of malaria cases diagnosed using Rapid Diagnostic Testing at Level 1 and Hospital facilities by Province, Jan-Dec 2010**

Province	Nos. of cases confirmed through RDTs at Hospital Level n=125	Nos. of cases confirmed through RDTs at Level 1 facilities n=1250	Total nos. of confirmed malaria cases
Bulawayo	31	397	428
Harare	391	2,745	3,136
Manicaland	16,032	96,962	112,994
Mashonaland Central	6,063	56,662	62,725
Mashonaland East	2,975	72,378	75,353
Mashonaland West	4,700	24,990	29,690
Masvingo	2,679	24,832	27,511
Matabeleland North	10,974	34,165	45,139
Matabeleland South	175	2,423	2,598
Midlands	2,383	5,556	7,939
<b>Total</b>	<b>46,403</b>	<b>321,110</b>	<b>367,513</b>

Table 49 above shows the total number of malaria cases diagnosed using Rapid Diagnostic Tests (RDTs) by province. A total of 367,513 cases were confirmed through the use of RDTs in 2010 from the facilities assessed. Manicaland had the highest number of malaria cases confirmed with 112,994 cases while Bulawayo province reported the least number 428.

Although 45 districts are listed as malaria prone some unlisted districts such as Goromonzi in Mashonaland East province reported a significant number of malaria cases for example. See Table 50 below.

**Table 50: Number of malaria cases seen at Level 1 facilities by District from Mashonaland East Province, Jan-Dec 2010 (N=168)**

District	Health Clinics	Nos. of suspected malaria cases seen	Nos. confirmed through RDTs	Nos. treated with ACT
Chikomba	26	1,196	301	456
Goromonzi	20	4,822	1,905	1,801
Hwedza	11	1,504	307	287
Marondera	15	620	539	198
Mudzi	20	42,629	27,603	27,790
Murehwa	23	11,924	3,676	3,662
Mutoko	20	31,373	19,994	22,014
Seke	14	1,829	491	455
UMP	19	23,346	17,562	13,324
<b>Total</b>	<b>168</b>	<b>119,243</b>	<b>72,378</b>	<b>69,987</b>

Use of Rapid Diagnostic tests in the diagnosis of malaria is almost universal with 95.2% in both Level 1 and hospitals, indicating adherence to the current malaria case management guidelines. This finding is similar to that made in the audit of malaria case management carried out in 2010 where it was noted that there was high adherence to the malaria case management guidelines (Malaria Case Management Audit 2010 MoHCW). This is a positive finding that may be contributing to a reduction in malaria in morbidity and mortality in Zimbabwe. However, 10.1% of Level 1 facilities reported stock outs of RDTs in the previous 30 days prior to the assessment, with Manicaland province reporting the highest stock out rates in 19.9% of facilities. This picture is also seen among hospitals where overall 10.4% reported stock outs of RDTs in the previous 30 days with 27.3% of those being reported by Manicaland province.

Availability of anti-malaria medicines is critical for case management. Table 51 shows the proportion of Level 1 and hospital facilities reporting stock outs of Artemether/Lumefantrine (ACT) tablets, Quinine, RDT kits and Sulphadoxine/Pyrimethamine tablets. Stock outs of quinine were the most reported category with 30.9% of the Level one facilities reporting stock outs during the period under review. It is noteworthy Manicaland Province which has the highest burden of malaria, also reported the highest levels of stock outs of oral quinine. For example 52.3% of the Level 1 facilities from Manicaland, reported stock outs of oral quinine, which is likely to result in challenges in managing complicated malaria.

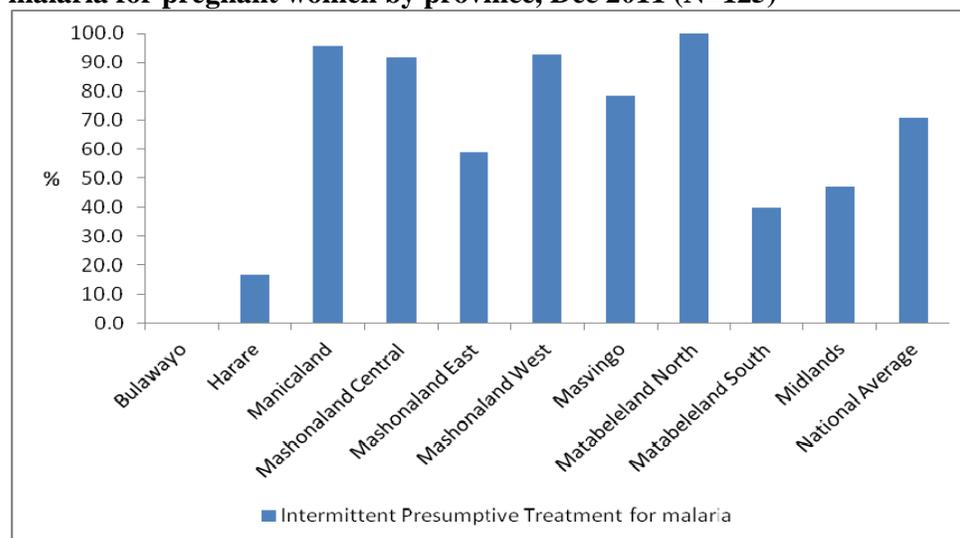
**Table 51: Proportion of Level 1 facilities and hospitals reporting stock outs of anti-malaria medicines in the previous 30 days by Province, December 2011**

Province	% of facilities reporting stock outs of Quinine Tablets		% of facilities reporting stock outs of Sulphadoxine Tablets		% of facilities reporting stock outs of Artemether Tablets	
	Hospital N=125	Level 1 N=1250	Hospital N=125	Level 1 N=1250	Hospital N=125	Level 1 N=1250
Bulawayo	0.0	31.6	33.3	5.3	0.0	5.3
Harare	16.7	23.1	16.7	28.8	16.7	7.7
Manicaland	27.3	52.3	13.6	19.9	18.2	9.3
Mashonaland Central	0.0	19.8	16.7	23.4	0.0	4.5
Mashonaland East	17.6	47.0	23.5	44.0	17.6	6.0
Mashonaland West	0.0	20.6	0.0	16.3	0.0	11.3
Masvingo	0.0	14.2	0.0	16.7	0.0	2.5
Matabeleland North	0.0	6.5	0.0	10.9	0.0	10.9
Matabeleland South	0.0	14.8	20.0	13.9	0.0	3.7
Midlands	11.8	44.2	23.5	42.0	23.5	11.6
<b>National Average</b>	<b>9.6</b>	<b>30.9</b>	<b>13.6</b>	<b>24.8</b>	<b>9.6</b>	<b>7.6</b>

Among the 6 (27%) out of 22 hospitals in Manicaland, quinine tablets were also reported to be out of stock. Stock outs of ACTs were reported by only 7.6% of Level 1 facilities countrywide and 9.6% of hospitals. More details on malaria stock outs will be available from the Malaria Indicator survey, due out shortly in 2012.

Intermittent preventive Treatment (IPT) of Malaria with Sulphadoxine/Pyrimethamine (SP) is recommended for pregnant women in malaria endemic areas. Figure 26 summarises the proportion of hospitals providing IPT during antenatal care by province. Among the hospitals, 71.2% provided Intermittent Presumptive Treatment for Malaria. This was observed in the provinces with malaria endemic districts. For example whereas all the hospitals from Matabeleland North province provided (IPT) to pregnant women, none of the hospitals from Bulawayo provided IPT as this area is non-malarious.

**Figure 26: Proportion of hospitals providing Intermittent Presumptive Treatment for malaria for pregnant women by province, Dec 2011 (N=125)**



Among the Level 1 facilities in Mashonaland East and Midlands Province more than 40% reported stock outs of SP. This may explain the low coverage of IPT in these Provinces as reported in the Zimbabwe Demographic and Health Survey of 2010-2011.

#### Summary of Key Findings

- Manicaland had the highest number of malaria cases confirmed reporting 112,994 in 2010 compared to Bulawayo, which is a non-malaria endemic province, which reported the least number at 428.
- Use of Rapid Diagnostic tests in the diagnosis of malaria is almost universal with 95.2% in both Level 1 and hospitals indicating adherence to the current malaria case management guidelines.
- Stock outs of quinine were the most reported category with 30.9% of the Level 1 facilities reporting stock outs of the drug in the previous 30 days.
- Manicaland Province, which has the highest burden of malaria but also, reported the highest levels of stock outs of oral quinine among 52% of Level 1 facilities.

## 6.9 Non-communicable Diseases

It is projected that by the year 2020, non-communicable diseases (NCD) will make up approximately 80% of the global disease burden, with seven out of ten deaths attributed to these diseases. This trend is expected to affect developing countries including Zimbabwe. Figure 27 summarises the national picture of the prevalent non-communicable diseases reported by both Level 1 facilities and hospitals.

A significant number of Zimbabweans, 597,661 presented with non-communicable conditions in 2010. This assessment also showed that a total of 243,522 injuries were treated in either a Level 1 or hospital setting.

**Figure 27: Total number of patients with non-communicable diseases, injuries and cancer in all facilities, Jan – Dec 2010**

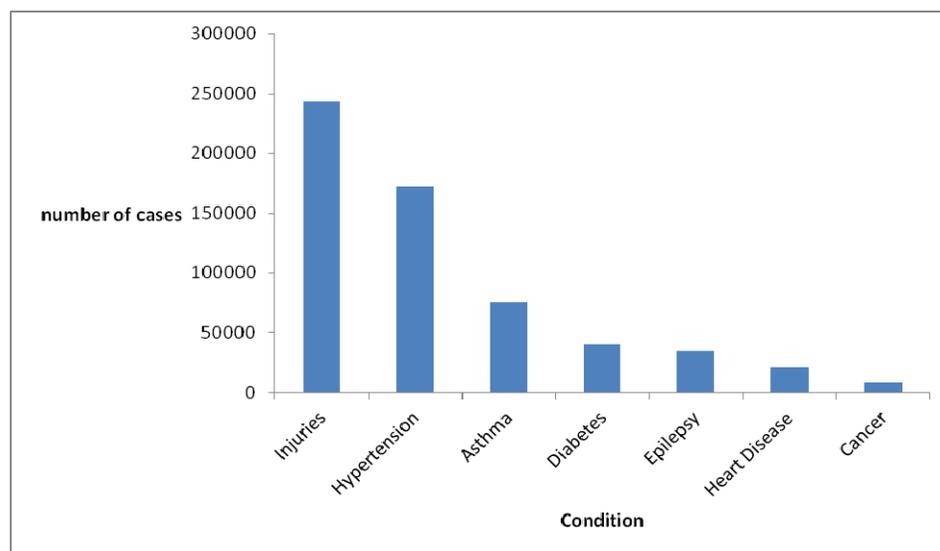


Figure 27 above and Table 52 below shows the total number of patients registered by type of NCD. After injuries, hypertension ranked as the highest contributor to NCDs followed by asthma and diabetes. Of note is the small number of cancer cases reported at Level 1 facilities. This could be an indicator of low capacity of health care workers to access diagnostics to make a provisional diagnosis of cancer. For example, among Level 1 health facilities from Harare City only one cancer patient was recorded in this assessment. This may also indicate that cancer screening programmes are not accessible to the majority of the populations at risk.

Health workers need appropriate equipment to screen and make a diagnosis of NCDs such as hypertension, diabetes and associated risk factors. This study assessed the availability of this equipment and accessories at facility level. All Level 1 facilities reported having at least a 1 blood pressure machine. Among the 1,250 facilities however an additional 250 blood pressure machines were reported to be required (note the required additional machines are based on self-reported needs). Most facilities reported adequate numbers of both adult and child stethoscopes. This means that most of these facilities should have the capacity to measure blood pressure.

In contrast, there were only 288 glucometers among the 1,250 facilities reporting, a crude estimate of one glucometer for every four facilities. Lack of equipment for basic screening for conditions such as diabetes means that many cases will not be detected and may present later with serious complications such as blindness, heart failure, renal failure or stroke. This significantly increases the costs to the fiscus as these cases usually require more expensive tertiary and rehabilitative care at a later stage of presentation.

**Table 52: Number of patients registered for management of selected NCDs, injuries and cancers by Province, Jan-Dec 2010**

Province	Condition															
	Diabetes		Hypertension		Cancer		Epilepsy		Renal Disease		Heart Disease		Injuries		Asthma	
	N= 1250	N= 125	N= 1250	N= 125	N= 1250	N= 125	N= 1250	N= 125	N= 1250	N= 125	N= 1250	N= 125	N= 1250	N=12 5	N= 1250	N= 125
Bulawayo	716	414	5637	1039	6	1139	536	3189	0	116	205	165	9874	938	747	146
Harare	1224	7940	8832	6121	1	2068	679	436	14	379	465	918	16179	6112	914	2939
Manicaland	1038	4580	15346	14070	56	1382	2365	1973	38	97	567	1950	27034	13451	6443	3729
Mashonaland Central	603	1479	10770	11504	78	439	1546	2284	61	111	91	1126	22076	6717	5520	4388
Mashonaland East	1076	4159	12710	15551	19	768	1855	3246	27	224	492	4626	19177	9538	5763	6357
Mashonaland West	426	1866	8758	4098	9	1100	1595	974	34	156	219	745	16138	7497	4885	1484
Masvingo	2248	3629	10425	9968	42	498	2441	1677	71	44	617	2399	21988	7907	7094	4709
Matabeleland North	362	920	4801	4624	9	82	1365	1401	4	19	306	797	10075	7004	3628	2239
Matabeleland South	454	1446	5101	4972	5	278	804	1267	3	1002	203	3423	11318	3125	2748	3932
Midlands	1296	4148	9161	8529	60	286	1869	2934	77	96	507	1782	15987	11387	4371	3125
<b>Total</b>	<b>9443</b>	<b>30581</b>	<b>91541</b>	<b>80476</b>	<b>285</b>	<b>8040</b>	<b>15055</b>	<b>19381</b>	<b>329</b>	<b>2244</b>	<b>3672</b>	<b>17931</b>	<b>169846</b>	<b>73676</b>	<b>42113</b>	<b>33048</b>

The table above illustrates distribution of NCDs stratified by Province. Harare Provinces had the highest numbers of cases of diabetes, 9,164 and cancer. For hypertension Manicaland registered the highest number of 29,416 hypertensive cases and injuries 40,485.

### **6.9.1 Disability and mental health**

Among Level 1 facilities, 2,443 people with disabilities were registered, with 20% of the facilities reporting provision of some form of rehabilitation services. For hospitals a higher number of 27,335 persons with disabilities were registered. Seventy-six percent of facilities reported identifying and screening at risk children. A small proportion (38%) of Level 1 facilities participated in the community based rehabilitation programme compared to hospitals where on average 63% of hospitals were reported to be involved. There was some variation in hospital participation with the community programme, as 2 of the 6 hospitals from Harare participated compared to 6 out of the 17 hospitals from Midlands involved with such a programme.

It is estimated that the prevalence of common mental conditions among patients attending primary health care facilities in Zimbabwe is 27% (Patel et al, 1995). Among Level 1 facilities, there were a total of 8,996 patients with mental disability that were registered in 2010. A high proportion of Level 1 facilities, 84% and 90% of hospitals reported that offering mental health services. However, only 5% of Level 1 facilities had a cadre with some mental health training. Amongst the hospitals, 57% reported employing a qualified nurse trained in mental health. There is a need to train more staff on mental health and this is demonstrated by the fact that 67% of the health facilities reported that they require staff trained on mental health.

#### **Summary of key findings**

- Injuries accounted for most of the non-communicable conditions.
- A significant number of Zimbabweans presented with non-communicable conditions 597, 661 with hypertension, followed by asthma and then diabetes contributing to the highest burden of diseases.
- Whilst most facilities reported having sufficient equipment to measure blood pressure, only 288 glucometres were available at the 1,250 Level 1 facilities.
- A total of 29,778 disabled persons were registered at all types of facilities.
- 67% of the health facilities reported that they require staff trained on mental health.

## **7.0 Supporting Service Delivery**

### **7.1 Pharmacy services**

It is critical for facilities to ensure that essential drugs for managing both adult and childhood health conditions are in stock at all times. To ensure medicine availability at all levels of care throughout the country, Zimbabwe National Medicines Policy (ZNMP) guides procurement

of both medicines and raw materials and ensures that medicines are of consistently good quality, and procured at the lowest possible price. Only medicines, which have been registered or otherwise approved by the Medicines Control Authority of Zimbabwe (MCAZ), are eligible for procurement for the public or Private sectors. Currently an approved autonomous non-profit procurement agency, NatPharm, undertakes public sector procurement. Medicines that are procured are exclusively under their generic names. To promote rational prescribing, dispensing and use of medicines both in the public and private sectors and in order to maximise the therapeutic benefit to the patient and reduce the loss, wastage and hazards arising from irrational practices, the Essential Drugs List of Zimbabwe (EDLIZ) guides prescribing practices. Currently there are a number of national commodity distribution and logistics systems being used in country with a mixture of ‘push’ and ‘pull’ systems to ensure that there are no stock outs or over stocking at service delivery level.

#### ***7.1.1 Pharmacy Staffing***

Pharmacists, pharmacy technicians and pharmacy assistants are found at hospital level and not Level 1 facilities. The assessment found that most pharmacists were stationed at central hospital level, with only 11 pharmacists manning the 50 districts hospitals. There was only 1 mission hospital with a pharmacist. However, most hospitals had a full complement of pharmacy technicians.

#### ***7.1.2. Drug Stock Management and procurement of medicines***

In this health facility assessment, both Level 1 facilities and hospitals were asked to indicate how they procured, secured and managed all the medicines they procured. Almost all 99.6% of Level 1 facilities had a copy of EDLIZ. The majority of Level 1 facility (80.4%) obtained their supplies from NatPharm. An estimated 17.5% of medicines were purchased by the health facility. Among the hospitals, 64.8% reported that procurement was done by the government. Over 90% of Level 1 facilities reported using stock cards. However, 44% of Level 1 facilities reported having some expired drugs in stock. Manicaland reported the highest proportion of Level 1 facilities with expired drugs (56.5%). Among hospitals the majority 93.6% reported that they conducted monthly physical counts of drugs.

#### ***7.1.4. Drug storage and security***

To enhance drug protection and security, all facilities were asked to report on storage and security strategies used to secure the medicines. Table 53 below illustrates the drug storage and security strategies in place at the time of the assessment.

**Table 53: Proportion of Level 1 facilities and hospitals with appropriate measures in place to manage and protect drugs, Dec 2011**

Province	% with Secure locks		% where drugs protected from water		% where drugs protected from sunlight	
	Level1 N=1250	Hospitals N=125	Level1 N=1250	Hospitals N=125	Level1 N=1250	Hospitals N=125
Bulawayo	100.0	100.0	100.0	100.0	89.5	100.0
Harare	76.9	100.0	92.3	100.0	82.7	83.3
Manicaland	79.2	95.5	98.6	100.0	88.9	90.9
Mashonaland Central	93.7	91.7	97.3	100.0	91.9	75.0
Mashonaland East	88.1	94.1	98.8	100.0	90.5	94.1
Mashonaland West	79.4	85.7	97.9	100.0	94.3	85.7
Masvingo	83.3	92.9	95.1	92.9	88.3	92.9
Matabeleland North	81.5	100.0	100.0	100.0	91.3	80.0
Matabeleland South	73.1	100.0	97.2	100.0	87.0	90.0
Midlands	76.2	100.0	94.5	100.0	94.5	94.1
<i>National Average</i>	<i>81.7</i>	<i>95.2</i>	<i>97.1</i>	<i>99.2</i>	<i>90.5</i>	<i>88.8</i>

Both Level 1 facilities and hospitals reported high levels of security for pharmacies as well as protection of medicines from water and sunlight. More than 95% of the hospitals reported secure locks and adequate protection from water compared to 81.7% of Level 1 facilities that reported having secure locks.

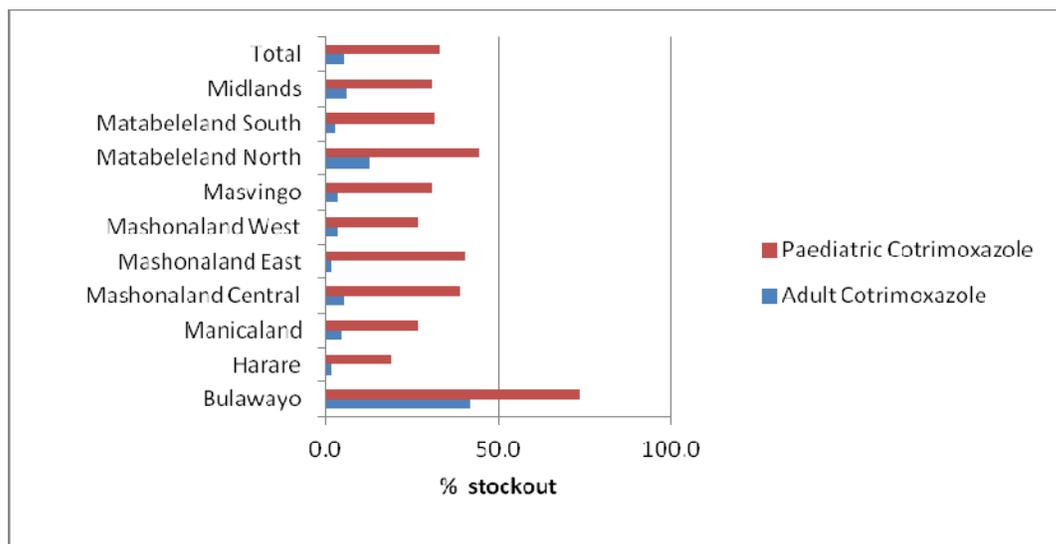
### **7.1.5 Drug Stocks Outs**

This study assessed stock situations in the preceding 30 days from time of completion of the questionnaire. A few essential medicines were used as proxy indicators of general availability of medicines.

#### **Paediatric Antibiotics**

Cotrimoxazole is a basic antibiotic used for both prophylaxis and treatment of common infections. About a third, 33% of Level 1 facilities reported stock outs of paediatric Cotrimoxazole suspension. These stock outs lasted an average of 125 days (4 months). Variations were seen according to provinces for example in Bulawayo, 73.7% of Level 1 facilities had stock outs of paediatric Cotrimoxazole lasting an average of 78 days (2 and half months). In Matabeleland North almost half (44.6 %) of the clinics had stock outs of paediatric Cotrimoxazole, lasting an average of 239 days (7 months). Further investigation is required to understand the reasons for these variations. Stock outs of Cotrimoxazole were lower at hospitals with only 24.8% reported reporting stock outs of paediatric Cotrimoxazole, lasting an average of 27 days.

**Figure 28: Proportion of Level 1 facilities reporting stock outs of adult and paediatric Cotrimoxazole by Province in the last 30 days, Dec 2011**



Among Level 1 facilities, Bulawayo reported the highest proportion of facilities (42%) with Amoxicillin syrup being out of stock. A third (34%) of Level 1 facilities in Matabeleland North had Amoxicillin syrup out of stock. For hospitals, 46 (37%) out of 125 reported stock outs of Amoxicillin syrup. Manicaland province reported the highest number of hospitals with Amoxicillin syrup stock outs.

### Treatment of Diarrhoea

Oral rehydration solution (ORS) and Zinc are critical to management of diarrhoea in children. Adequate and consistent supply of ORS sachets is a key intervention for childhood morbidity. A small proportion of Level 1 facilities (6.1%) reported stock outs of Zinc for diarrhea with a similarly small proportion 5.4% reporting stock outs of ORS sachets. This compares with a higher rate of stock outs for Zinc at a hospital level with 32 out of the 125 hospitals (26%) reporting stock outs of Zinc for diarrhoea. For ORS sachets only 10 (8%) of 125 hospitals reported stock outs.

### Treatment of Bacterial infections

One of the most commonly used antibiotics in all health facilities is Benzyl Penicillin. In this assessment 5% of Level 1 facilities reported stock outs of Benzyl Penicillin. Similarly among the hospitals, 8.8% reported stock outs of Benzyl Penicillin, with one hospital in Harare reporting stock outs lasting 30 days.

Among the Level 1 health facilities, Bulawayo reported the highest proportion with stock outs of Amoxicillin tablets (31.6%) used for treating adults. A lower proportion of hospitals nearly (13%) reported stock outs of Amoxicillin tablets. Matabeleland South province had the highest rate of stock outs with 4 out of 10 hospitals reporting. A smaller proportion of hospitals 10.4% reported stock of adult Cotrimoxazole tablets.

Level 1 facilities reported Gentamycin stock outs in all provinces. In eight Provinces more than half of the facilities reported stock outs of this antibiotic. Matebeleland South (68.5%), Midlands (67.4%) and Mashonaland West (64.5%), reported the highest proportion of stock out rates for Gentamycin. A smaller proportion of hospitals (12.8%) reported stock outs of Gentamycin with Mashonaland West having the highest proportion in 4 out of 14 hospitals.

### **Obstetric Medicines**

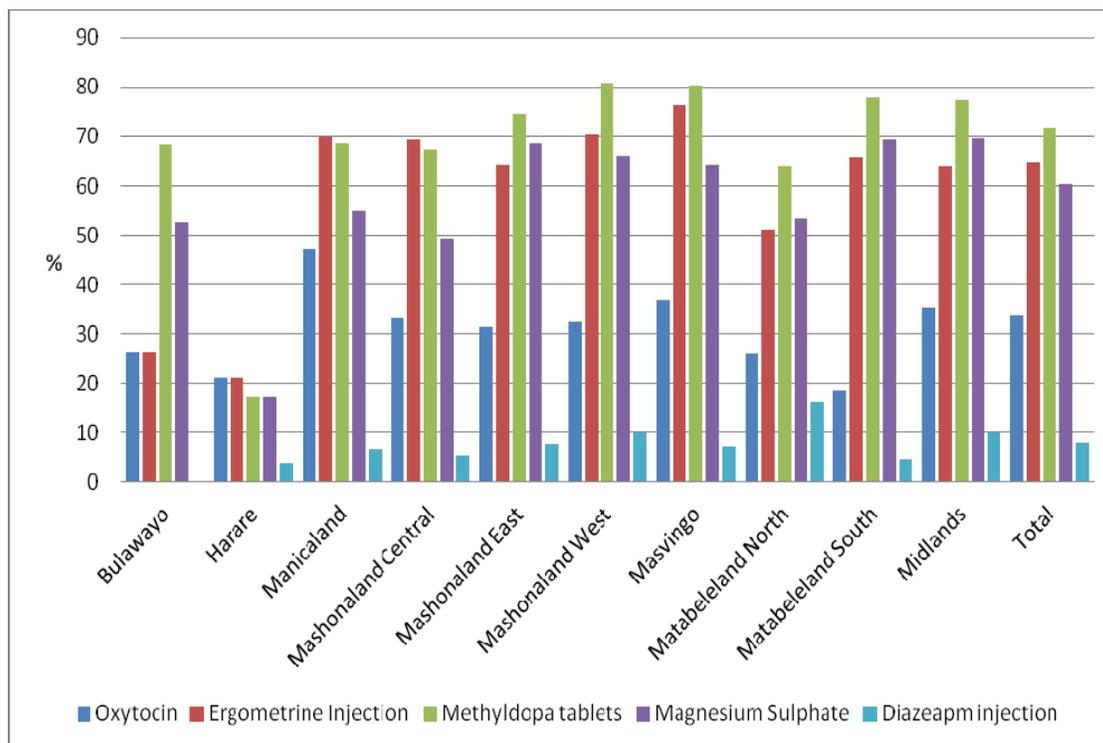
All facilities were asked to indicate stock levels for medicines used in emergency obstetric care in the previous 30 days prior to the assessment. The medicines used for managing complications of pregnancy reported on by the facilities included injectables such as Oxytocin, Ergometrin, Magnesium Sulphate, Diazepam and Methyldopa tablets used in the management hypertension.

Figure 29 below shows stock out levels of key obstetric medicines in Level 1 facilities by Province. Overall Methyldopa, used to control high blood pressure, was reported to be out of stock in 72% of Level 1 facilities. Stock outs of Methyldopa in Level 1 facilities ranged from 64.1% to 77.8%. The majority of health facilities in Mashonaland West (80.9%) and Masvingo (80.2%) reported stock outs of Methyldopa. These stock outs may have contributed to the high maternal morbidity and mortality statistics found in this assessment.

Variations were also noted in the availability of other injectables. Oxytocin is used to induce labour and is important in preventing postpartum haemorrhage. Nearly half of facilities in Manicaland (47.2%) reported Oxytocin stock outs in the previous month, while health facilities in the remaining nine Provinces reported stock outs ranging between 18.5% and 37%.

Ergometrin is used in the management of postpartum haemorrhage. Sixty-five percent of Level 1 facilities across the country reported Ergometrin injection stock outs. The majority of stock outs were reported in Masvingo Province (76.5%). Level 1 health facilities in Harare reported the lowest stock outs of 21.2 %. Sixty percent of health facilities across the country reported Magnesium Sulphate injection stock outs, a drug used in the management of eclampsia. Across the first level health facilities, low stock outs on Vitamin A capsules (7.7%) and Diazepam (8.0) were reported.

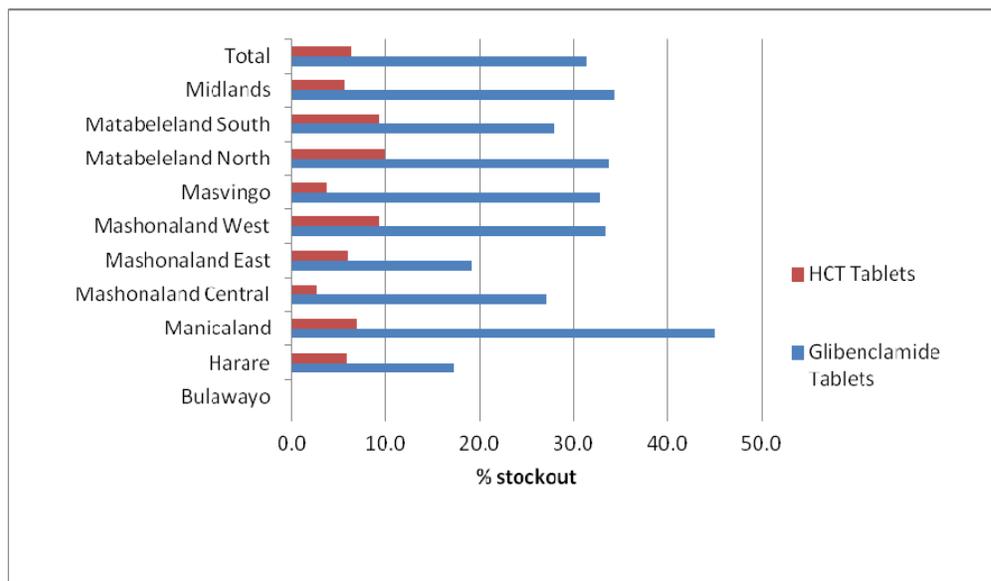
**Figure 29: Proportion of Level 1 facilities reporting stock outs of key emergency obstetric medicines in the last 30 days prior to the assessment by Province, Dec 2011**



Among the hospitals, 12.8% reported stock outs of Oxytocin. Manicaland Province had the highest proportion with 5 out of 22 hospitals reporting stock outs lasting an average of 47 days. A higher proportion of hospitals (52%) reported stock out of Ergometrin injection. Mashonaland West reported the highest proportion of facilities with 11 out 14 hospitals with stock outs. About half (51.2%) of hospitals reported stock outs of Vitamin K injection. Hospitals from Mashonaland West Province 71.4% reported highest stock outs of vitamin K injection.

Hydrochlorothiazide (Hct) and Glibenclamide are the most common medicines used in the management of hypertension and diabetes respectively. This study showed high stock out levels for Glibenclamide compared to Hct. As shown in Figure 30, among Level one facilities, 31.3% reported stock outs of Glibenclamide lasting an average of 182 days (6 months). In Manicaland Province this drug was reported to be out of stock by almost half of the facilities (44.9%). Lower levels of stock outs of Glibenclamide tables (6.4%) and Hct (4.8%) were reported at a hospital level. Most stock outs of Glibenclamide were reported in Manicaland where 4 out of the 22 hospitals reported stock outs lasting for about 30 days. Thirty nine (31.2%) of the 125 hospitals reported stock outs of insulin injection lasting an average of 25 days. Mashonaland Central Province reported the highest proportion of insulin stock outs among 5 of the 12 hospitals. These shortcomings have implications on patient care and control of NCDs. Chronic patients may default and adherence to therapy is comprised subsequently affecting health-seeking behavior.

**Figure 30: Proportion of Level 1 facilities reporting stock outs of Hydrochlorothiazide and Glibenclamide in the previous 30 days by Province, Dec 2011**



For reports on stock outs of drugs relevant for the management of malaria, HIV and TB please refer to the relevant sections above.

#### Summary of key findings

- Most pharmacists are stationed at central hospital level with only 11 pharmacists manning the 50 districts hospitals.
- 33% of Level 1 facilities reported stock outs of paediatric Cotrimoxazole suspension lasting an average of 125 days.
- 46 (36.8%) out 125 hospitals reported stock outs of Amoxicillin syrup, with Manicaland province reporting the highest number of hospitals.
- Level 1 facilities reported Gentamycin stock outs in all provinces with rates as high as 68.5% in Matabeleland South (68.5%) although a smaller proportion of hospitals (12.8%) reported stock outs in the previous 30 days.
- The majority of Level 1 facilities in Mashonaland West (80.9%) and Masvingo (80.2%) reported stock outs of methyldopa used in the management of pregnancy related hypertension.
- Stock out of Oxytocin ranged between 18-47% at Level 1 facilities compared to 12.8% stock out levels at hospitals.
- 51.2% of hospitals reported stock outs of Vitamin K injection with highest levels found in Mashonaland West Province.

## 7.2 Laboratory Services

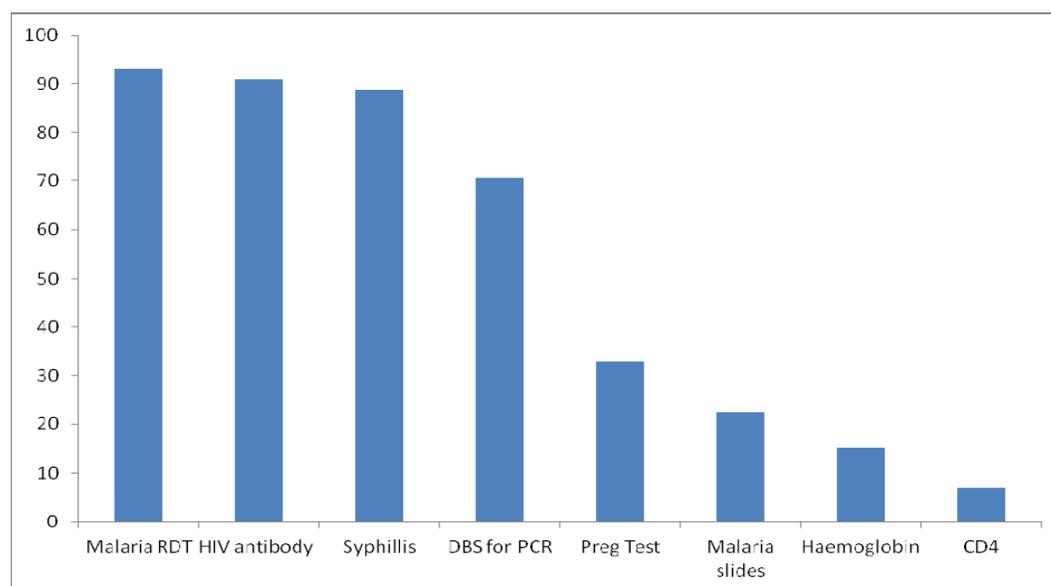
Accurate and timely laboratory analysis is critical in the provision of quality health services. The health facility needs assessment considered tests done in the laboratory as well as rapid tests conducted by the health worker.

### 7.2.1 Availability of laboratory tests and functioning equipment

Figure 31 shows the types of tests types available at Level 1 facilities nationally. Almost all Level 1 facilities, 92.5% reported the ability to conduct rapid diagnostic tests for malaria at the time of the assessment. A smaller proportion of facilities had the capacity to test for malaria using blood smears.

Anaemia in pregnancy is associated with poor maternal and fetal outcomes. It is estimated that 32.4% of pregnant women in Zimbabwe are anaemic (ZDHS 2010-2011). Only 15.1% of facilities reported having the capacity to check haemoglobin levels, particularly in pregnancy, with as few as 278 (22%) Level 1 facilities having a haemoglobin meter available. This may mean that some women at risk of developing severe anaemia during and after childbirth are not being regularly monitored, which may contribute to the high maternal mortality ratio.

**Figure 31: Proportion of Level 1 facilities offering rapid diagnostic tests by type of test, Dec 2011**



A high proportion (90.9%) of Level 1 facilities offer HIV antibody testing. However, a very small proportion, 6.6% go on to offer CD4 count tests. It appears more facilities from Bulawayo were able to offer CD4 tests (15.8%) compared to Harare 3.8%. Point of care CD4 machines have been distributed to a few facilities across the country. Amongst the hospitals there were 101 POC machines. This assessment did not specifically ask for availability of POC machines among Level 1 facilities. However, 82 of these facilities indicated that they were able to conduct CD4 tests at the time of the assessment so this may reflect access to POC machines but this needs further verification. Dry blood spot tests for Early Infant

Diagnosis were conducted by 70.6%. This is a positive finding considering that EID using DBS was rolled out in the last two years. This survey showed that Level 1 health facilities have limitations in conducting pregnancy tests as only 30% were able to carry out these tests, although it is not clear if this was a commodity issue or lack of provider capacity.

**Table 54: Number of hospitals offering different diagnostic tests by Province, Dec 2011**

Province	Hospitals N=125	Nos. offering Malaria smears	Nos. offering TB smears	Nos. offering Gram Stains	Nos. offering HIV antibody rapid test	Nos. offering CD4 test	Nos. offering DBS for DNA PCR	Nos. offering Urea and Electrolyte
Bulawayo	3	2	1	2	2	2	0	2
Harare	6	6	6	6	6	6	1	6
Manicaland	22	14	14	10	22	11	14	7
Mashonaland Central	12	12	12	11	12	12	8	1
Mashonaland East	17	14	15	13	17	14	12	8
Mashonaland West	14	14	12	11	13	13	8	5
Masvingo	14	14	12	9	14	11	9	5
Matabeleland North	10	8	9	3	10	6	6	2
Matabeleland South	10	10	10	8	10	8	8	1
Midlands	17	15	11	10	15	10	12	4
<b>Total</b>	<b>125</b>	<b>109</b>	<b>102</b>	<b>83</b>	<b>121</b>	<b>93</b>	<b>78</b>	<b>41</b>

Table 54 above shows the number of hospitals able to carry out a number of selected tests at the time of the study. Among the hospitals 74.4% were able to conduct CD4 testing in comparison to only 6.6% of Level 1 facilities. This is a reflection that CD4 machines are more readily available from district level. The majority of hospitals were able to carry out malaria smears 87% and TB smears 81.6%. Relatively small proportions (32.8%) of hospitals were able to conduct testing for urea and electrolytes.

Table 55 below provides an overview of the functional laboratory equipment reported by hospitals at the time of the assessment. Among the 125 hospitals, there were 383 microscopes available. There were a total of 158 centrifuges available and in working condition. However, there seemed to be a small number of functional autoclaves as t only 85 were reported to be working among all hospitals assessed.

**Table 55: Summary of functional Laboratory Equipment in hospitals by Province, Dec 2011**

<b>Province</b>	<b>Nos. of Hospitals</b>	<b>Nos. of Microscope</b>	<b>Nos. of Centrifuge</b>	<b>Nos. of Haemoglobin meter</b>	<b>Nos. of Refrigerator for reagents</b>	<b>Nos. of Autoclave</b>	<b>Nos. of POC CD4</b>
Bulawayo	3	12	6	0	15	1	4
Harare	6	29	20	8	18	10	10
Manicaland	22	54	14	10	47	21	7
Mashonaland Central	12	37	19	4	22	7	19
Mashonaland East	17	42	14	13	25	4	13
Mashonaland West	14	31	12	6	19	7	9
Masvingo	14	61	21	11	29	7	10
Matabeleland North	10	35	14	13	16	6	9
Matabeleland South	10	32	11	7	21	5	9
Midlands	17	50	27	23	31	17	11
<b>Total</b>	<b>125</b>	<b>383</b>	<b>158</b>	<b>95</b>	<b>243</b>	<b>85</b>	<b>101</b>

### ***7.2.2 Staffing levels in hospital laboratories***

Among the hospitals, there were 35 (61%) filled posts for medical laboratory scientists against a reported establishment of 57. For laboratory technicians relatively more positions were filled with 114 (84%) out of the 136 established posts. This finding implies that hospitals rely more on the laboratory technicians for conducting tests.

### ***7.2.3. User fees for laboratory services***

Most Level 1 facilities did not charge user fees for diagnostic tests, for example only 14 out of 1250 facilities reported charging for sputum tests. Similarly a small number, 31 charged for RDTs for malaria. Table 56 shows the proportion of hospitals charging user fees for selected tests by type of hospital. On average, 40.8% of hospitals charged for laboratory tests with most commonly (83.3%) central hospitals charging user fees for laboratory services. Of note, 15.2% of hospitals charge for CD4 testing with half of the provincial hospitals charging for this test.

**Table 56: Proportion of hospitals charging user fees for selected laboratory tests by type of hospital, Dec 2011**

Province	Nos. of Hospitals	% charging Lab Services	% charging Haemoglobin	% charging CD4	% charging Clinical chemistry	% charging Glucose	% charging Blood Group	% charging Sputum	% charging RPR	% charging Malaria
Central hospital	6	66.7	83.3	16.7	50.0	66.7	83.3	16.7	83.3	66.7
Provincial hospital	8	37.5	75.0	50.0	25.0	62.5	87.5	25.0	50.0	50.0
District Hospital	50	42.0	60.0	18.0	22.0	46.0	28.0	6.0	40.0	24.0
Mission hospital	46	37.0	43.5	6.5	13.0	37.0	15.2	4.3	23.9	17.4
Private	15	40.0	40.0	13.3	33.3	53.3	33.3	20.0	33.3	20.0
<i>National Average</i>	<i>125</i>	<i>40.8</i>	<i>53.6</i>	<i>15.2</i>	<i>21.6</i>	<i>45.6</i>	<i>30.4</i>	<i>8.8</i>	<i>36.0</i>	<i>24.8</i>

### **Summary of findings**

- Among the hospitals, there were 35 (61%) filled posts for medical laboratory scientists against a reported establishment of 57.
- Only 15.1% of Level 1 facilities reported having the capacity to check for haemoglobin levels with as few as 22% having a haemoglobin meter.
- A high proportion (90.9%) of Level 1 facilities offered HIV antibody testing.
- Only 30% of Level 1 facilities were able to conduct pregnancy tests.
- Less than half, 43% of hospitals provided Urea and Electrolyte testing.
- 74.4% of hospitals were able to conduct CD4 testing in comparison to only 6.6% of Level 1 facilities.
- The majority of hospitals were able to carry out malaria smears 87% and TB smears 81.6%.
- On average 40.8% of hospitals charge for laboratory tests.

### **7.3 Medical Equipment**

Medical equipment is used in the diagnosis, treatment and monitoring of patients and the health service cannot provide effective curative and preventive services without it. A shortage of medical equipment not only compromises client care but also leads to staff frustration and de-motivation.

To guide the procurement of equipment and check what gaps in equipment may exist, all health facilities should have a standardised catalogue of equipment that is critical to that level of care. Guidelines should also be available. Procurement of equipment happens at district level of care and Level 1 facilities receive their allocation per order from there.

There are several guides that assist health workers on decisions on equipment procurement as shown in Table 57. Among the hospitals, 68% reported that having a standard list of equipment. However, in Mashonaland West Province half, 7 out of the 14 hospitals had such a list. The lack of a standard list of equipment implies that some hospitals may operate without certain basic equipment. The majority of hospitals had the necessary guidelines for procurement and maintenance of equipment. For example, 94 (75%) out of 125 hospitals had guidelines for purchasing equipment. However, only a minority 11 (8.8%) out of 125 had resources for the purchase of equipment and fewer still (5.6%) reported having adequate resources for equipment maintenance.

**Table 57: Proportion of hospitals with equipment procurement guidelines by Province, Dec 2011**

<b>Province</b>	<b>Hospitals</b>	<b>% With Standard list of equipment</b>	<b>% With Guidelines for purchasing equipment</b>	<b>% With Specifications for purchasing equipment</b>	<b>% With Resources for purchasing equipment</b>	<b>% With Guidelines for maintenance of equipment</b>	<b>% With Specifications for maintenance of equipment</b>	<b>% With Resources for maintenance of equipment</b>
Bulawayo	3	2	2	3	1	2	2	1
Harare	6	4	5	4	0	4	4	0
Manicaland	22	13	13	12	1	12	12	1
Mashonaland Central	12	9	8	10	1	9	7	1
Mashonaland East	17	15	15	15	0	13	11	1
Mashonaland West	14	7	10	8	2	9	9	0
Masvingo	14	11	11	12	1	9	8	2
Matabeleland North	10	6	8	7	1	6	5	0
Matabeleland South	10	6	8	8	1	6	6	0
Midlands	17	12	14	12	3	13	12	1
<b>Total</b>	<b>125</b>	<b>85</b>	<b>94</b>	<b>91</b>	<b>11</b>	<b>83</b>	<b>76</b>	<b>7</b>

### 7.3.1 Diagnostic Equipment

Figure 58 shows the number of functional fixed X-ray, Ultrasound, CT and MRI scan by type of hospital. There were only 19 Ultrasound Scan machines at 50 of the district hospitals compared to 30 among the 8 provincial hospitals. There were only two functional CT scans in the country and one of these was in a private hospital. There was only one functional MRI scan.

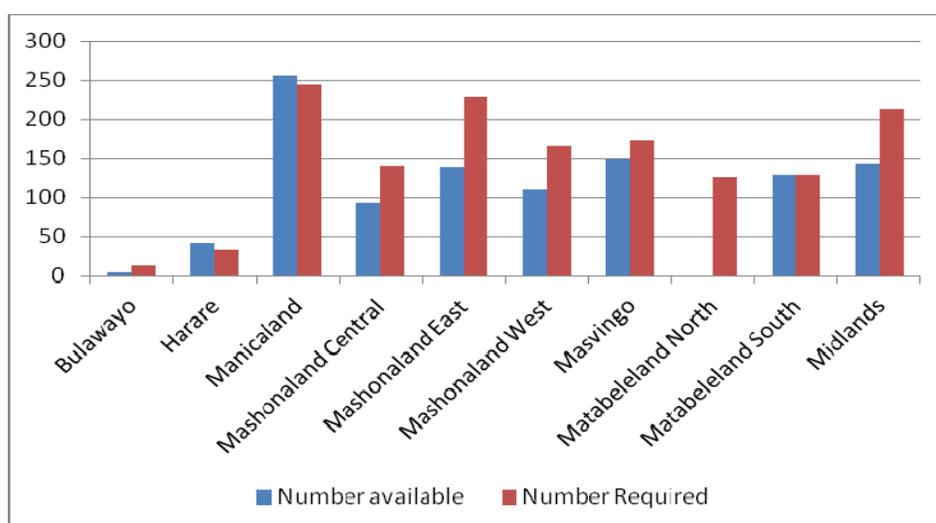
**Figure 58: Number of available and functional equipment by type of hospital, 2010**

Type of Hospital	Nos. of Hospitals	Nos. of X-ray machine fixed	Nos. of Ultrasound Scan	Nos. of CT scan	Nos. of MRI scan
Central	6	8	7	1	0
Provincial	8	9	30	0	0
District	50	30	19	0	0
Mission	46	36	18	0	1
Private	15	9	29	1	0
<b>Total</b>	<b>125</b>	<b>92</b>	<b>103</b>	<b>2</b>	<b>1</b>

### 7.3.2. Basic Obstetric and Newborn Equipment available

Among Level 1 facilities, the assessment indicated the number of delivery beds available against a perceived need stated by Provinces. Figure 32 summarises the availability of delivery beds among Level one facilities. For example, among facilities in Mashonaland East Province, there was a 39% shortfall in the number of delivery beds needed with only 139 delivery beds available compared to 228 required. Similarly in Midlands Province, there were 143 delivery beds available compared to a requirement of 214 beds.

**Figure 32: Number of delivery beds available compared to the number of beds required by Level 1 facilities, Dec 2011**



As shown in Figure 59 below, most facilities reported an adequate number of ordinary examination couches, although there was an 80% shortfall of examination couches adequate to examine a pregnant women with only 175 examination couches with lithotomy poles being available compared to the 886 required. There were large differences in the numbers of available footstools, examination lamps and heaters, all required to examine pregnant women comfortably and adequately. Mobile examination lights were in short supply with only 9% available at Level 1 facilities compared to a reported requirement of 1,577 lights. Fetoscopes were also in short supply with only 865 available, a shortfall of 40% against those required.

Sphygmomanometers equipped with a baby cuff were least likely to be reported as available among Level 1 facilities with only 79 (6%) being available out of a 1,364 required. Similarly an average of 92 (11%) baby incubators were available against a requirement of 818. Bulawayo and Harare reported the least number of baby incubators available 2 and 3 respectively.

**Table 59: Availability of basic standard obstetric and newborn examination equipment reported at Level 1 facilities by Province, Dec 2011**

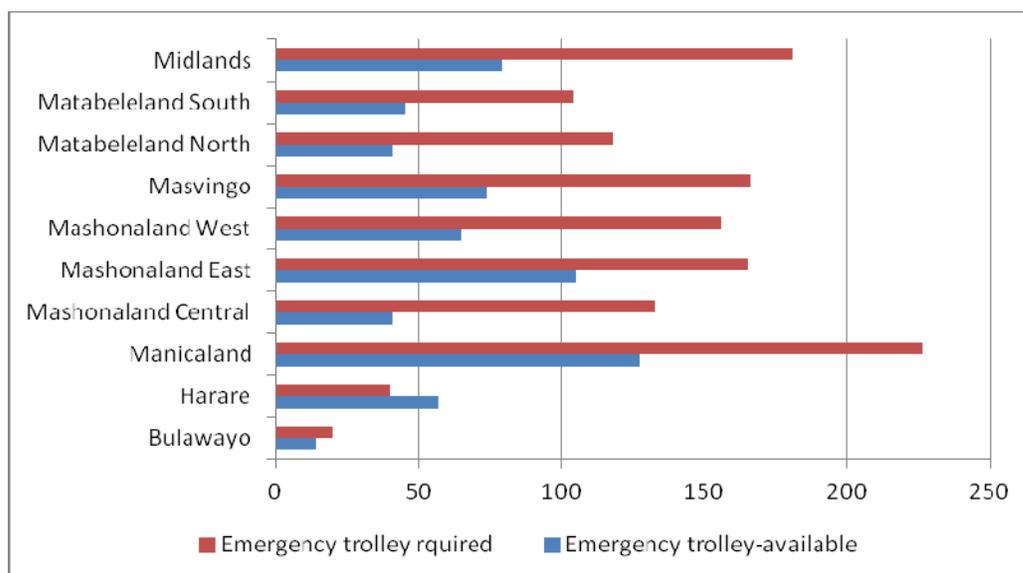
Province	Nos. Examination Couch		Nos. Examination couch with lithotomy poles		Nos. Foot stool		Nos. Lamp gas		Nos. Lamp paraffin		Nos. Incubator		Nos. Fetoscope		Nos. B P machine (adult cuff)		B P Machine (baby cuff)	
	Nos. available	Nos. Required	Nos. available	Nos. Required	Nos. available	Nos. Required	Nos. available	Nos. Required	Nos. available	Nos. Required	Nos. available	Nos. Required	Nos. available	Nos. Required	Nos. available	Nos. Required	Nos. available	Nos. Required
Bulawayo	81	28	1	17	67	45	1	4	4	5	2	1	28	11	31	41	2	12
Harare	126	64	5	17	170	137	9	30	2	4	3	16	63	74	117	139	8	22
Manicaland	202	193	19	148	57	279	35	219	47	249	26	143	163	248	364	400	25	244
Mashonaland Central	87	100	20	100	25	131	4	102	11	114	1	95	69	158	267	194	4	125
Mashonaland East	123	158	24	110	45	231	13	179	47	161	16	124	87	211	215	290	8	216
Mashonaland West	145	132	19	97	50	202	11	139	22	131	11	93	80	121	185	219	12	132
Masvingo	137	130	26	103	49	148	15	105	27	170	13	81	123	172	322	308	6	161
Matabeleland North	114	113	19	81	52	186	11	134	22	147	4	74	81	143	189	211	7	146
Matabeleland South	126	117	25	78	50	176	23	153	26	172	4	75	91	109	206	309	2	123
Midlands	170	184	17	135	29	204	19	195	19	177	12	116	80	198	225	254	5	183
<b>Total</b>	<b>1311</b>	<b>1219</b>	<b>175</b>	<b>886</b>	<b>594</b>	<b>1739</b>	<b>141</b>	<b>1260</b>	<b>227</b>	<b>1330</b>	<b>92</b>	<b>818</b>	<b>865</b>	<b>1445</b>	<b>2121</b>	<b>2365</b>	<b>79</b>	<b>1364</b>

Note: care needs to be taken in interpreting the results as not all facilities will deliver or manage maternal /newborn cases

### 7.3.3 Availability of basic adult and paediatric resuscitation equipment

Gaps were identified in the availability of basic resuscitation equipment. There were shortages of equipment such emergency and drug trolleys. An emergency trolley contains resuscitation equipment, as well as emergency drugs, and essential consumables e.g. cannulas, fluid giving sets and Ambu bags and masks etc. Among Level 1 facilities, there were a total of 648 emergency trolleys available, against a number of 1,309 required to meet patient needs, a 50% shortfall. Figure 33 summarises the availability of emergency trolleys by province.

**Figure 33: Number of emergency trolleys available compared to those required by Level 1 facilities by Province, Dec 2011 (N=1250)**



Among Level 1 facilities, there were a total of 1,268 adult ambu bags available of a required 2,273. However, there were only 257 oxygen cylinders with appropriate gauges for delivery of oxygen compared to 1,416 required, which translates to a shortfall of 82%. In addition, there were only 649 paediatric oxygen masks among Level 1 facilities, which is only 16.7% of the number needed.

Among the Level 1 facilities there were 136 paediatric laryngoscopes which crudely translates to one in 10 facilities sharing a laryngoscope. For example, in Manicaland Province there were as few as 11 paediatric laryngoscopes present between 216 Level 1 facilities. Overall there were larger discrepancies in respect to the necessary equipment available and required at a hospital level as shown in Table 60. For example, there were 136 paediatric laryngoscopes available against a reported requirement of 1,318, a shortfall of 90%.

**Table 60: Available and required emergency resuscitation equipment reported by hospitals by Province, Dec 2011 (N=125)**

Province	Laryngoscope adult N =125		Laryngoscope paediatric N=125		Oxygen cylinder with gauge N=125		Oxygen masks paediatric N=125	
	Nos. Available	Nos. required	Nos. available	Nos. required	Nos. available	Nos. required	Nos. available	Nos. required
Bulawayo	23	20	6	19	21	33	40	45
Harare	35	45	20	58	61	75	56	90
Manicaland	35	194	11	199	23	199	32	458
Mashonaland Central	17	91	6	113	7	91	28	182
Mashonaland East	28	197	13	179	23	201	81	452
Mashonaland West	28	141	9	151	20	168	96	353
Masvingo	44	153	22	155	21	128	54	250
Matabeleland North	31	139	19	142	28	124	46	327
Matabeleland South	31	123	13	125	30	185	147	292
Midlands	28	186	17	177	23	212	69	1427
<b>Total</b>	<b>300</b>	<b>1,289</b>	<b>136</b>	<b>1,318</b>	<b>257</b>	<b>1,416</b>	<b>649</b>	<b>3,876</b>

### Summary of findings

- At Level 1 facilities, there was an 80% shortfall of examination couches with only 175 examination couches with lithotomy poles being available compared to the 886 required.
- Shortages of basic emergency resuscitation equipment were noted among Level 1 facilities, for example there was a 44% shortage of adult ambu bags and masks.
- At the 1,250 Level 1 facilities only 257 oxygen cylinders with a suitable gauge were available, a shortfall of 82%. Similar shortfalls were found at hospitals with 82% more oxygen cylinders required.
- Both adult and paediatric laryngoscopes were in short supply at hospitals with shortages of adults of the magnitude of 77% increasing to 90% for paediatric laryngoscopes.

## 7.4 Infrastructure

Adequate and appropriate infrastructure is necessary for the provision of quality health services. Among Level 1 facilities the majority, 76% had waiting areas where clients were protected from the rain and sun before being attended to. A smaller proportion of facilities, 38.6% had an indoor waiting room for patients. Clinics from Harare and Bulawayo were more likely to report presence of this infrastructure. Very few Level 1 facilities, 9.8% had specially designated waiting areas for women.

Figure 34 and Figure 35 below illustrate the number of maternity beds available by type of facility among Level 1 facilities and hospitals respectively.

**Figure 34: Number of maternity beds by type of Level 1 facility, Dec 2011**

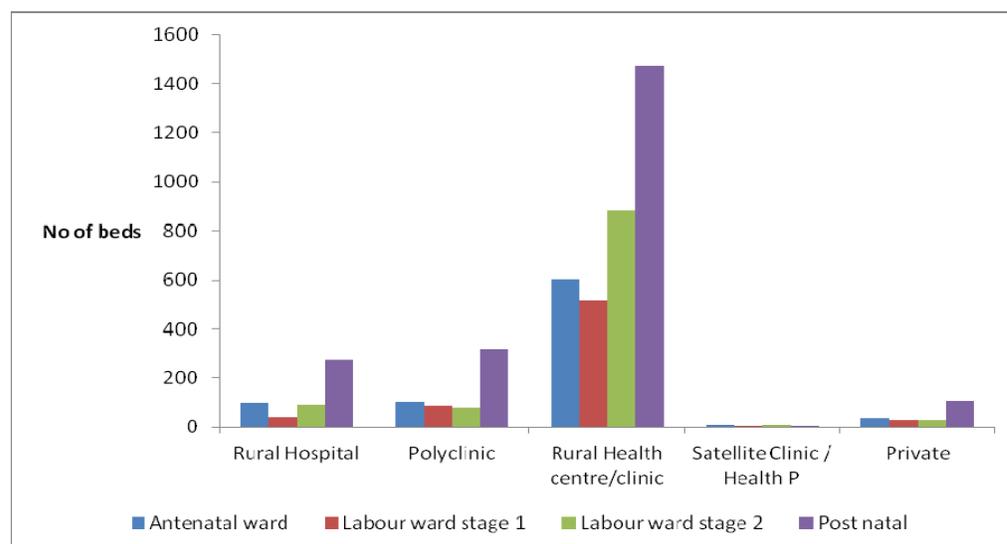


Figure 36 shows that rural health centres have the most maternity beds used for ANC, labour and post delivery.

**Figure 35: Number of maternity beds by type of hospital, Dec 2011**

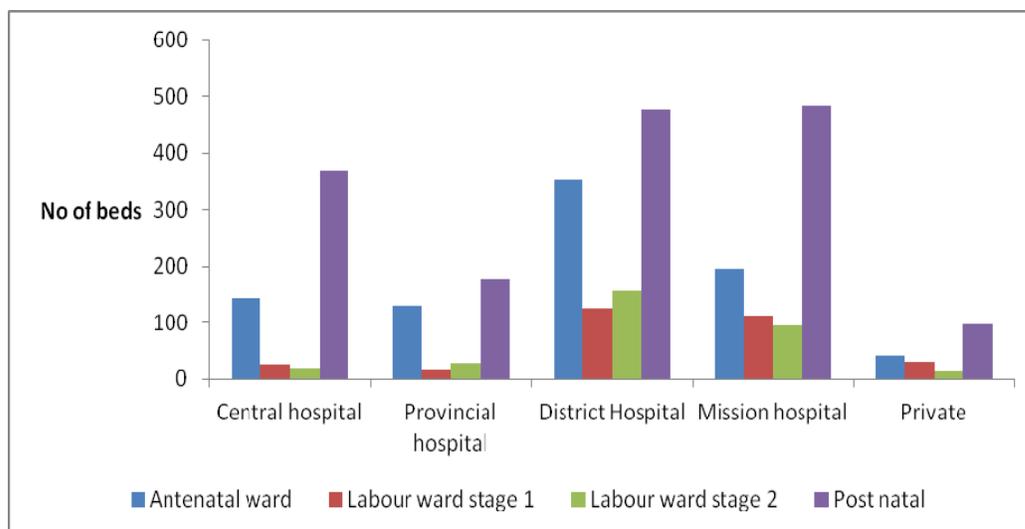


Figure 35 above shows that most beds in maternity are situated at district and mission hospitals. District and mission hospitals appear to hold equal numbers of beds used for labour and post delivery.

Facilities were asked to report on the availability of infrastructure, space adequacy cleanliness and state of repair. Of the total Level 1 facilities, 776 (72.5%) reported that treatment rooms were in a fair/good state. Matabeleland North had the lowest proportion of facilities in a fair/good state at 69.0%.

1,156 Level 1 facilities (92.5%) reported having a Drug Store/Pharmacy. Bulawayo Province facilities had the highest proportion of facilities with 18 out of the 19 facilities having a Drug Store/Pharmacy. Only 390 out of 1,250 i.e. 33.7% reported the Drug Store/Pharmacy state was adequate. Despite the low proportion of adequacy of space most facilities reported that they had adequate drug storage security. More details on the state of repair of departments within hospitals is given below.

**7.4.1. Labour ward and Maternity waiting homes at Level 1 facilities**

The delay in reaching a hospital by women in labour has been identified in several studies as one of the causes of maternal mortality and morbidity in Zimbabwe. To address this delay waiting maternity shelters have been constructed around the country. In this assessment facilities and hospitals were asked to indicate the availability and adequacy of space in the maternity waiting areas and the labour ward.

Table 61 shows the perceived adequacy of space at Level 1 facilities in the labour ward. The majority of Level 1 facilities, 78.9% reported having a labour “ward” which was described as adequate in terms of space by 63% of the respondents.

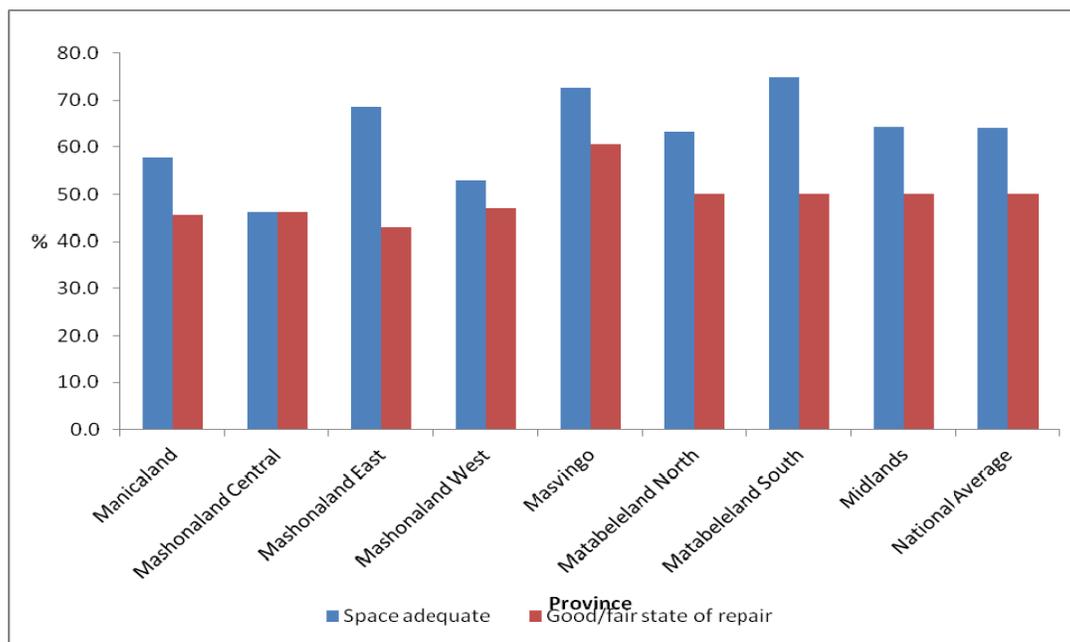
**Table 61: Proportion of Level 1 facilities reporting availability and adequacy of space for labour (n=1250)**

Province	Level 1 facilities*	Labour ward	
		% Reporting Labour ward Available	Of those reporting labour ward available % Who said there was adequate space in labour ward
Bulawayo	19	15.8	100.0
Harare	52	30.8	75.0
Manicaland	216	89.4	65.3
Mashonaland Central	111	90.1	65.0
Mashonaland East	168	86.9	52.7
Mashonaland West	141	73.8	60.6
Masvingo	162	87.0	70.9
Matabeleland North	92	75.0	59.4
Matabeleland South	108	75.9	53.7
Midlands	181	72.9	71.2
<b>Total</b>	<b>1,250</b>	<b>78.9</b>	<b>63.4</b>

Among the Level 1 facilities, 292 (23.4%) reported having a maternity waiting homes. However, not all rural health centres are expected to have a shelter next to the clinic and mothers are referred to the nearest waiting shelter where these are not available. Among the Level 1 facilities, most maternity waiting homes (57%) were found at rural hospitals while 23% of rural health centres had these homes. Masvingo Province reported the highest proportion of facilities with waiting mother shelters mainly because it has the highest number of rural hospitals.

Figure 36 shows the adequacy of space and state of repair of maternity waiting homes at those Level 1 facilities reporting having a mother’s waiting shelter. Of these, 64% reported having adequate space while half reported that the homes were in a state of good to fair repair.

**Figure 36: Proportion of waiting mother shelters at Level 1 facilities with adequate space and state of repair, Dec 2011 (N=234)**



**7.4.2. Labour ward and Maternity waiting homes at hospital facilities**

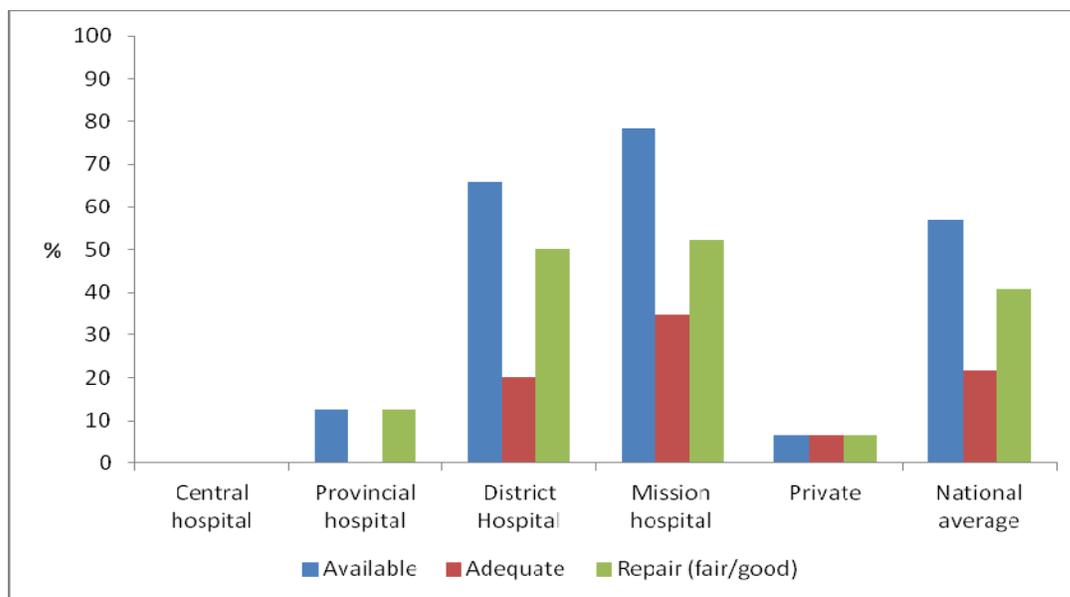
Similar to Level 1 facilities, hospitals were asked about the availability and adequacy of maternity waiting rooms, ANC and labour wards and neonatal units. Table 62 below shows that among 117 hospitals that reported, most had ANC and labour wards but on average only 41.9% reported adequate space on the ANC ward and 52% adequate space in the labour ward. Just over half of all hospitals reported having a neonatal unit and of those that did, only 23.9% of hospitals reported that there was adequate space.

**Table 62: Proportion of hospitals with available and adequate maternity waiting rooms, ANC and labour wards and neonatal units, Dec 2011, (N=117)**

Province	Hospitals	Maternity Waiting room		ANC ward		Labour ward		Neonatal Unit	
		% Availability	% Adequate space	% Availability	% Adequate space	% Availability	% Adequate space	% Availability	% Adequate space
Bulawayo	2	0.0	0.0	100.0	0.0	100.0	0.0	50.0	50.0
Harare	3	0.0	0.0	100.0	33.3	133.3	100.0	100.0	66.7
Manicaland	21	81.0	19.0	85.7	33.3	95.2	42.9	42.9	28.6
Mashonaland Central	12	33.3	16.7	91.7	50.0	100.0	66.7	75.0	25.0
Mashonaland East	16	56.3	31.3	81.3	31.3	100.0	43.8	37.5	12.5
Mashonaland West	14	57.1	35.7	100.0	50.0	92.9	57.1	42.9	21.4
Masvingo	13	76.9	23.1	100.0	61.5	100.0	61.5	84.6	38.5
Matabeleland North	10	60.0	20.0	90.0	30.0	100.0	60.0	50.0	10.0
Matabeleland South	10	80.0	10.0	90.0	40.0	100.0	40.0	60.0	20.0
Midlands	16	56.3	31.3	93.8	50.0	100.0	50.0	62.5	18.8
<b>National Average</b>	<b>117</b>	<b>60.7</b>	<b>23.1</b>	<b>91.5</b>	<b>41.9</b>	<b>99.1</b>	<b>52.1</b>	<b>56.4</b>	<b>23.9</b>

Figure 37 shows that maternity waiting homes are a common feature among Mission and District level hospitals, with 78% of mission hospitals reporting the availability of maternity waiting homes and 66% of the district hospitals. However, only 20% of district hospitals reported space as adequate. Half of both district and mission hospitals reported the state of repair of maternity waiting homes as fair/good.

**Figure 37: Distribution, adequacy and state of repair of maternity waiting homes by type of hospital**



### 7.4.3 Adequacy of space in other departments within hospitals

Hospitals were also asked to indicate the availability and adequacy of space in other departments within a hospital setting and this information is captured in Table 63 below. The table shows that although most hospitals have both a theatre and X-Ray department, there were limitations in the adequacy of space in these departments. For example, 84% of hospitals had theatres but only 61.6% had adequate space. A lower proportion (34.4%) of hospitals had youth friendly corners with only 12% reporting adequate space for these centres.

**Table 63: Proportion of hospitals indicating availability and space adequacy for selected departments by Province, Dec 2011**

Province	Hospitals*	Theatre		X-ray department		Dental department		Youth Friendly Corner	
		% Availability	% Space adequacy	% Availability	% Space adequacy	% Availability	% Space adequacy	% Availability	% Space adequacy
Bulawayo	3	66.7	0.0	66.67	33.33	33.3	33.3	66.7	33.3
Harare	6	50.0	33.3	66.67	33.33	66.7	50.0	50.0	33.3
Manicaland	22	72.7	45.5	72.73	50.00	40.9	22.7	18.2	4.5
Mashonaland Central	12	91.7	66.7	91.67	50.00	66.7	16.7	50.0	8.3
Mashonaland East	17	76.5	52.9	82.35	58.82	70.6	29.4	23.5	0.0
Mashonaland West	14	100.0	78.6	85.71	64.29	64.3	50.0	28.6	21.4
Masvingo	14	100.0	78.6	100.00	71.43	78.6	57.1	42.9	21.4
Matabeleland North	10	90.0	70.0	90.00	80.00	80.0	60.0	50.0	10.0
Matabeleland South	10	90.0	70.0	100.00	80.00	80.0	40.0	50.0	10.0
Midlands	17	82.4	70.6	70.59	64.71	58.8	41.2	23.5	11.8
<b>National Average</b>	<b>125</b>	<b>84.0</b>	<b>61.6</b>	<b>83.20</b>	<b>60.80</b>	<b>64.0</b>	<b>38.4</b>	<b>34.4</b>	<b>12.0</b>

\*Note not all hospitals are expected to provide these services e.g. psychiatric institutions

#### 7.4.4 Staff Accommodation

Staff accommodation within facilities promotes timely access to services by members of the community. For public Level 1 health facilities, the MoHCW recommends that there are at least 3 standard houses per facility for staff. In this assessment respondents were asked to indicate availability, adequacy and state of repair of staff accommodation for both Level 1 facilities and hospitals. Table 64 below shows the proportion of Level 1 facilities with available staff accommodation, as well as the adequacy and state of repair of these. It should be noted that this reporting is subjective, in terms of what is reported as being of ‘adequate space’ and ‘repair’, as no standards were set to measure this within this assessment and so verification of reports would be required.

**Table 64: Proportion of Level 1 facilities with adequate staff accommodation by Province, Dec 2011**

Province	Staff Accommodation			
	Health Clinics	% Where Available	% With Space Adequate	% With Repair (fair/good)
Bulawayo	19	0.0	0.0	0.0
Harare	52	0.0	0.0	0.0
Manicaland	216	85.6	46.5	35.7
Mashonaland Central	111	79.3	31.8	45.5
Mashonaland East	168	85.7	41.7	52.1
Mashonaland West	141	68.1	47.9	45.8
Masvingo	162	82.7	42.5	39.6
Matabeleland North	92	85.9	51.9	35.4
Matabeleland South	108	88.0	44.2	41.1
Midlands	181	80.1	52.4	42.8
<b>Total</b>	<b>1250</b>	<b>77.3</b>	<b>45.1</b>	<b>42.1</b>

The table reflects that 77.3% of Level 1 facilities had staff accommodation although no accommodation was provided in Harare or Bulawayo, both urban settings. Overall only 45.1% indicated that the accommodation was adequate, while a lower proportion 42.1% reported that the state of repair was fair or good. Accommodation was least likely to be in good repair in Matabeleland North and Mashonaland Central.

Table 65 below summarises the availability, adequacy and state of repair of staff accommodation at a hospital level. Although 89.6% of the hospitals reported that they had staff accommodation, only 12.8% reported this as adequate. Less than half 45.6% reported the state of repair as fair/good. Private hospitals (26.7%) followed by District hospitals (44%) reported the lowest rates of accommodation being in fair/good condition.

**Table 65: Proportion of hospitals reporting available staff accommodation, according to adequacy and state of repair, by type of hospital, Dec 2011 (N=125)**

Health facility type	Number of Hospitals	% With accommodation available	% With adequate amount of accommodation	% With accommodation of repair (fair/good)
Central hospital	6	100.0	33.3	66.7
Provincial hospital	8	87.5	12.5	50.0
District Hospital	50	94.0	6.0	44.0
Mission hospital	46	91.3	13.0	50.0
Private	15	66.7	26.7	26.7
<b>National Average</b>	<b>125</b>	<b>89.6</b>	<b>12.8</b>	<b>45.6</b>

#### **7.4.5 Water Infrastructure**

Adequate water infrastructure is a basic requirement in the provision of quality health services. Availability of water for basic hygiene such hand washing has already been captured under the infection control section. In this assessment on average Level 1 facilities had running water 61.8 hours per week. Amongst the mainly rural provinces it took approximately 16 minutes for staff to fetch water from a water source.

Both Level 1 facilities and hospitals were asked to report on their primary sources of water in this assessment and the results are summarised in Tables 66 and 67 below. Among Level 1 facilities, 45.8% had piped water into the facility. Bulawayo reported the highest proportion of facilities with all facilities reporting having piped water, while Mashonaland East reported the least at only 32.1% of facilities. The next most common primary source of water was from a manual borehole, with 42.5% of facilities reporting this. Approximately 25% reported having a borehole with pump as the primary source of water. It should however be noted that some facilities reported more than one primary source of water.

**Table 66: Proportions of facilities with type of primary water source at Level 1 facilities, by Province, Dec 2011**

<b>Province</b>	<b>% With water Piped into HF (Municipal/Council)</b>	<b>% With water Piped into Yard</b>	<b>% With Borehole with pump</b>	<b>% With Borehole Manual</b>	<b>% With Protected well</b>	<b>% With Unprotected well</b>
Bulawayo	100.0	0.0	0.0	0.0	0.0	0.0
Harare	98.1	1.9	21.2	32.7	0.0	0.0
Manicaland	37.5	6.5	27.8	48.1	1.9	5.1
Mashonaland Central	41.4	3.6	28.8	42.3	3.6	4.5
Mashonaland East	32.1	3.0	23.8	56.5	9.5	3.6
Mashonaland West	43.3	4.3	29.1	47.5	5.7	3.5
Masvingo	48.8	1.9	25.3	42.0	3.1	2.5
Matabeleland North	52.2	1.1	34.8	29.3	3.3	2.2
Matabeleland South	49.1	0.9	29.6	21.3	0.0	2.8
Midlands	44.2	3.3	14.4	45.9	3.3	4.4
<b>Total</b>	<b>45.8</b>	<b>3.3</b>	<b>25.2</b>	<b>42.5</b>	<b>3.7</b>	<b>3.5</b>

Table 67 below shows the primary sources of water for hospitals. The majority (82%) of hospitals had piped water into the hospital, while the minority (9.6%) used pumped borehole water. Only 1.6% of hospitals reported using manual boreholes.

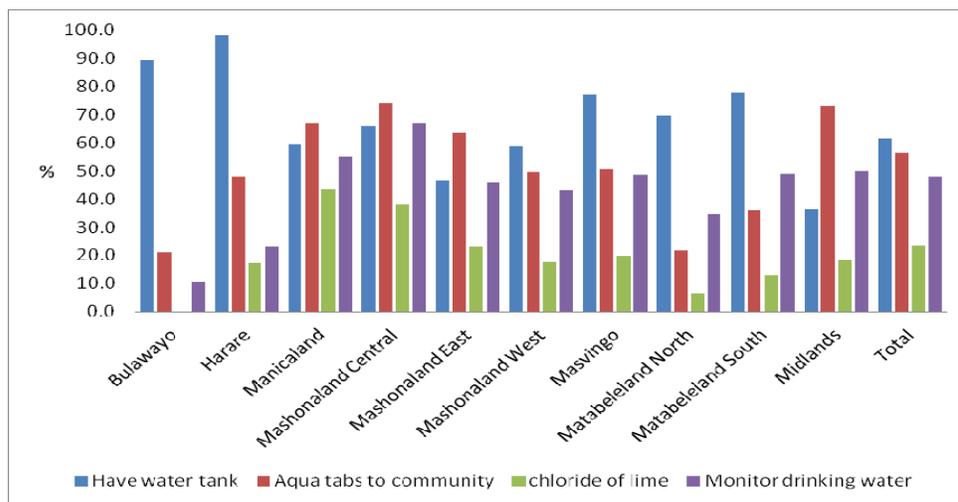
**Table 67: Primary Sources of water for hospitals by Province, Dec 2011 (N=125)**

Province	Primary source of water					Total
	Nos. with water piped into facility	Nos. with public tap/standpipe	Nos. with borehole with a pump	Nos. with borehole manual	Nos. with Other	
Bulawayo	3	0	0	0	0	3
Harare	6	0	0	0	0	6
Manicaland	18	0	3	0	1	22
Mashonaland Central	8	0	3	1	0	12
Mashonaland East	14	0	2	0	0	17
Mashonaland West	12	0	1	1	0	14
Masvingo	11	0	2	0	1	14
Matabeleland North	8	1	0	0	1	10
Matabeleland South	9	0	0	0	0	10
Midlands	14	0	1	0	0	17
<b>Total</b>	<b>103</b>	<b>1</b>	<b>12</b>	<b>2</b>	<b>3</b>	<b>125</b>

In this assessment both Level 1 facilities and hospitals were asked to indicate how water was stored and report on the various methods used for water treatment. The findings are illustrated in the figures 38 and 39 below.

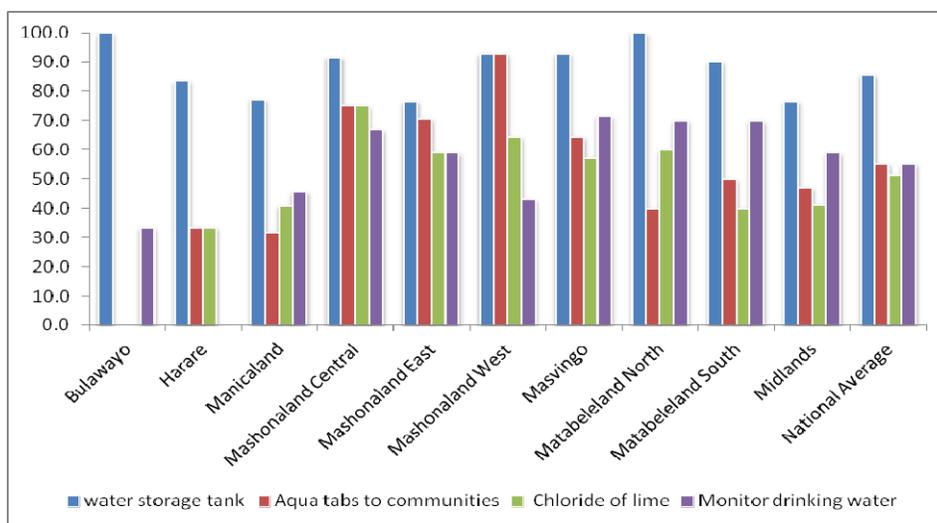
Approximately 61% of Level 1 facilities reported having water tanks. Midlands Province reported the lowest proportion of facilities with water tanks at 36.5%. About half (56.4%) of Level 1 facilities distributed aqua tablets to communities. Stocks of chloride of lime used for water treatment were in short supply as only 23.5% reported having stocks available. Approximately half (47.9%) of facilities reported routinely monitoring the quality of water in their catchment areas.

**Figure 38: Water Infrastructure and Water quality control measures at Level 1 Facilities by Province, Dec 2011**



The majority of hospitals (85.6%) had water storage tanks. Distribution of Aqua water tablets to communities and the monitoring of drinking water was conducted in 55.2% of hospitals. Chloride of lime was available in slightly more than half 51.2% of hospitals.

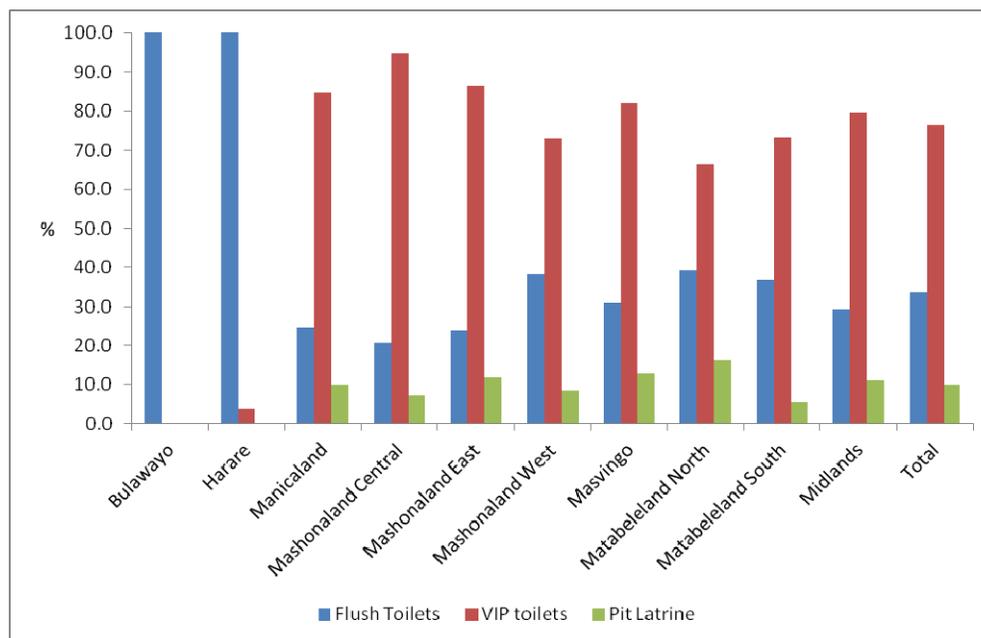
**Figure 39: Water Infrastructure and Water quality measures at Hospitals by Province, Dec 2011**



### 7.4.6 Hygiene and Sanitation

The assessment asked for information on the state of hygiene and sanitation in all facilities. Figure 40 below illustrates the type of functional toilet available at Level 1 facilities.

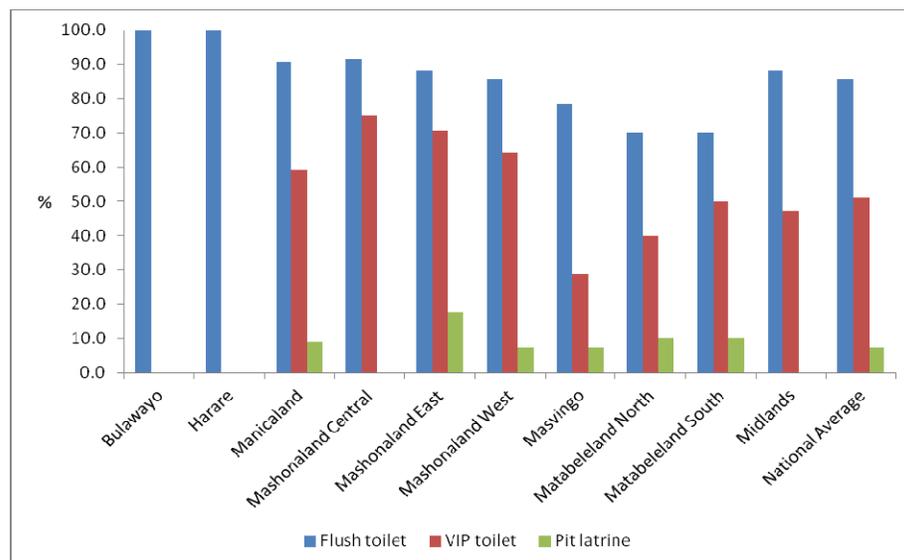
**Figure 40: Proportion of Level 1 facilities with a functional toilet system available by type of system and by Province, Dec 2011 (N=1250)**



Ninety-four percent of the 1,250 facilities had functional toilets. Of these, Midlands recorded the lowest proportion at 89% with only 161 out of 181 health clinics with these. The highest coverage for flush toilets was in Harare and Bulawayo. Mashonaland Central had the lowest proportion of flush toilets at 20.7%. Bulawayo is the only Province with all facilities having functional toilets. It is noteworthy that approximately 10% of the Level 1 facilities still use pit latrines. The highest proportion of pit latrines (16.3%) was reported in Matabeleland North Province. Despite this, 68.3% of Level 1 facilities reported toilets as being adequate with a smaller proportion (58 %) reporting that toilets were in a fair/good state of repair. Nationally on average about 40% of Level 1 facilities had a functional flush system toilet, which is consistent with the VMAS round 10 findings in 2011.

Figure 41 below reflects the toilet systems available in the hospitals assessed in the year under review. Most of the hospitals 91.2% had functional toilets and 85.6% had a flush system. Among the hospitals Mashonaland East (17.6%), Matabeleland North (10.0%) and Matabeleland South (10.0%) used pit latrines.

**Figure 41: Proportion of hospitals with a functional toilet available by type and by Province, Dec 2011 (N=125)**

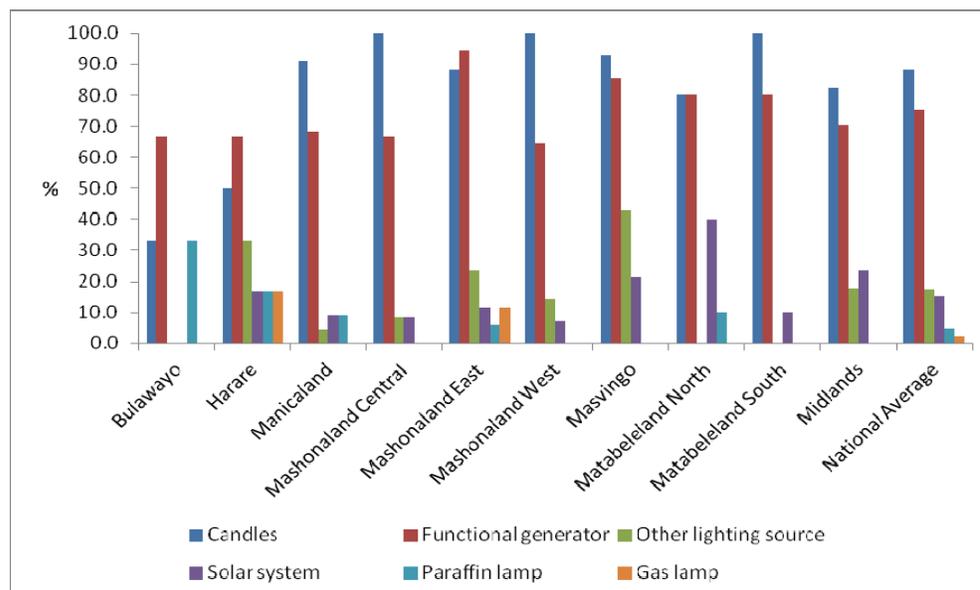


#### 7.4.7 Electricity supply

Availability of electricity and reliable back up sources of power are essential in providing both routine and emergency services. In the assessment both Level 1 facilities and hospitals were asked to indicate if electricity was available at all times of the day. This assessment showed that only a tenth i.e. 10% of Level 1 facilities have electricity all the time. Electricity was available an average 4 days per week. This finding is consistent with the prevailing power outages experienced countrywide. Only 9.8% of the Level 1 facilities had generators for power back up. Harare had the highest proportion of clinics with back-up generators at 30.8% and Manicaland Province had the lowest proportion at 5.1%. On availability of back-up generator, the NHIFA findings seem to contradict VMAS findings round 10 2011 finding where on average 16.5% of clinics were reported to have a functional back-up generator.

Figure 42 below shows the proportion of hospitals with different sources of power and lighting including: functional generator; fuel for generators; paraffin or gas lamps; solar system; and other lighting sources. The primary source of electricity supply reported by hospitals was the Zimbabwe Electricity supply authority accounting for 95% of the hospitals. While 75% of hospitals had functional generators, only 39% indicated having adequate fuel to power the generators. Candles were used as alternative lighting sources by most (88%) of the facilities. In this assessment only 15% of hospitals relied on solar energy. Only one hospital reported using solar as the primary source of electricity.

**Figure 42: Proportion of alternative sources of lighting among hospitals by Province, Dec 2011**



There is no doubt that the quality of care is likely to be compromised due to the non-availability of electricity. Without electricity, it may not be possible for hospitals to carry out simple surgical operations such as caesarean sections, therefore requiring referral to larger institutions with more likelihood of having alternative sources of power. Furthermore, some procedures may also end up being cancelled for example, surgical procedures or referred to quaternary levels.

#### Summary of key findings

- The majority (76%) of Level 1 facilities had waiting areas where clients were protected from the rain or sun.
- While 77.3% of Level 1 facilities had staff accommodation, only 45.1% reported the accommodation to be adequate. This compares to a greater availability of staff accommodation found at 89% of the hospitals but only 12.8% reported this as adequate.
- 40% of Level 1 facilities had a functional flush system toilet compared to 86% of hospitals.
- The majority (82%) of hospitals had piped water compared to only 46% of Level 1 facilities where reliance on boreholes was more predominant.
- Only 9.8% of the Level 1 facilities had functional generators for power back up compared to 75% of hospitals. Reliability of fuel for generators was however of concern.

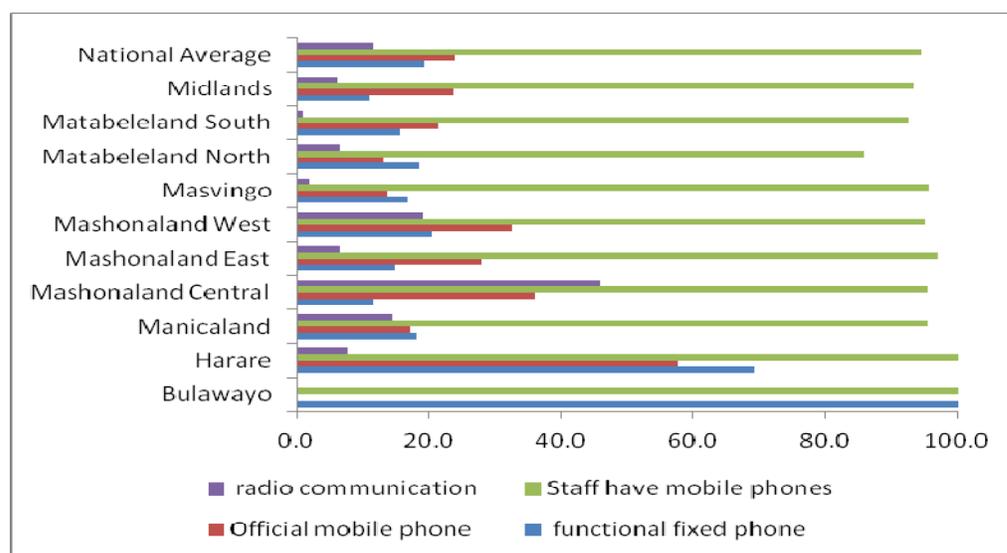
- Only 1 hospital reported using solar as the primary source of electricity.

### 7.5 Communications and IT services

Reliable communication is critical to the functionality of a health system. In this assessment an average of 19.4% of Level 1 facilities had a functional fixed telephone line. This finding is consistent with VHMAS round 10, which showed coverage of 19.9% for functional landline telephones. There were however major differences between provinces for example in Bulawayo all clinics had a functional telephone while in Midlands Province only 11% of facilities had a functional fixed telephone. The majority (94.6%) of health workers were reported to have personal mobile phones, but less than a quarter (24%) of facilities had an official mobile phone. This situation presents an opportunity to use existing personal and official mobile phones to improve communication.

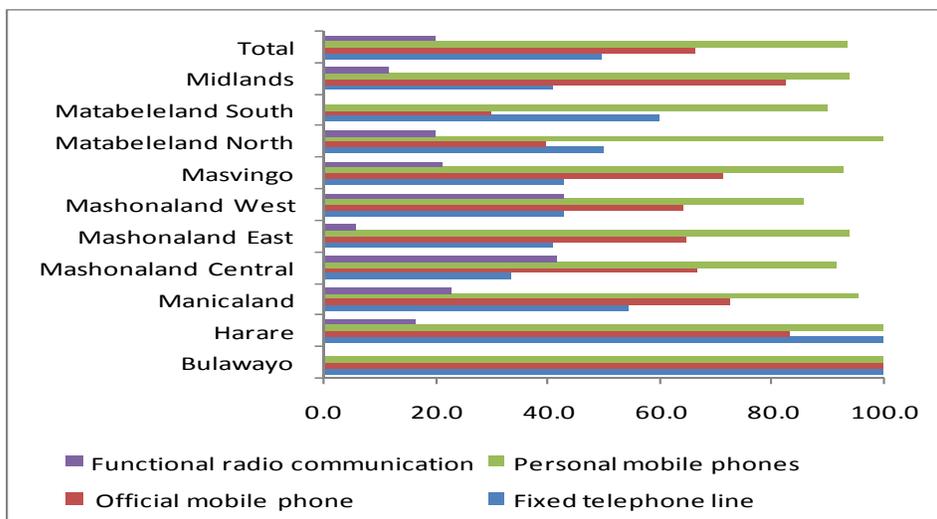
Only 11.6% of Level 1 facilities had a functional radio communication system. The highest proportion of facilities with radio communication was in Mashonaland Central Province facilities at 45.9% or 51 out of 111 facilities. This method seems to be obsolete having been overtaken by mobile technologies with respect to lower costs and maintenance. Figure 43 summarises the availability of different modes of communication at Level 1 facilities by Province.

**Figure 43: Proportion of Level 1 facilities with different types of communication devices by Province, Dec 2011**



In comparison Figure 44 below summarises the availability of different modes of communication at a hospital level. Half (50%) of the hospitals had a functional fixed telephone line. Hospitals from Mashonaland Central reported the least coverage for fixed land telephones (4 out of 12). Almost all staff (93.6%) in hospitals had personal mobile phones and 92.8% reported that they had a networks signal at their hospitals.

**Figure 44: Availability of different modes of communication at a hospital level by Province, Dec 2011**



The assessment found significant gaps with respect to Information Technology (IT) among the lower Level 1 facilities compared with hospitals. Only 14.2% of clinics had access to a computer compared to 96% of hospitals and Internet access was only reported by 3.3% of Level 1 facilities compared to 55.2% of hospitals. Only 10 Level 1 facilities reported access to fax services out of 1,250 facilities. There were wide urban/ rural differences with 73.7% of the Level 1 clinics in Bulawayo reporting access to computers while only 6.3% of those in Mashonaland Central had access. Five of the ten Provinces reported less than 10% of health facilities with functional computers. Although the urban centres had better access to computers none seem to be actually using these for email purposes. It means that the 2 city health departments may be incurring unnecessary costs owing to use of other more expensive ways of communication.

At a hospital level, a small proportion used computers for other functions such as billing of patients at 32.8% of hospitals and management of laboratory results at a further 31.2%.

**Summary key findings**

- Only 19.4% of Level 1 facilities had a functional landline compared to 50% of hospital facilities.
- The majority of health workers at both Level 1 and hospital facilities had personal mobile phones.
- Only 11.6% of Level 1 facilities had a functional radio communication system.
- Only 14.2% of clinics had access to a computer compared to 96% of hospitals and

Internet access was only reported by 3.3% of Level 1 facilities compared to 55.2% of hospitals.

## 7.6 Ambulance services

In relation to ambulance availability, the MoHCW policy indicates that there should be three running ambulances per district.

Figure 45 shows the number of functional ambulances compared to the total number available per province. This assessment found that there were a total of 199 ambulances among the 125 reporting hospitals. Of these, approximately half (55.2%) were functional at the time of the study. The situation was reported to be worse in the urban provinces, where only 4 (30.7%) of 13 ambulances in Harare were reported to be functional and 3 (21.4%) of 14 ambulances in Bulawayo province working.

A regular supply of fuel is vital for a functional ambulance system. Of the 125 hospitals, 81 (64.8%) reported having a regular supply of fuel. There were notable urban versus rural differences, with the three hospitals in Bulawayo reporting a regular supply of fuel compared to only 10 of the 22 facilities in Manicaland province reporting this.

**Figure 45: Total number of existing ambulances compared to the number of functional ambulances at hospital level by Province, Dec 2011 (N=125)**

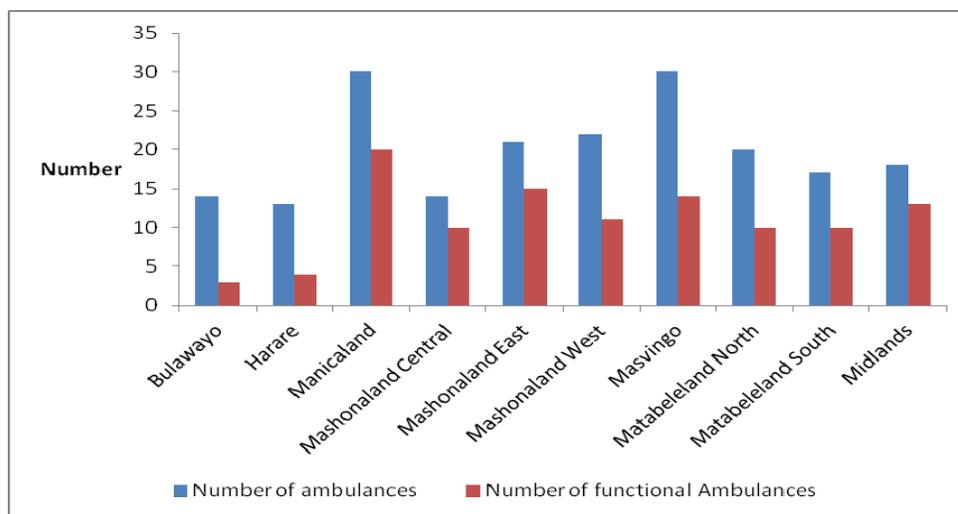


Table 68 below shows that there was an average of one functional ambulance per hospital. However in Harare there were only 4 functional ambulances for 6 hospitals including Chitungwiza. In addition, hospitals had an average of 2 functional service vehicles per facility.

**Table 68: Number of functional ambulances and service vehicles per hospital by province, 2011**

Province	Nos. of hospitals	Nos. of functional Ambulances	Nos. of service vehicles	Nos. of functional service vehicles	Average Nos. of functional service vehicles per hospital
Bulawayo	3	3	11	10	3
Harare	6	4	12	9	2
Manicaland	22	20	36	26	1
Mashonaland Central	12	10	33	25	2
Mashonaland East	17	15	46	38	2
Mashonaland West	14	11	28	25	2
Masvingo	14	14	36	29	2
Matabeleland North	10	10	28	21	2
Matabeleland South	10	10	20	15	2
Midlands	17	13	33	33	2

**Summary of key findings**

- At hospital level, there were 199 ambulances available but only half (55.2%) of these were functional.
- Only 64.8% of hospitals reported a regular supply of fuel to run the ambulances.
- On average there is one functional ambulance per hospital with Harare having the least number per hospitals covered by ambulance services.

**8 Health Information**

The national Health Information strategy (2009-2014) guides the collection, flow and utilisation of data required to inform decision making to strengthen health services. The strategy outlines how the flow of information at different levels should be managed and the organisational structures within the MOHCW that should be in place to support this.

**Human resources for HMIS**

To strengthen health information systems in Zimbabwe, Health Information Assistants (HIA) management posts have been created at district and mission hospital levels. This cadre is responsible for the compilation and submission of all health information returns to the provincial level for onward submission to the national level. The HIA also advises the District Health Executive team concerning matters concerning health information.

According to the NHIFA assessment among hospitals, there were 28 out of 42 established posts filled for health information officers, a vacancy rate of 33%. Hospitals reported an establishment of 154 for health information assistants of which 126 posts were filled. This reflects a vacancy rate of 18% for health information assistants.

### 8.1. Patient Cards

In this assessment both Level 1 facilities and hospitals were asked to indicate whether they issued both the child health and ART cards. The findings are illustrated in Table 69 below among Level 1 facilities.

**Table 69: Proportion of Level 1 facilities issuing child health and ART cards by Province, Dec 2011**

Province	Health Clinics	Proportion of Level 1 facilities that issue Child Health Cards (%)	Proportion of Level 1 Facilities that issue ART cards (%)
Bulawayo	19	94.7	52.6
Harare	52	90.4	28.8
Manicaland	216	72.2	31.0
Mashonaland Central	111	68.5	64.9
Mashonaland East	168	78.6	25.6
Mashonaland West	141	64.5	23.4
Masvingo	162	73.5	22.8
Matabeleland North	92	94.6	34.8
Matabeleland South	108	74.1	25.9
Midlands	181	72.9	23.8
<b>Total</b>	<b>1,250</b>	<b>75.0</b>	<b>30.4</b>

\*The question did not specify whether the facilities issued new or old cards

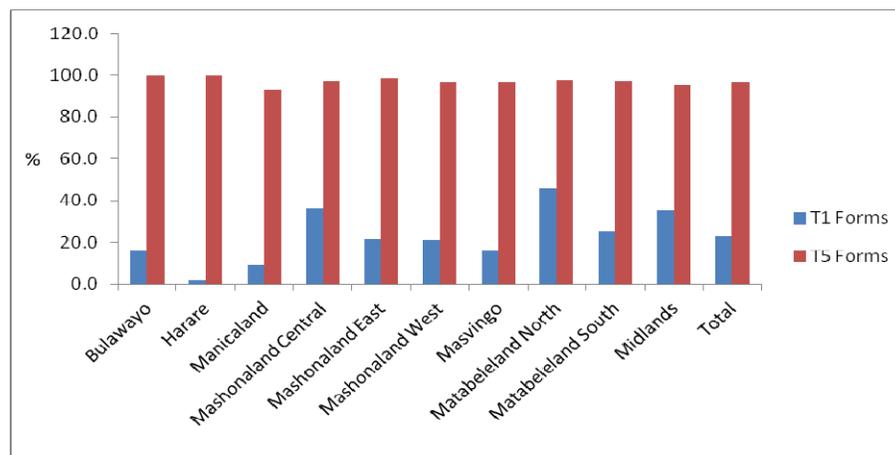
Table 68 above shows that on average three quarters of Level 1 health facilities issued child health cards while less than a third (30.4%) issued ART cards. The majority of health facilities (94.7%) in Bulawayo issued the most child health cards whilst the lowest child health cards, 64.5% were issued in Mashonaland West. For ART cards health facilities in Mashonaland Central reportedly issued most (64.9%) ART cards in comparison to Masvingo where less than a quarter (22.8%) of facilities were issuing these cards. This compares to hospitals where 84% reported issuing ART treatment cards.

### 8.2 Monitoring and Reporting Forms

For purposes of disease monitoring, each health facility collects information on standardised recommended paper forms. These are known as the T series forms. These forms are completed and submitted to the next level of care at prescribed deadlines. The T1 form collects notifiable diseases, while the T5 collects information on OPD attendance including maternal and child health indicators. The T9 is a quarterly reporting form that captures data on inpatient morbidity and mortality. The HS3 records monthly hospital workload, for example, bed state, and staffing, expenditure and hospital assets.

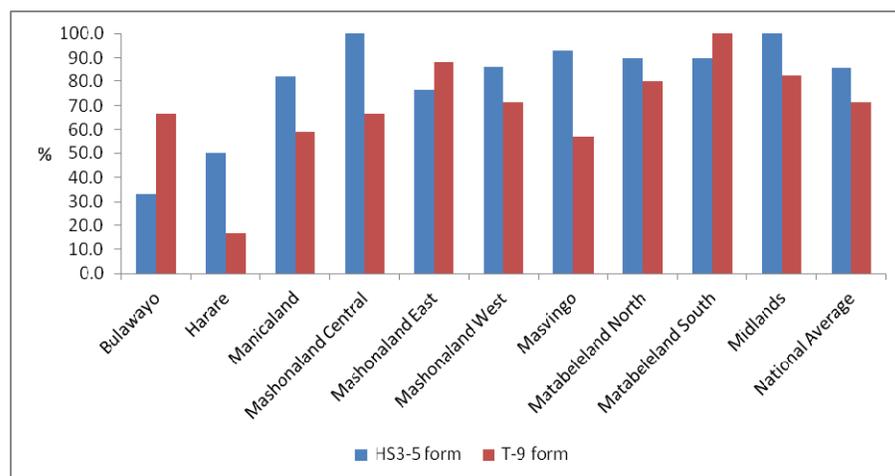
Figure 46 below gives the proportion of facilities with T1 and T5 forms. These have been used as a proxy to measure how likely it is for facilities to generate information i.e. without a form, how could a facility routinely report data.

**Figure 46: Proportion of Level 1 facilities reporting year round availability of T1 and T5 reporting forms by Province, Dec 2011**



It is clear that whilst most Level 1 facilities had T5 forms available; few had the forms used to report on notifiable diseases.

**Figure 47: Proportion of hospitals reporting year round availability of HS3 and T9 series forms by Province, Dec 2011**



In Harare and Bulawayo only a relatively small proportion of hospitals had the T9 and HS3 forms. For example, only 1 of the 3 hospitals in Bulawayo had HS3-5 forms available. The other provinces tended to have more of these forms in stock although on average HS3-5 forms were more available than the T9 forms.

The assessment also asked both Level 1 facilities and hospitals for self-reported indications of the completion status of the forms submitted and whether reports were submitted in a timely fashion as per schedule. Table 70 reports on the findings on completion status among Level 1 facilities.

**Table 70: Proportion of Level 1 facilities indicating completeness of reporting forms by Province, Dec 2011**

Province	Level 1 facilities	% Reporting completeness of Monthly aggregate T5 forms	% Reporting completeness of Monthly aggregate, HS3-5	% Reporting completeness of Quarterly inpatients report	% Reporting completeness of Facility status report	% Reporting completeness of Monthly cumulative vaccine coverage	% Reporting completeness of Notifiable disease report	% Reporting completeness of Monthly drug status
Bulawayo	19	94.7	0.0	0.0	26.3	84.2	84.2	100.0
Harare	52	100.0	1.9	3.8	5.8	76.9	76.9	73.1
Manicaland	216	94.9	24.5	13.9	39.4	86.6	84.3	71.3
Mashonaland Central	111	96.4	20.7	20.7	36.9	86.5	73.9	75.7
Mashonaland East	168	98.8	19.0	11.9	24.4	86.9	75.6	78.0
Mashonaland West	141	97.2	22.7	7.1	26.2	81.6	75.2	76.6
Masvingo	162	95.7	16.0	11.1	30.2	83.3	72.8	73.5
Matabeleland North	92	98.9	15.2	14.1	37.0	85.9	72.8	50.0
Matabeleland South	108	97.2	25.9	13.9	38.9	84.3	75.0	66.7
Midlands	181	96.1	24.3	18.8	33.7	86.7	80.1	69.1
<b>Total</b>	<b>1,250</b>	<b>96.8</b>	<b>20.2</b>	<b>13.2</b>	<b>31.8</b>	<b>85.0</b>	<b>77.1</b>	<b>71.7</b>

Table 70 above shows that the majority of Level 1 facilities reported routinely completing the T5 form on a monthly basis. Completion of the monthly vaccine coverage data, followed by the notifiable disease report and monthly drug status were also more likely to be reported as undertaken by Level 1 facilities. This assessment however did not verify if reports were being routinely completed and further analysis of this would be required. For the T5 series, 93.4% of Level 1 facilities reported that the forms were submitted on time according to the national schedules.

**Table 71: Proportion of hospitals indicating timely submission of routine reporting forms by Province, Dec 2011**

Province	Nos. of Hospitals	% Indicating timely submission of T5	% Indicating timely submission of T9	% Indicating timely submission of HS3/5	% Indicating timely submission of Psychiatry
Bulawayo	3	66.7	0.0	66.7	33.3
Harare	6	50.0	16.7	50.0	16.7
Manicaland	22	86.4	54.5	86.4	40.9
Mashonaland Central	12	91.7	58.3	83.3	66.7
Mashonaland East	17	82.4	82.4	82.4	64.7
Mashonaland West	14	78.6	78.6	100.0	85.7
Masvingo	14	64.3	35.7	78.6	78.6
Matabeleland North	10	100.0	80.0	80.0	80.0
Matabeleland South	10	100.0	90.0	100.0	80.0
Midlands	17	70.6	76.5	82.4	64.7
<i>National Average</i>	<i>125</i>	<i>80.8</i>	<i>64.0</i>	<i>84.0</i>	<i>64.0</i>

Table 71 above shows that over 80% of hospitals reported timely submission of the T5 and HS3-5 forms. Again this proportion has not been verified as this is self-reported and needs further triangulation with the MoHCW head office health information department. Of note, a smaller proportion (64%) reported timely submission of both T9 and psychiatry returns.

### **8.2.1. Registers**

Health workers are expected to routinely enter and update patient details in numerous standardised registers. These are then used to both monitor patient care but also to support monthly collation of data. As shown in Table 72 below, a small proportion of Level 1 facilities, reported stock outs of some of the routinely used registers including: 3.4% stock outs for ANC, 2.9% for delivery, 3.8% for TB and 6.0% for ART registers. A larger proportion of Level 1 facilities reported stock out of the postnatal registers with an average of 20.4% reporting stock outs in the previous 3 months. Rural Health Centres reported the highest proportion, 21.6%.

**Table 72: Proportion of Level 1 facilities reporting stock outs of different registers in the previous 3 months by type of facility, Dec 2011**

Type of facility	Level 1 facilities	% with stock out of Outpatient register	% with stock out of ANC register	% with stock out of Delivery Register	% with stock out of Postnatal register	% with stock out of TB register	% with stock out of ART register
Rural Hospital	61	23.0	1.6	4.9	21.3	1.6	3.3
Polyclinic	48	12.5	6.3	4.2	14.6	4.2	4.2
Rural Health centre/clinic	1024	16.9	3.8	2.8	21.6	4.3	6.6
Satellite Clinic / Health P	40	10.0	0.0	2.5	12.5	0.0	2.5
Private	77	11.7	0.0	1.3	11.7	0.0	2.6
<i>National Average</i>	<i>1250</i>	<i>16.5</i>	<i>3.4</i>	<i>2.9</i>	<i>20.4</i>	<i>3.8</i>	<i>6.0</i>

Table 73 shows the proportion of hospitals reporting stock outs of registers in the previous 3 months prior to the assessment. Admission registers were reported to be out of stock by 29.6% of the hospitals. An almost equal proportion 28.8% reported stock outs of outpatient registers. A fifth, 20% reported stock outs of Postnatal registers which is similar to the finding at Level 1 facilities. Only a small proportion, 2.4%, reported stock outs of delivery and ART registers and this is also consistent with findings at Level 1 facilities.

**Table 73: Proportion of hospitals reporting stock outs of specific registers in the previous 3 months, Dec 2011**

Province	Number of Hospitals	% with stock out of Admission register	% with stock out of ANC register	% with stock out of ART register	% with stock out of Delivery register	% with stock out of Outpatient register	% with stock out of PMTCT register	% with stock out of Post Natal register	% with stock out of TB register	% with stock out of Theatre register
Bulawayo	3	66.7	33.3	33.3	0.0	33.3	0.0	0.0	0.0	33.3
Harare	6	16.7	0.0	0.0	0.0	33.3	0.0	16.7	16.7	0.0
Manicaland	22	18.2	13.6	0.0	4.5	31.8	9.1	22.7	9.1	9.1
Mashonaland Central	12	25.0	8.3	0.0	8.3	41.7	8.3	25.0	0.0	0.0
Mashonaland East	17	29.4	5.9	0.0	0.0	29.4	11.8	35.3	5.9	23.5
Mashonaland West	14	21.4	0.0	0.0	0.0	21.4	14.3	14.3	0.0	7.1
Masvingo	14	35.7	0.0	0.0	7.1	14.3	0.0	7.1	0.0	14.3
Matabeleland North	10	50.0	10.0	10.0	0.0	50.0	10.0	20.0	0.0	10.0
Matabeleland South	10	50.0	10.0	10.0	0.0	30.0	10.0	30.0	10.0	30.0
Midlands	17	23.5	5.9	0.0	0.0	17.6	0.0	11.8	0.0	5.9
<i>National average</i>	<i>125</i>	<i>29.6</i>	<i>7.2</i>	<i>2.4</i>	<i>2.4</i>	<i>28.8</i>	<i>7.2</i>	<i>20.0</i>	<i>4.0</i>	<i>12.0</i>

### 8.2.2 Training and capacity of health workers in M&E

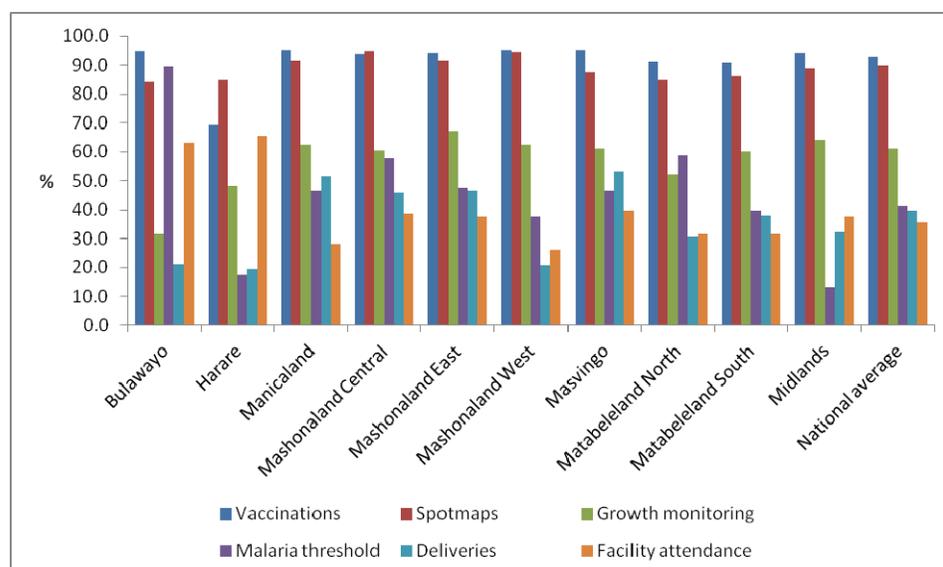
This assessment asked facilities to identify the number of health workers training on data management and the results show that very few health workers received training in this area. Among both Level 1 facilities and hospitals, 688 personnel were trained in data management compared 5,559 trained in PMTCT. There were no designated M&E officers at district and provincial levels although as already noted there are HMIS assistants and officers. M&E officers are found at national programmatic level. For details on supportive supervision as a component of effective M&E please refer to the section on support and supervision.

### 8.2.3 Utilisation of data

Decision making on health service management should be informed by collection of reliable data on types of health services provided, coverage, and categories of beneficiaries of those services, incidence and prevalence of diseases, disease outbreaks, and availability of human, financial and material resources to support the delivery of health services. Data has to be accurate, timely and complete, in order to guide health managers to effectively plan, implement, monitor and evaluate health services according to their level of responsibility.

Both Level 1 facilities and hospitals were asked if they displayed a number of graphs in their facilities in to relation service provision. This was to obtain some information as to whether routine data is being regularly analysed at a facility level. Amongst the Level 1 facilities, there was evidence that consolidated reports are generated. The most common reports were on EPI activities, growth monitoring as well as spot maps. Figure 48 below illustrates the types of graphs generated.

**Figure 48: Proportion of Level 1 facilities displaying consolidated reports at a facility by type, Dec 2011**



### ***8.3 Emergency preparedness and response plans***

Most (76%) hospitals reported having disease early warning systems in place. However, in Matabeleland North Province only 4 out of the 10 hospitals reported having such systems. In addition both Level 1 and hospital facilities were asked about availability of an emergency preparedness plan. Among the Level 1 facilities, 63.2% had an Epidemic Preparedness and Response (EPR) plan in place. This means that approximately 37% of facilities operating without epidemic preparedness plans may not be able to adequately manage emergencies such as natural disasters or epidemics. In Matabeleland North Province, a larger proportion of facilities, 57% did not have EPR plans in place.

Review of these plans is also important to ensure that plans remain relevant to the local context. Approximately 37% of facilities reported having reviewed their EPR plans within the previous six months from the date of assessment. This has implications for disease control and disaster mitigation. Lack of adequate preparedness for example, is cited as one of many contributing factors to the high mortality during the cholera epidemic experienced in Zimbabwe, 2008-2009 (Evaluation of the Health Cluster Response to Cholera Outbreak in Zimbabwe, 2009).

### ***8.4 Health Matters Magazine***

The MoHCW has a quarterly publication known as “Health Matters magazine”. Wide distribution of this magazine helps to keep staff updated on developments within the MoHCW and can be utilized to provide updates as well as being a platform for continuing education. Most (89%) Level 1 facilities, reported receiving this publication with an equal proportion indicating that they found the content useful.

#### **Summary of key findings**

- Vacancy rates for Health information officers were found to be 33% and for Health information assistants 18%.
- Among all Level 1 and hospital facilities only 688 personnel had been trained in data management.
- While Level 1 facilities reported relatively high completion rates for T5 reports, very few (32%) compiled facility status reports. Similarly hospitals reported submitting T5 forms in a timely fashion (81%) more often than the T9 reports (64%).
- 63% of Level 1 facilities had Epidemic Preparedness and Response plan in place but only 37% reported reviewing this on an annual basis.
- 89% of Level 1 facilities reported receiving a copy of Health matters and an equal proportion found the content useful.

## 9 Health Financing

### 9.1 Financing of the health services in Zimbabwe

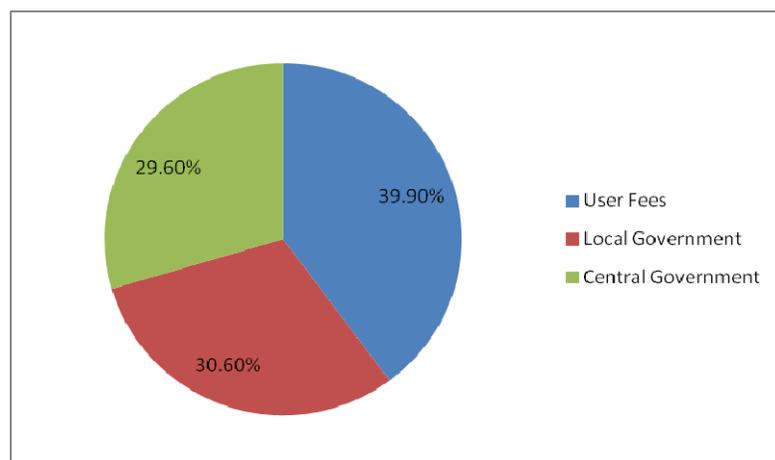
The Government of Zimbabwe has remained the major source of health financing in the public sector with taxation being the major source of revenue. The decline in the economic performance experienced from 2000 to 2008 affected health care financing in the country due to depleted revenue collection with high unemployment levels estimated at 80%. Zimbabwe currently spends 15 USD per capita on health, which falls far short of the globally recommended figure of 34 USD, which is the minimum, required to provide an essential health package (Health Transition Fund 2011).

#### 9.1.2 Sources of funding

In this assessment, both Level 1 facilities and hospitals were asked to indicate the three major sources of funding or income to support health service delivery.

Among Level 1 facilities, 39.9% indicated user fees as a major source of funding. Local government was cited by 30.6% as a source of funding. An almost equal proportion 29.6% indicated central government among the three major sources of funding. In addition to these, among Level 1 facilities, a fourth source of funding was reported to come from NGOs by 12% of facilities. The proportions reported however need to be treated with caution as no direct verification and validation was done at facility level. Figure 49 below illustrates the three major sources of funding reported on.

**Figure 49: Sources of major funding reported by Level 1 facilities, Dec 2011**



### 9.2 User Fees

The comprehensive user fee policy for public health facilities was introduced in January 2002. Provisions of this policy include:

- No fees to be charged at government rural health centre and rural district council clinics.

- No fees to be charged for maternity services.
- Free health services for children under 5 years.
- Free TB treatment in both public and private sector.
- Free treatment for pensioners.

It has been observed that the implementation of the user fee policy has been erratic and difficult to enforce with poor regulation. As a result some facilities charge user fees including those that are stipulated as exemptions in the policy.

User fee charges were assessed for the following services: outpatient (OPD), inpatient, ANC, labour and delivery, postnatal care. Many of these have already been reported under the relevant sections in this report but these are summarised in this section to give an overview.

**Figure 50: Proportion of Level 1 facilities charging user fees for selected services by Province, Dec 2011 (N=1250)**

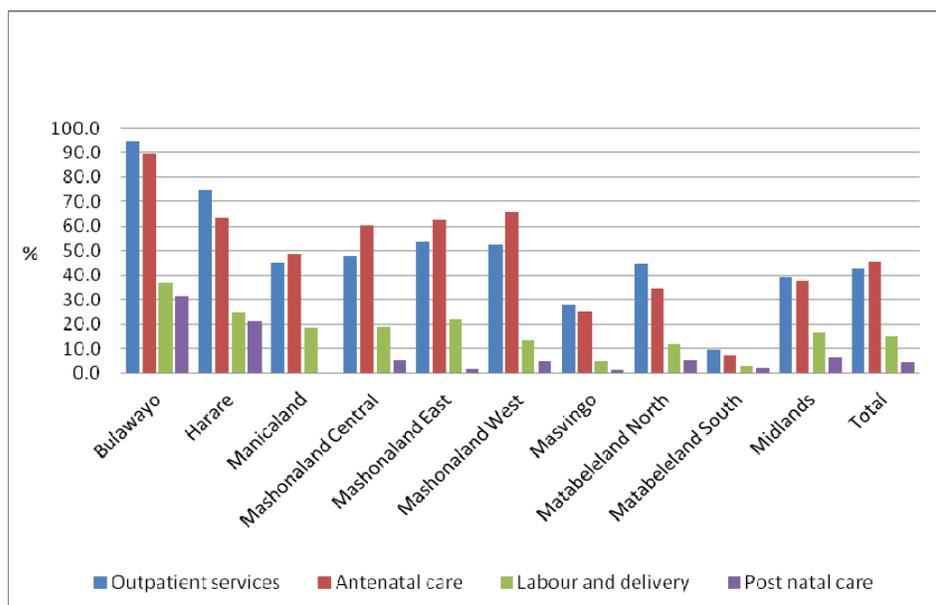


Figure 50 above shows that 40% of facilities routinely charge some form of user fees for outpatient and antenatal care services. Eighty four per cent of facilities in Bulawayo Province charged user fees while Matebeleland South had the least facilities charging user fees at 12%.

Although user fees may have a positive effect on health services delivery by generating revenue to finance health care, they can also have a negative effect and become a barrier to health service utilization especially among the poor subgroups of the population who cannot afford to pay. Both Level 1 facilities and hospitals were asked to indicate categories of patients exempted from paying user fees. Table 68 below shows exemptions of user fees among Level 1 facilities and hospitals. Among Level 1 facilities less than half (42.8%) reported waivering fees for children under 5 years. Approximately half (50.1%) exempted

those aged 65+ years from paying fees. However, it was noted that a relatively smaller proportion 36.6% waived user fees for vulnerable groups such as orphans.

Among hospitals, 72.8% indicated that people aged 65+ were exempted from paying for services. However, only 39.2% reported waivers for vulnerable groups such as orphans.

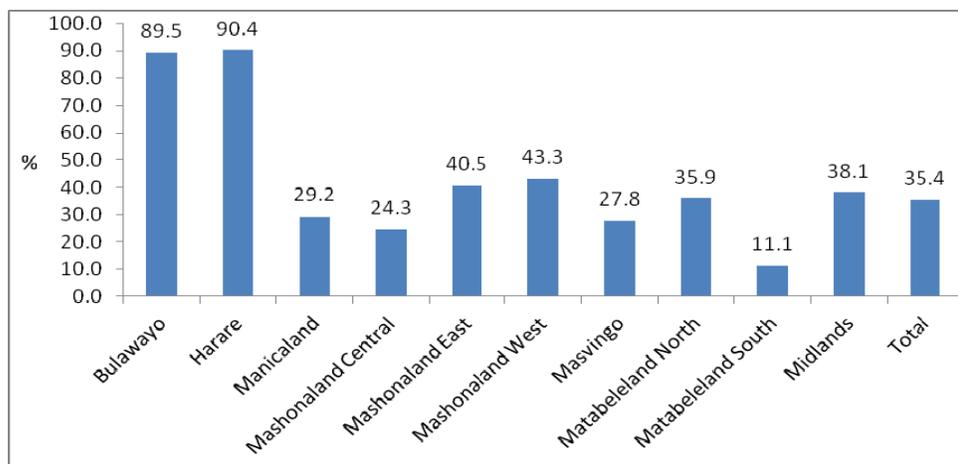
**Table 74: Proportion of facilities with exemptions of user fees among Level 1 facilities and hospitals by province, Dec 2011**

Province	% of facilities reporting exemption of fees for Widows		% of facilities reporting exemption of fees for Orphans		% of facilities reporting exemption of fees for Aged 65 years+		% of facilities reporting exemption of fees for Disabled		% of facilities reporting exemption of fees for Children under 5	
	N=1250	N=125	N=1250	N=125	N=1250	N=125	N=1250	N=125	N=1250	N=125
Bulawayo	26.3	0.0	57.9	0.0	73.7	66.7	57.9	0.0	68.4	33.3
Harare	30.8	16.7	30.8	33.3	55.8	100.0	46.2	50.0	50.0	16.7
Manicaland	24.1	22.7	34.7	31.8	48.1	63.6	47.2	40.9	44.0	18.2
Mashonaland Central	38.7	16.7	42.3	50.0	59.5	83.3	48.6	50.0	37.8	0.0
Mashonaland East	39.9	11.8	46.4	23.5	53.0	88.2	56.0	64.7	45.8	11.8
Mashonaland West	34.0	28.6	40.4	64.3	56.7	64.3	51.1	78.6	39.7	7.1
Masvingo	21.6	7.1	30.2	42.9	38.9	78.6	41.4	35.7	36.4	0.0
Matabeleland North	14.1	20.0	21.7	30.0	39.1	60.0	32.6	40.0	39.1	0.0
Matabeleland South	23.1	20.0	26.9	40.0	30.6	70.0	29.6	30.0	28.7	30.0
Midlands	28.7	35.3	41.4	47.1	61.9	64.7	54.7	76.5	55.2	5.9
<i>National average</i>	<i>28.5</i>	<i>20.0</i>	<i>36.6</i>	<i>39.2</i>	<i>50.1</i>	<i>72.8</i>	<i>46.8</i>	<i>52.0</i>	<i>42.8</i>	<i>10.4</i>

Health facilities, charging for any services, should clearly display their fees to improve accountability, reduce the likelihood of corruption and help clients calculate the costs they will incur in seeking services and plan accordingly. It is Government policy to accept patients who are unable to pay in public facilities and a waiver mechanism is in place.

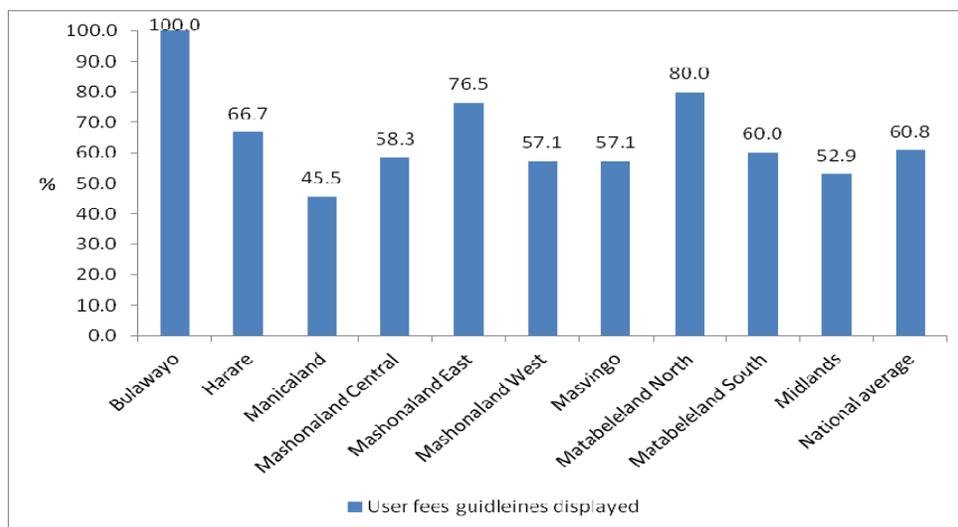
Both Level 1 facilities and hospitals were asked to indicate if written guidelines on user fees were present and displayed. Figure 51 reflects the proportions of Level 1 facilities displaying guidelines on user fees.

**Figure 51: Proportion of Level 1 facilities displaying guidelines on user fees, Dec 2011**



On average, 35.4% of Level 1 facilities reported displaying guidelines on user fees. The majority of facilities in the urban areas of Bulawayo and Harare displayed guidelines on user fees. This however was less frequently done in the mainly rural Provinces. For example in Matabeleland North Province only 11.1% of the facilities displayed these guidelines. Figure 52 reflects the proportions of hospitals displaying guidelines on user fees.

**Figure 52: Proportion of hospitals displaying guidelines on user fees, Dec 2011**



Among hospitals a higher proportion at 61% reported displaying user fees guidelines.

#### **Summary of key findings**

- 40% of Level 1 facilities indicated user fees as a major source of funding.
- 40% of Level 1 facilities routinely charged some form of user fees for ANC and outpatient services and fees were more likely to be charged in Harare and Bulawayo.
- User fees at all facilities were most likely to be waived for the elderly and least likely for widows and orphans.
- On average 35% of Level 1 facilities reported displaying of guidelines on user fees compared to 61% of hospitals.

## **10. Governance and Leadership**

### **10.1 Management of Human Resources**

Human Resources are one of the pillars for health systems strengthening and the management of the health work force is critical to the provision of quality services. According to the MoHCW, job descriptions for all salaried cadres within the Ministry should be in place. The importance of conducting performance appraisals is to determine performance at individual and organisational level in order to achieve improved service delivery in the public service. The MoHCW conducts annual performance appraisals and this should normally be linked to promotion, further training, transfer or even demotion in the case of poor performance.

This study assessed whether staff at health facilities had job descriptions, work plans and staff development plans in place. Out of the 1,250 Level 1 health facilities, 1,225 (98%) responded to the question. Of these, 73.5% reported that all health workers had written job descriptions. However, the study did not assess familiarity of staff with the provisions of their specific job descriptions nor verify the results.

According to MoHCW HR practices, facilities are meant to send in staff development plans for approval by the human resources directorate. Table 75 shows that almost 40% of Level 1 facilities did not have staff development plans in place, while in 24.4% some reported that their staff had these plans. If staff are not capacitated to remain up-to-date with current practices, the quality of care may be compromised.

**Table 75: Number of Level 1 facilities that indicated the availability of Staff Development Plans, Dec 2011 (N=1225)**

Province	Are there staff development plans?			Total
	Answered 'yes, for all'	Answered 'yes, for some'	Answered 'none in place'	
Bulawayo	10	5	4	19
Harare	26	22	4	52
Manicaland	73	51	92	216
Mashonaland Central	58	24	29	111
Mashonaland East	58	45	65	168
Mashonaland West	38	39	64	141
Masvingo	55	34	73	162
Matabeleland North	35	14	43	92
Matabeleland South	41	23	44	108
Midlands	56	46	79	181
<b>Total</b>	<b>450</b>	<b>303</b>	<b>497</b>	<b>1250</b>

Performance appraisal of staff is important in setting and maintaining standards and if done professionally is one way of enhancing staff morale and retention. According to the responses from Level 1 facilities, staff appraisals were carried out approximately twice per year. However, the assessment did not have a follow up question that could have given a national picture of the number of facilities that conducted staff appraisals twice a year. Only 19% of facilities reported that staff appraisal was linked to salary or any other incentive. Bulawayo city was an exception in that 78.9% of the facilities reported that staff appraisals were linked to salaries and incentives. This situation presents a learning opportunity on how to link staff appraisal with salaries and incentives considering resource limitations in the current operating environment. The practice of linking appraisals to remuneration maybe very difficult to implement owing to limited budget and human resources.

### **10.2 Financial controls used by facilities**

Financial management among health facilities is governed by the Public Finance Management Act Chapter 22:19 of 2009. This Act is implemented through the Public Finance Management System for disbursements, controls and generating expenditure reports. The system is meant to be operational up to the district level of care. Procurement is guided by the Procurement Act, which is based on a tender system.

Human resources for the efficient management of financial systems at Level 1 facilities do not exist because at this level, personnel are not expected to directly manage resources. In this study, hospitals were therefore asked to indicate the approved establishment and number of posts filled for cadres involved within the accounting and administration departments. Table 76 below shows the different cadres in post against the establishment.

**Table 76: Number of Administration and Financial Accounting posts versus establishment at a hospital level by Province, Dec 2011**

Province	Nos. of Hospitals	Hospital Administrator		Executive Officer		Accountant		Accounting Assistant	
		App	Filled	App	Filled	App	Filled	App	Filled
Bulawayo	3	1	1	3	1	5	4	80	65
Harare	6	4	5	0	1	4	4	45	67
Manicaland	22	7	8	7	3	5	6	16	11
Mashonaland Central	12	8	4	13	11	7	5	25	24
Mashonaland East	17	9	7	10	7	7	6	19	16
Mashonaland West	14	11	7	8	4	6	4	17	13
Masvingo	14	8	6	8	8	6	6	13	14
Matabeleland North	10	7	3	1	0	6	3	12	10
Matabeleland South	10	8	2	4	1	7	6	18	13
Midlands	17	11	9	8	7	9	9	23	20
<b>Total</b>	<b>125</b>	<b>74</b>	<b>52</b>	<b>62</b>	<b>43</b>	<b>62</b>	<b>53</b>	<b>268</b>	<b>253</b>

From the reports, on average 30% of hospital administrator and executive officer posts remained unfilled at hospitals. Shortfalls in the numbers of hospital accountants and assistants were less of a problem with vacancy rates of 15% and 5% respectively.

To increase accountability of funds collected from hospital user fees, hospitals have put in place checks and balances to curtail misuse and theft. Table 77 below shows the different mechanisms in place for both Level 1 facilities and hospitals to ensure accountability of user fees collected.

**Table 77: Proportion of Level 1 facilities and hospitals with various types of financial monitoring systems in place, Dec 2011**

Province	% Reporting financial records produced		% Reporting periodic audit visits		% With other financial monitoring systems e.g. audit meetings	
	N=1250	N=125	N=1250	N=125	N=1250	N=125
Bulawayo	47.4	100.0	63.2	100.0	0.0	0.0
Harare	23.1	50.0	38.5	50.0	1.9	16.7
Manicaland	13.9	86.4	17.1	59.1	1.9	4.5
Mashonaland Central	45.0	91.7	26.1	83.3	6.3	8.3
Mashonaland East	38.1	100.0	30.4	64.7	6.5	23.5
Mashonaland West	24.8	92.9	24.1	64.3	5.0	14.3

Masvingo	13.6	85.7	18.5	92.9	1.9	28.6
Matabeleland North	20.7	100.0	17.4	70.0	3.3	10.0
Matabeleland South	13.0	90.0	12.0	90.0	4.6	30.0
Midlands	32.6	82.4	16.6	58.8	3.9	0.0
National average	25.1	88.8	21.8	70.4	3.8	13.6

\*Having financial monitoring systems is dependent on facility charging user fees

As reflected in Table 71 across the country, 25.1% of Level 1 health facilities had financial records, 10.3% had accounting procedures in place, 15.6% financial reports and 21.8% had periodic audits conducted. Similarly among hospitals the majority 88.8% reported that they had financial records, 70.4% had periodic auditing visits and other monitoring mechanisms were reported by 13.6%.

### ***10.3 Facility level planning and reporting***

Good management and leadership are critical pillars for health systems strengthening. This assessment showed that although a high proportion of facilities conduct routine meetings these may not be guided by a plan, as only 65% of facilities reported having an annual work plan in place. Although a higher percentage of Level 1 facilities reported having a work plan in place, a lower percentage 57% reported undertaking quarterly reviews of work plans. Again this is a subjective measurement, as responses were not verified during the assessment. Nationally 76.8% of Level 1 facilities indicated producing annual reports. Variations were noted among the provinces with only 45.4% of Level 1 facilities in Mashonaland West reporting producing an annual report. Among hospitals, 83.2% reported having an annual work plan and 96% reporting producing an annual report.

### ***10.4 Support and Supervision***

Ongoing supervision is an important component towards the provision of quality services in healthcare settings. Supportive supervision promotes effective two-way communication between the different levels of care. Both Level 1 facilities and hospitals were asked to report on how many supervisory visits were made by a higher level official over the course of a year. Among Level 1 facilities, District Health Executives made an average of seven visits to each facility in the year 2010. Other supervisory visits were made from national programme managers.

Table 78 below illustrates the average number of support and supervision visits made to Level 1 facilities by members of the DHE and national programme managers of the different programmes within the MoHCW. On average members from the DHE visited facilities 7 times a year. From the national level, EPI and HIV programme managers made the most visits to Level 1 facilities. This is a positive finding as supportive supervision strengthens relationships between different levels of care and helps in the identification and resolution of problems. The least number of visits were made by epidemiology and disease control as well as IMNCL.

**Table 78: Average number of support and supervision visits made to Level 1 facilities by Province, Jan-Dec 2010**

Province	Nos. of Level 1 facilities	Average nos. of visits from DHE	Average nos. of visits from Reproductive Health	Average nos. of visits from HIV and AIDS unit	Average nos. of visits from Epidemiology and Disease control	Average nos. of visits from Malaria	Average nos. of visits from TB	Average nos. of visits from EPI	Average nos. of visits from IMNCI
Bulawayo	19	0.7	0.3	0.6	0.0	0.3	0.9	0.6	0.0
Harare	52	5.3	0.9	1.4	0.1	0.0	0.9	1.0	0.0
Manicaland	216	8.1	0.4	1.3	0.1	0.7	0.8	2.4	0.5
Mashonaland Central	111	4.5	1.1	1.7	0.4	1.5	1.5	1.9	0.2
Mashonaland East	168	9.6	0.3	0.9	0.1	0.6	0.4	1.5	0.1
Mashonaland West	141	4.6	0.3	0.8	0.1	0.8	0.6	2.4	0.0
Masvingo	162	8.7	0.2	0.7	0.0	0.6	0.6	2.1	0.0
Matabeleland North	92	7.2	0.6	4.2	0.1	0.8	1.0	2.1	0.1
Matabeleland South	108	8.9	0.5	1.3	0.2	1.2	1.1	2.0	0.3
Midlands	181	7.6	0.5	2.7	0.1	1.3	0.9	3.0	0.2
<b>National Average</b>	<b>1,250</b>	<b>7.4</b>	<b>0.5</b>	<b>1.6</b>	<b>0.1</b>	<b>0.8</b>	<b>0.8</b>	<b>2.2</b>	<b>0.2</b>

Among hospitals, there was an average of four visits made from a higher level such as Provincial Medical Director or National MoHCW departments. Manicaland Province reported the highest number of visits at 128, which translates to about 6 visits within that year, 2010.

Both Level 1 facilities and hospitals were also asked to indicate any changes that were effected following such visits. Among the hospitals, 78% reported that changes had been effected owing to support and supervision visits. However, the assessment did not inquire into documentation to support the findings and the quality of the supervisory visits was not assessed.

#### **Summary of key findings**

- 74% of Level 1 facilities reported that all facility workers had written job descriptions but only 40% had staff development plans in place.
- According to Level 1 facilities, staff appraisals were carried out twice a year but few linked this to salary adjustments or incentives.
- At a hospital level on average there were staff vacancy rates for hospital administrators and executive officers of 40%.
- Among hospitals, 83.2% reported having an annual work plan compared to only 65% of Level 1 facilities.
- On average, 7 visits were made to each Level 1 facility with national officers from the EPI and HIV units visiting more frequently than other departments.
- Among hospitals an average of four supervisory visits were made to a facility from a higher level.
- Encouragingly among the hospitals reporting, 78.4% reported that changes had been effected owing to support and supervision visits.

### ***10.5 Community Outreach and Collaboration***

The social entrepreneurship between health facilities and communities has been the pillar of primary health care. Communities have become a valuable resource in the provision of health care along the continuum of care. Community outreach and collaboration are important vehicles for bringing both preventive and curative services to communities especially in hard to reach areas. Participation by individuals, communities and special groups in determining their health priorities forms a basis for successful implementation of health programmes and interventions.

### 10.5.1 Health Centre Committees

Functional Health Centre Committees (HCCs) can be one indicator of community participation in the provision of health care. In this assessment, 78.2% of Level 1 facilities reported having a health centre committee in place. However a smaller proportion of facilities from Harare and Bulawayo reported having health centre committees in place with 32.7% and 5.3% respectively.

Table 79 shows the proportion of Level 1 facilities with a designated community nurse, health centre committee (HCC), records and health centre committee bank account in place.

**Table 79: Proportion of Level 1 facilities with a designated community nurse, health centre committee, records and health centre committee bank account in place by province, Dec 2011**

Province	Nos. of Level 1 facilities	% with a designated community nurse	% with a HCC	% with written records of HCC	% where HCC has bank account
Bulawayo	19	68.4	5.3	0.0	0.0
Harare	52	59.6	32.7	100.0	0.0
Manicaland	216	22.2	82.4	92.7	6.2
Mashonaland Central	111	26.1	83.8	100.0	15.1
Mashonaland East	168	14.9	89.9	94.7	19.9
Mashonaland West	141	29.8	80.9	93.0	7.0
Masvingo	162	12.3	90.1	91.8	2.1
Matabeleland North	92	22.8	76.1	90.0	7.1
Matabeleland South	108	37.0	58.3	92.1	1.6
Midlands	181	30.9	79.6	84.0	12.5
<i>National Average</i>	<i>1,250</i>	<i>26.0</i>	<i>78.2</i>	<i>92.1</i>	<i>9.2</i>

A larger proportion, 92.1%, reported holding HCC records than indicated the existence of HCCs. This needs further detailed analysis to understand the higher reporting in this area, which will be carried out at a later stage. Of note however was the low proportion, 9.2%, of HCCs that hold a bank account. This preliminary finding does seem to indicate that HCCs currently play a small role in the direct management of financial resources for the health centre. Only 12.8% of facilities reported that the HCC chairperson alone was responsible for making decisions on finances. Of note is that where finances were concerned, 67% of facilities indicated that the chairperson and the entire committee made decisions. This is a positive finding as it enhances transparency and ownership in decision making.

### 10.5.2 Community health workers and community meetings

Community health workers provide a vital link between health care facilities and the communities they serve. They draw on community connections to create links and synergies between health systems and communities. The majority of the community health workers are made up of the village health worker. Nationally a target of 1 village health worker per 100

families has been set. Their roles include mobilisation for health activities in the community, preventative roles such as hygiene and sanitation, family planning, identification of community health problems. They also have a role in communicating health problems to a health facility.

In this assessment, Level 1 facilities were requested to indicate if they had a register of community health workers as well as the numbers by type of community health workers working in the vicinity. Eighty four per cent of Level 1 facilities had a register of community health workers. Similarly for hospitals, 72.8% reported that they had a register of community health workers. None of the hospitals from Harare and Bulawayo however reported having such a register.

A nurse designated for community outreach work carries out the following functions:

- Participates in community health meetings
- Trains, supervises and supports community health workers
- Promotes specific programmes such as EPI and WASH

Of Level 1 facilities, 26% had a nurse designated for community outreach work. Among the hospitals more than half 58.4% had a designated nurse for outreach. The exception was in Harare and Bulawayo where none of the hospitals reported having a designated community nurse.

To enable travel for outreach work both Level 1 facilities and hospitals were asked to indicate the availability of a functional outreach vehicle. Level 1 facilities would normally not have an outreach vehicle at their direct disposal as they rely on the district to provide this. Less than half (42.4%) of the hospitals reported a functional outreach vehicle. Some of the common methods of travelling to outreach points mentioned in the assessment included walking, motorcycle and bicycle.

The assessment also asked both Level 1 facilities and hospitals to report on both official and informal meetings that had been conducted with the community over the course of 2010. Table 80 below illustrates that both official and informal meetings were on occasions conducted with the community by both Level 1 and hospital facilities. Sixty per cent of Level 1 facilities conducted official meetings with communities. A smaller proportion (34%) reported holding informal meetings.

Among hospitals, 47.2% indicated that they conducted official meetings with communities while 37.6% had conducted informal meetings.

**Table 80: Proportion of Level 1 facilities and hospitals that conducted official and informal meetings with the community in by Province in 2010**

Province	% of facilities holding Official meeting with communities		% of facilities holding Informal meetings with communities	
	N=1250	N=125	N=1250	N=125
Bulawayo	15.8	66.7	26.3	66.7
Harare	82.7	33.3	59.6	33.3
Manicaland	62.5	54.5	44.0	40.9
Mashonaland Central	58.6	33.3	27.9	33.3
Mashonaland East	56.5	47.1	39.3	47.1
Mashonaland West	55.3	57.1	26.2	50.0
Masvingo	60.5	42.9	29.6	35.7
Matabeleland North	72.8	50.0	22.8	20.0
Matabeleland South	62.0	40.0	28.7	10.0
Midlands	55.2	47.1	33.1	41.2
<b>National Average</b>	<b>60.1</b>	<b>47.2</b>	<b>34.0</b>	<b>37.6</b>

### ***10.5.3 Mechanisms for patient feedback***

Currently there is no standard policy that guides the setting of standards and monitoring of the quality of care in public health institutions. Patient feedback on services provided can be one strategy to monitor and improve the quality of care provided at a health facility. The MoHCW is in the process of setting up a department of quality assurance and results from the NHIFA may support mechanisms to be developed to monitor patient satisfaction of services received.

To assess the quality of care provided by both Level 1 facilities and hospitals, respondents were asked to indicate a system or procedure for determining patients' opinions on quality of services they provided. Results showed that 72.6% of facilities indicated having a mechanism(s) in place where patient opinions on the services provided could be reported to staff. However, only 52% reported having procedures in place to *verify* client opinions of the services provided. This means that a significant number of facilities are missing out on opportunities for feedback, which would help to identify areas for service improvement. There were urban versus rural disparities in the mechanisms for providing feedback. Bulawayo and Harare City reported the highest proportion of facilities with feedback mechanisms, at 89.5% and 92.3% respectively. In contrast Matabeleland South Province reported the lowest proportion of facilities with a feedback mechanism in place at 65.7%.

In addition, 60% of Level 1 facilities reported discussing service quality issues during staff meetings. However, this is self-reported data and there was no verification of client

satisfaction levels although indications of this are provided in the second part of this report under the 'Equity and Quality of care' component.

Of the client feedback mechanisms in place 25.3% of facilities make use of suggestion boxes with a minority (3.4%) using client survey forms to assess patient views on services provided. There was however significant variation in use of suggestion boxes. For example all Level 1 facilities in Bulawayo make use of suggestion boxes, while only 11% in Matabeleland North Province use this facility. Use of suggestion boxes and client surveys are more objective ways of assessing quality of care from the client perspectives and efforts should be made to make this part of standard practice in all public health care institutions.

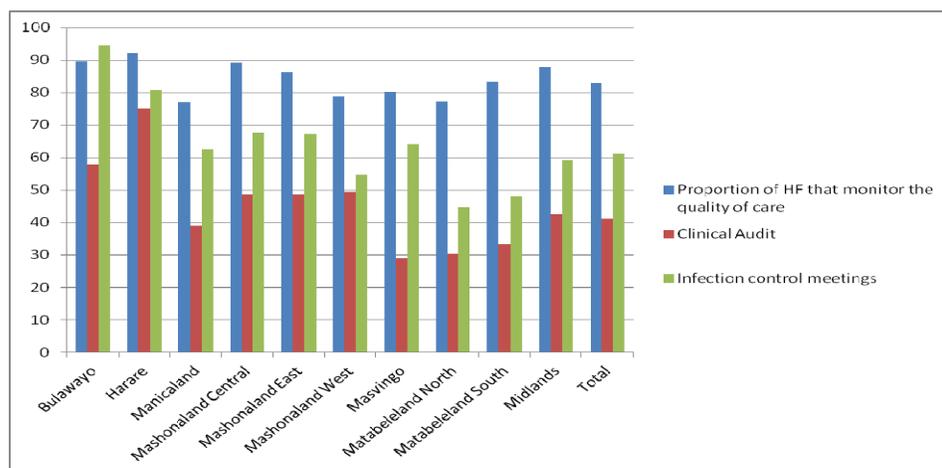
Among hospitals, 70.4% reported that they had a procedure for reporting on client opinions. More than half 60.4% reported having suggestion boxes while 21.6% used client survey forms. However, in some provinces for example, Matabeleland North and South only half of the hospitals reported having a procedure for reporting client opinions.

#### ***10.5.4 Clinical Audits***

Hospitals and clinics should routinely monitor patient outcomes through different types of clinical audits. The number of facilities carrying out maternal audits has already been highlighted under the maternal service delivery section. In addition, Level 1 facilities and hospitals were asked to indicate what other quality assurance and improvement tools were being used to report on adverse events in order to improve service provision.

Figure 53 gives an overview of the types of quality assurance processes being carried out at Level 1 facilities. Although the majority of facilities, 82.9% indicated routinely monitoring the quality of care, the data collected is somewhat confusing. For example only 41% of Level 1 facilities reported conducting clinical audit meetings on a regular basis with only 29% of facilities in Masvingo doing the same. There was also variation in the proportion of facilities conducting infection control meetings. For example, in Bulawayo Province 94.7% of Level 1 facilities reported conducting infection control meetings, while only 44.6% of those in Matabeleland North conducted such meetings. A relatively small proportion 32.2% reported conducting peer review meetings. However, this question on peer review might have been misinterpreted and so needs further verification.

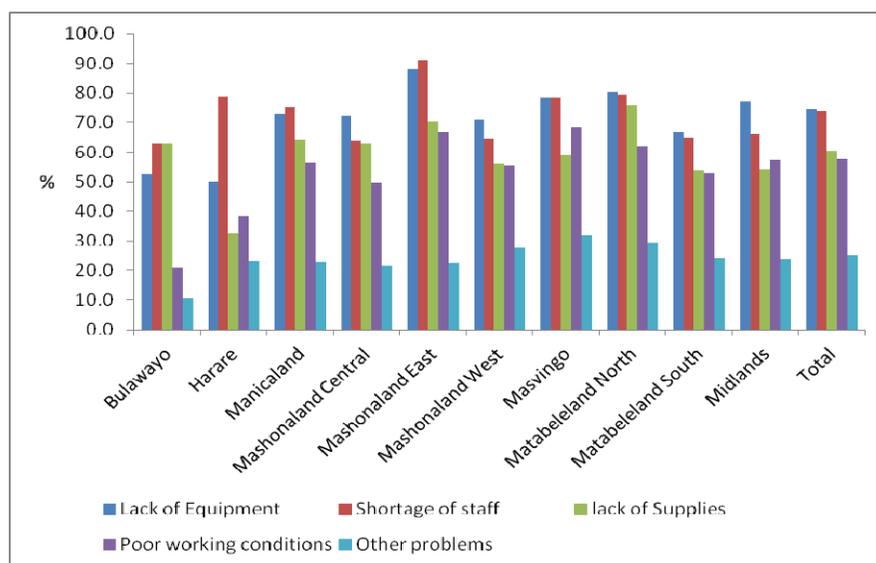
**Figure 53: Indicators of self-assessment of quality of care by Level 1 facilities by Province, in 2010**



**10.5.5. Challenges in the operating environment**

In this assessment, staff working at both Level 1 facilities and hospitals was asked to indicate the most difficult problems encountered in their duty of care. Among Level 1 facilities staff generally indicated the shortage of staff and supplies as being the major problems faced. Seventy five percent of Level 1 facilities also reported that shortage of equipment was a major problem. An almost similar proportion of hospitals reported staff shortages as a major problem, state by 73.7%. Figure 54 below illustrates major problems encountered by staff at Level 1 facilities by Province.

**Figure 54: Common problems encountered by staff at Level 1 facilities by Province, Dec 2011**



### **Summary of key findings**

- 78% of Level 1 facilities reported having a health centre committee in place. However a smaller proportion of facilities from Harare and Bulawayo reported having health centre committees in place with 32.7% and 5.3% respectively.
- More Level 1 facilities (84%) had a register of community health workers in place compared to only 72.8% of hospitals.
- Official meetings with the community were more likely to be held by Level 1 facilities (60%) compared to by hospitals (47%).
- A high proportion (73%) of Level 1 facilities and 70% of hospitals reported having a mechanism in place where client feedback could be ascertained. However mechanisms used to obtain feedback varied greatly between facilities.
- 83% of facilities reported routinely monitoring the quality of care although the processes of doing this varied with only 41% of Level 1 facilities conducting clinical audit meetings on a regular basis.
- Shortages of staff were reported as being one of the greatest challenges identified by over 70% of both Level 1 and hospital facilities, with lack of equipment being the second mostly commonly cited problem.

## **11. Consumables**

To ensure provision of safe and high quality services, health facilities need to maintain adequate stocks of essential consumables. In this assessment Level 1 facilities and hospitals were asked to report on stock outs of selected consumables in the previous three months preceding the assessment. A select number of these are presented in Table 81 below, based on their relevance to maternal care. However data on stock outs of other commodities was also collected and the MoHCW has this additional information on request.

Among Level 1 facilities, 7.3% reported stock outs of cannulas with few (4.5%) also reporting problems with supplies of suturing materials. A greater proportion of facilities 13.7% reported stock outs of delivery packs which contain the essential items for a normal delivery. The consumable most out of stock was a sanitary towel, which was reported by 45.5% of Level 1 facilities.

**Table 81: Proportion of Level 1 facilities reporting stock outs in the previous 3 months for selected consumables by Province, Dec 2011**

Province	Level 1 Facilities	% Of facilities with stock outs of Cannulas	% Of facilities with stock outs of IV fluids	% Of facilities with stock outs of IV sets	% Of facilities with stock outs of Delivery Packs	% Of facilities with stock outs of Dressing Packs	% Of facilities with stock outs of Sanitary Pads	% Of facilities with stock outs of Suturing materials	% Of facilities with stock outs of Syringes and disposable needles
Bulawayo	19.	0.0	21.1	0.0	5.3	10.5	36.8	0.0	5.3
Harare	52	0.0	9.6	1.9	1.9	3.8	9.6	1.9	1.9
Manicaland	216	9.3	16.7	14.4	14.4	13.9	49.5	5.6	6.5
Mashonaland Central	111	9.9	13.5	11.7	9.0	7.2	47.7	7.2	5.4
Mashonaland East	168	3.6	6.5	11.3	14.3	14.9	41.7	4.2	6.0
Mashonaland West	141	7.8	18.4	14.9	15.6	16.3	53.9	3.5	3.5
Masvingo	162.	9.3	13.0	11.1	18.5	14.2	50.0	2.5	6.8
Matabeleland North	92	8.7	14.1	10.9	14.1	17.4	50.0	3.3	8.7
Matabeleland South	108	5.6	3.7	5.6	13.0	15.7	46.3	4.6	5.6
Midlands	181	7.7	11.0	7.2	13.8	14.4	40.9	6.1	5.0
<b>National average</b>	<b>1250</b>	<b>7.3</b>	<b>12.4</b>	<b>10.6</b>	<b>13.7</b>	<b>13.8</b>	<b>45.5</b>	<b>4.5</b>	<b>5.7</b>

**Summary of key findings**

- Among Level 1 facilities, few stock outs for cannulas (7.3%), and suturing materials (4.5%) were reported.
- Stock outs of delivery packs were reported by 13.7% of Level 1 facilities.

## **PART B:**

# **Equity and Quality of Care component of the NHIFA:**

## **Methodology, Findings**

**and**

## **Recommendations**

## **1 Introduction to the Equity and Quality of Care Component**

### ***1.1 Study design for the Equity and Quality of Care component of the NIHFA***

The Equity and Quality of Care (E&QOC) components of the National Integrated Health Facility Assessment were designed to complement the results presented in the previous sections from the health facility assessment survey. The subsequent components of the study however used different methodologies to solicit additional information to support answering the overall questions posed from the outset of the NIHFA, that are outlined in the introductory section of this report.

The overall objectives of this component of the study therefore remained the same and were:

1. To obtain information on functionality, coverage and access to health services at public and private health facilities in Zimbabwe, with a particular focus on Maternal, Newborn and Child Health services.
2. To assess availability, distribution and functional status of available human resources, medical supplies, equipment and infrastructure necessary for high coverage of quality health services.
3. To assess the quality of Maternal, Newborn and Child health services provided by health facilities through assessment of knowledge and competency.
4. To make recommendations and evidence-based plans for targeting support needed based on data obtained.

While this component of the assessment provides information to address Objectives 1 and 2, it is more heavily focused on Objectives 3 and 4, providing critical information on the equity and quality of care.

Similar to the overall NIHFA design, the process of developing the methodology for the Equity and Quality of Care (E&QOC) component was led by the MOHCW in consultation with national technical partners and the appointed consultant team.

In summary, there are two parts of the E&QOC component which for ease of understanding, are referred to as: 1) the Equity and Quality of Care Survey; and 2) the Quality of Care observation survey. It is necessary to distinguish these two as different methodologies were used, which are explained in more detail in the subsequent chapters. For the E&QOC survey, exit interviews were undertaken with clients as well as in-depth interviews with health workers. This was in contrast to the

QOC observation survey, where observations were made of clinical practices used in the delivery of MNCH services. However both components of the E&QOC component used the same overall sampling framework for the facilities included, although each distinct component used different sampling techniques to identify clients and health workers.

## ***1.2 Overall Sampling framework for the facilities included in the E&QOC component of the NIHFA***

The overall sampling plan for choosing the number of facilities that were included in the Equity and Quality of Care (EQOC) component of the NIHFA, was based on the guiding principles from the “Monitoring Emergency obstetric Care: A hand Book” developed by WHO, UNFPA, UNICEF and Columbia University AMDD (Averting Maternal Death and Disabilities) where a minimum of 30% of public health facilities is recognized as being acceptable. The inclusion of a large number of facilities from the outset was based on the need to be able to generalise results at a national level, and infer differences (where they exist) between the different levels of tertiary, secondary and primary care.

A sample size of 309 health facilities was agreed upon which is approximately 22% of all facilities in country. Out of the 309 health facilities selected, 53 were purposively selected including all central hospitals, all provincial hospitals, all district hospitals in the 47 districts and three private hospitals that included Hippo Valley, Triangle and Wankie Colliery. The purpose of including the not for profit facilities was more a way of highlighting lessons learnt from these differently managed institutions. Ten clinics from Harare and Bulawayo were also purposively sampled to provide an urban perspective.

Stratified random sampling with probability proportional to the number of facilities per stratum was used to select the health facilities (n=256) in the rural hospital, municipal hospital, mission hospital, clinic and rural health center category. Proportional allocation was used to determine the number of health facilities to be sampled from each type of facility and the number of facilities to be sampled from each province. The final breakdown of types of health facilities included in the EQOC component is outlined in Table 1 below.

**Table 1: Sampling matrix for Equity and Quality of Care Study Component**

<b>Nos. of Districts selected</b>	<b>District level hospitals per district</b>	<b>RHCs per District</b>	<b>Total central and Provincial hospitals</b>	<b>Total primary health units - Harare &amp; Bulawayo</b>	<b>Large not-for-profit private hospitals</b>	<b>Total # of facilities</b>
47	1	5	14	10	3	309

Given that different methodologies were used to carry out this component of the NHIFA, the subsequent sections of this report is further sub-divided in two. The first section details the specific methodology, data analysis and results from the Equity and Quality of Care Survey followed by a similar outline for the Quality of Care observations that were undertaken.

## Equity and Quality of Care Survey

### 1 Overview

The Ministry of Health and Child Welfare has identified and prioritised mobilisation and re-investment of financial, human and material resources and; the efficient and equitable use of these invariably limited resources, as a broad strategy for reversing the downward trend in health indicators and improve the quality of health care in Zimbabwe. In view of the foregoing, the extent of the decline needed to be qualified by assessing effects on equity in accessing existing services especially by the lowest income groups of the population. The results would then enable policy makers and program planners at the Ministry of Health and Child Welfare to develop and refine evidence-based strategies to halt and reverse this trend. The equity and quality of care survey component therefore whilst speaking to the broad overall objectives of the NIHFA, focuses on understanding access and utilisation of health services in rural districts of Zimbabwe

### 2 Methodology

#### 2.1 Sampling

The overall sampling framework for the EQOC survey has already been described above and 309 hospitals were included in the sample.

##### A. Sampling of health workers

Two health workers were selected from each facility by following the algorithm presented in figure 1, but only if there were more than two clinical health workers. If there were only two health workers on the day of survey, then they were automatically selected.

##### B. Sampling of clients

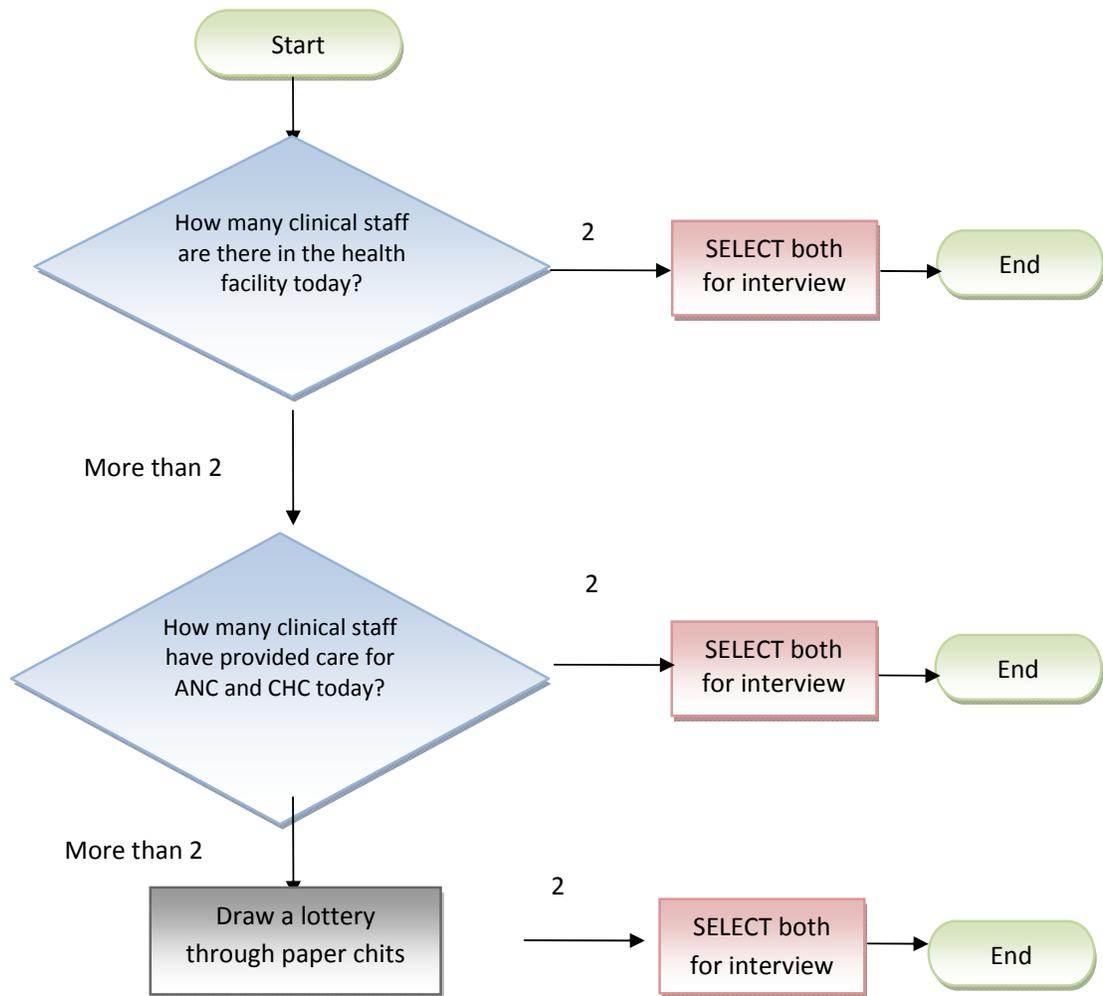
Clients were selected through a systematic random sampling method. The sampling interval was calculated from the caseload as recorded in the registers for the particular service (e.g. ANC and child health care) for the same day of the previous week.

#### 2.2 Sample size

The study protocol had proposed that six antenatal cases (ANC), six child health care (CHC), and two health workers per health facility would be interviewed giving a total of 1854 ANC, 1854 CHC beneficiaries, and 618 health workers for the whole study. In total, 1864 ANC, 1865 CHC, and 597 health workers were interviewed. The required number of health worker interviews could not be achieved as a few of the

facilities did not have two staff on duty on the day of the survey. There were no refusals to participate in the study.

**Figure 1 Algorithm for selection of Health Worker**



### 2.3 Data Collection Instruments

There were three separate data collection instruments: one for the health workers; and the other two for the exit interviews for women receiving antenatal care and carers accessing under five children’s services. All tools were pre-tested prior to their use (see below). A summary of the content of each instrument and various sections are described below.

### **2.3.1 Health Worker Instrument**

The following sections were included in the health worker questionnaire:

- a. *General Information*: This section collected basic demographic information, data on the health worker's position, experience and responsibilities.
- b. *Training*: This section collected data on the health worker's training in key health service areas in the last year or more, as well as training needs.
- c. *Satisfaction*: This section collected data on the health worker's satisfaction related to various elements of their working conditions.
- d. *Motivation*: This section collected data on the health worker's motivation related to various elements of their working conditions.
- e. *Knowledge*: This data was a key component for the quality of care analysis as it measures various dimensions of the health worker's knowledge on maternal and child health service delivery. The first part measured knowledge through case scenarios, or vignettes, while the second part measured knowledge on specific subject matter.

### **2.3.2 Client Exit Interview Instrument**

The following sections were included in each of the two client exit interview (antenatal care and children under five) questionnaires:

- a. *General Information*: This section collected data on the health facility, the education level and marital status of the patient (or the client's caretaker).
- b. *Treatment and counselling*: This section collected data that is crucial to the quality of care analysis. This data reflected the efforts made by providers during the maternal and child health consultations. It included a checklist of important questions to be asked, examinations and lab tests that could have been conducted, and medications and counselling provided during the consultation.
- c. *Time*: This section collected additional data related to the quality of care, with a focus on waiting time and time with the provider.
- d. *Satisfaction*: This section collected data on the client's satisfaction related to various elements of the consultation.
- e. *Socioeconomic characteristics*: This section collected data on the client's socioeconomic status, including land ownership, household structure and asset holdings. This was a key section for the analysis of equity of healthcare access.

## **2.4 Data Collection Process**

Data collection was carried out by 10 teams – each team had one supervisor and three enumerators. The supervisors and enumerators were all currently practicing nurses within the Ministry of Health and Child Welfare. The teams typically arrived early in the morning and continued the interviews through the afternoon. In a few cases, there were call backs to reach the adequate sample size per health facility. The supervisors reviewed the questionnaires at the end of each day of data collection. The questionnaires were dispatched to the data entry centre every Monday after a week's data collection.

Before the actual field work, the supervisors and enumerators were trained by the survey implementing firm, NHFA Consultants, and the World Bank for five days followed by two days of pre-test of the instruments. The pre-test was carried out in 12 health facilities of Shamva and Goromonzi districts. This helped the teams to familiarize with the real field conditions and contextualize the instruments.

## **2.5 Data Entry and Analysis**

Data were entered by trained data entry operators in CPro. Random checks were run with the data to eliminate inconsistencies. Data were analysed with stata and spss softwares. Simple frequencies were calculated for the outcome variables. P values were calculated as a test of equality of means across categories under consideration. Differences between categorical variables were tested using chi-squared tests, whereas between continuous variables it was with t-tests. The outcome variables were knowledge, motivation and satisfaction scores for the health workers; and quality of care and satisfaction scores for the clients. The outcome variables were also analyzed in relation to the background characteristics of the respondents such as age, sex, education, socio-economic status, training, type of health facility, ownership of the facility, province, and remoteness of the respondents. The construction of the scores is described below.

**Health worker knowledge score:** There were three vignettes (case scenarios) in the health worker instrument, where hypothetical scenarios were presented to the health worker about an illness they would commonly encounter in their practice. Two vignettes were related to child health and one was on maternal health. The scenarios on child health pertained to diarrhoea leading to severe dehydration and severe pneumonia, whereas the scenario on maternal health related to hypertension during pregnancy. Since the scenarios were related to clinical practice, health workers without any role in clinical care delivery were excluded from being interviewed at all.

Each question contained sub-sections on appropriate diagnosis and management of the illness scenario. The questions were posed without any clue or lead so that there was no opportunity for the respondent to guess a response from the list. The responses were equally weighted to balance their scores. Full knowledge was set at 100% and any score below that level was considered 'less than full knowledge'.

**Health worker satisfaction score:** There were 20 questions in the health worker satisfaction section, exploring their working conditions; relationships with their colleagues, supervisors, and clients; availability of equipment, drugs, and infrastructure; salary and employment benefits; training and career development opportunities; living conditions for family and education opportunities for children. Each question had to be rated by a health worker between '1' and '4' with higher scoring meaning higher satisfaction. All of the questions were averaged with equal weighting to create a single satisfaction score.

**Health worker motivation score:** There were 42 questions in the motivation section in the health worker instrument. The questions pertained to the health workers' perception on autonomy, inter-personal work relationships, self-pride, adjustment to change, self-efficacy, supervision and support, and innovation at the workplace. Each question had to be rated by a health worker between '1' and '5'. All of the questions were averaged with equal weighting to create a single composite motivation score.

**Quality of care score:** The client exit interviews inquired about the quality of services delivered in terms of the client-provider interaction as reported by the client after the services have been delivered. For child health, determinants considered were actions experienced during the consultation such as asked age, weighed, height measured, growth chart plotted, and physically examined. The equivalent actions for the antenatal services included if the client was weighed, her blood pressure was measured, abdomen was palpated, abdomen was measured with a tape, blood and urine samples were collected. Each item was scored '1' if it was performed and '0' if not. After creating a composite score through averaging with equal weights, the quality of care score had a maximum possible score '5' for both antenatal and child health clients. Here, a higher score meant a higher quality of care delivered to the client.

**Client satisfaction score:** There were 19 items on the client satisfaction section of the exit interviews. They were related to accessibility and convenience of the health facility for the client, cleanliness of the facility, attitude of the healthcare provider, availability of services, waiting time, and overall satisfaction. Each question had to be rated by a client (or clients' caregiver in case of the children) between '1' and '4' with higher scoring meaning higher satisfaction. All of the questions were combined after equal weighting to create a single client satisfaction score.

**Wealth index:** The section on the household characteristics in the client exit interview instrument was designed with the similar list of household characteristics and assets as the 2010-2011 Zimbabwe DHS. A wealth index was calculated using the weights given to each household and asset item similar to the DHS as determined by a principal component analysis.

**Analysis of equity:** Equity in access to services was assessed in two ways. First, the socio-economic and education status of the sample was compared with that of the sample from the demographic and household survey of 2010-11 to determine to what extent they represent or diverge from the entire population, as the DHS is a population representative survey. Since the exit interviews only interviewed the clients who present at health facilities, they may represent a selected sample from the entire population that is on average, for example, richer or poorer.

Secondly, quality of care and client satisfaction was compared across various socio-economic groups and remoteness of the respondents within the exit interviews sample

for antenatal and child health care services separately. This was intended to observe whether different socio-economic groups report receiving different levels of quality of services or had different levels of satisfactions with their providers.

## **2.6 Ethical Considerations**

Ethical approval for this study was obtained from the Medical Research Council of Zimbabwe. Participation in this study was voluntary and written informed consent was obtained from the participants after explaining them the objectives of the study and the intended utilization of the information.

## **2.7 Limitations**

The study relied on reported data from the clients with regard to the services they had received during their interactions with the providers. There might have been a bias in recall of the services they received. The extent and nature of the bias is unknown although believed to be small, if not zero, given the brief time lapse between receipt of service and interview. However, the interview was conducted in private and out of earshot of providers or strangers. We did not also triangulate the information provided by the providers and clients with actual practice or qualitative information. Thus, overall there could be a possibility of responses being subjected to what could be an appropriate answer.

### 3 Findings from in-depth interviews with health workers

The results from this component of the NHIFA are presented in two sections. The first section presents the results from the health worker interviews and the second describes the findings from the exit interviews with clients.

#### 3.1 Socio-demographic Characteristics of health worker respondents

A total of 597 health workers participated in the assessment with 71% female as shown in figure 2 below.

**Figure 2: Sex Distribution of Health Worker Respondents**

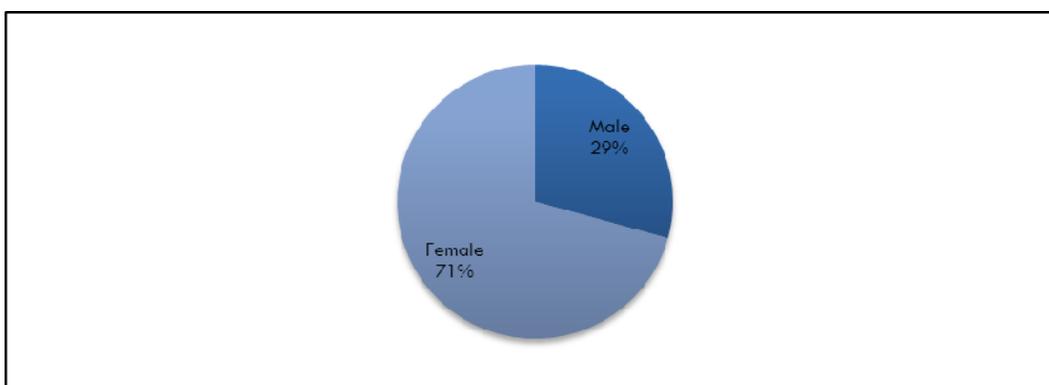


Table 1 provides a summary of the socio-demographic characteristics of the health workers.

**Table 1: Socio-demographic Characteristics of Health Worker Respondents**

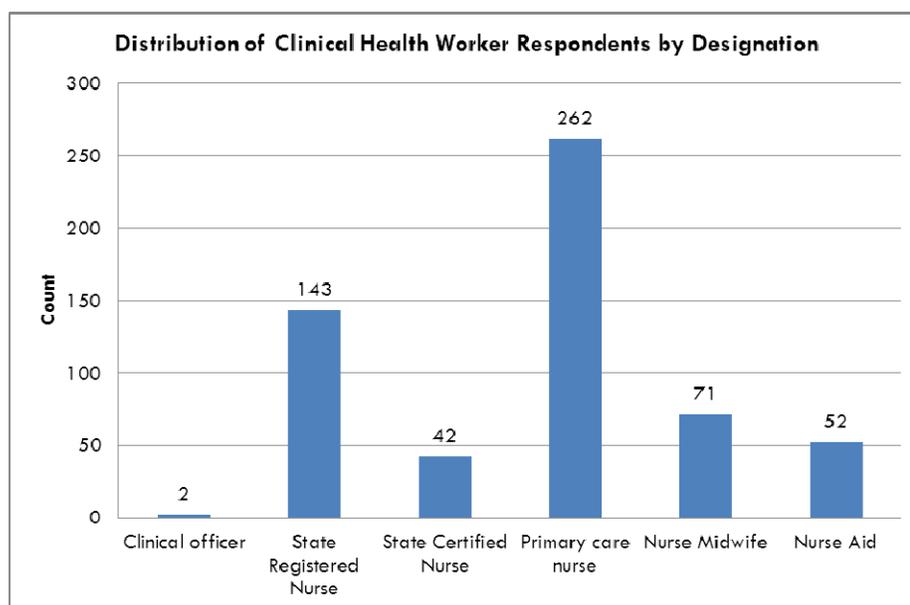
Variable		Count (n)	Percent (%)
<b>Age group</b>	20-34 Years	249	42.5
	35-49 Years	243	41.5
	>49 Years	94	16.0
<b>Marital Status</b>	Single	118	19.8
	Married/Living together	405	67.8
	Widowed	62	10.4
	Divorced separated	12	2.0
<b>Have Children</b>	Yes	517	86.6
	No	80	13.4
<b>Highest Level of Education</b>	Preschool	5	0.8
	Primary	12	2.0
	Secondary	292	48.9
	Higher	288	48.2
<b>Facility type</b>	Central Hospital	12	2.0
	Provincial Hospital	12	2.0
	District Hospital	70	11.7

	Rural Hospital	45	7.5
	Urban/Municipal Clinic	59	9.9
	Rural Health Centre	333	55.8
	Mission Hospital	39	6.5
	Mission Clinic	20	3.4
	Private Hospital	7	1.2
<b>Type of</b>	Permanent	583	97.7
<b>Employment</b>	Fixed term	4	0.7
	Short term contract	9	1.5
	Casual	1	0.2
<b>Total</b>		<b>597</b>	<b>100</b>

The mean age of the health workers was 38.7 years with the majority of respondents falling in the 20-34 (42.5%) and 35-49 (41.5%) year age groups. More than two thirds were either married or living with a partner. The most commonly reported highest levels of education were secondary (48.9%) and higher (48.2%) education. The respondents were mainly drawn from government institutions with 83% reporting being employed by the Central Government and mainly on a permanent basis. Eighty seven percent (87%) of the health workers reported having children with a mean number of children (standard deviation) of 1.6 (1.4).

Of the 597 respondents, 572 (96%) were clinical with the majority of these being Primary Care Nurses (262, 46%) and State Registered Nurses (143, 25%) as shown in figure 3 below.

**Figure 3: Distribution of Respondents by Designation**



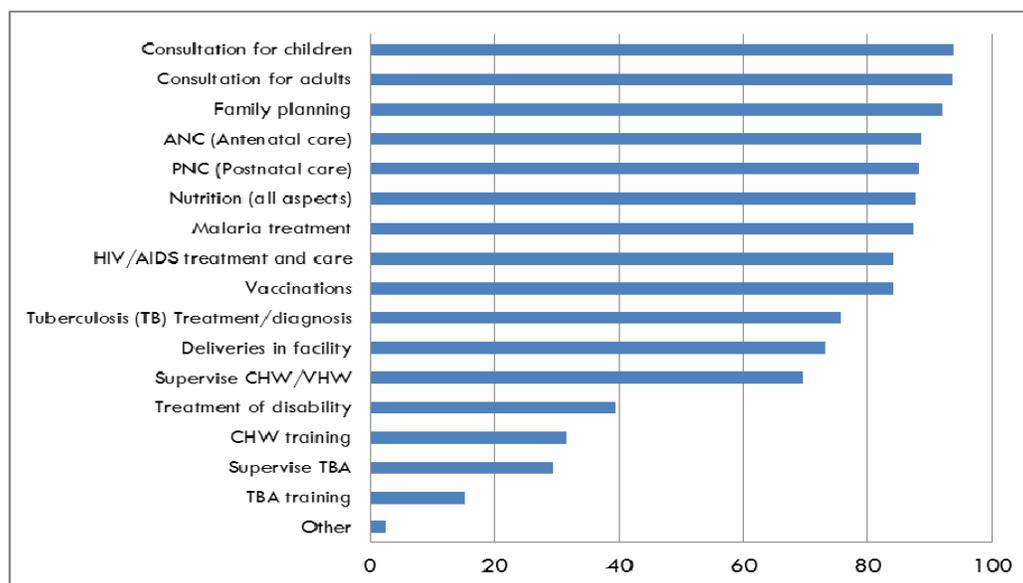
### 3.2 Services Provided by Health Workers

Health workers reported providing integrated primary care services with the majority of the listed services in the questionnaire being reported by 60% of the respondents as having been provided in the past three months. Close to 94% of the health workers provided consultations for children and adults in their work stations. TBA training and supervision, CHW training, treatment of disabilities and home deliveries were the least reported services as shown in Table 2 and Figure 4 below.

State Certified Nurses (SCNs) and Primary Care Nurses (PCNs) were noted to be the main cadre involved in work directly relating to Community Health Workers i.e. training and supervision of CHWs/VHWs as well as the training of TBAs. The treatment and management of disabilities is notably low across cadres (ranging from 11% to 50%) and facilities. Relatively higher proportions of respondents reporting management of disability were only observed for the private hospital, which had 71% (Annex 1).

**Table 2: Services provided by type of health worker in the last 3 months**

Services Provided in the Past 3 Months	Percentage (%) of Cases Reporting Services Provided in Last 3 Months					
	Clinical Officer <i>n</i> = 2	State Registered Nurse <i>n</i> = 143	State Certified Nurse <i>n</i> = 42	Primary Care Nurse <i>n</i> = 262	Nurse Midwife <i>n</i> = 71	Nurse Aid <i>n</i> = 47
Consultation for children	100.0	95.8	97.6	99.6	93.0	66.0
Consultation for adults	50.0	95.1	100.0	98.5	94.4	68.1
Family planning	100.0	87.4	97.6	98.1	94.4	76.6
ANC (Antenatal care)	100.0	80.4	97.6	99.2	97.2	44.7
PNC (Postnatal care)	50.0	81.1	97.6	98.9	93.0	51.1
Deliveries in facility	50.0	53.1	78.6	89.7	73.2	53.2
Tuberculosis (TB) Treatment/diagnosis	100.0	73.4	76.2	84.4	77.5	42.6
Vaccinations	50.0	86.0	90.5	95.4	93.0	10.6
Malaria treatment	50.0	88.1	92.9	93.5	93.0	46.8
Nutrition (all aspects)	50.0	93.0	88.1	87.4	91.5	76.6
Treatment of disability	50.0	45.5	38.1	40.5	47.9	10.6
HIV/AIDS treatment and care	50.0	90.9	90.5	85.1	91.5	48.9
Supervise CHW/VHW	50.0	49.7	73.8	87.4	60.6	46.8
Supervise TBA	50.0	21.0	47.6	32.8	28.2	27.7
CHW training	0.0	25.9	40.5	34.4	40.8	12.8
TBA training	0.0	9.8	28.6	18.3	15.5	6.4
Other	0.0	2.1	0.0	0.8	2.8	12.8

**Figure 4: Distribution of Health Workers by Services Provided (all cadres)**

### 3.3 Staff Training

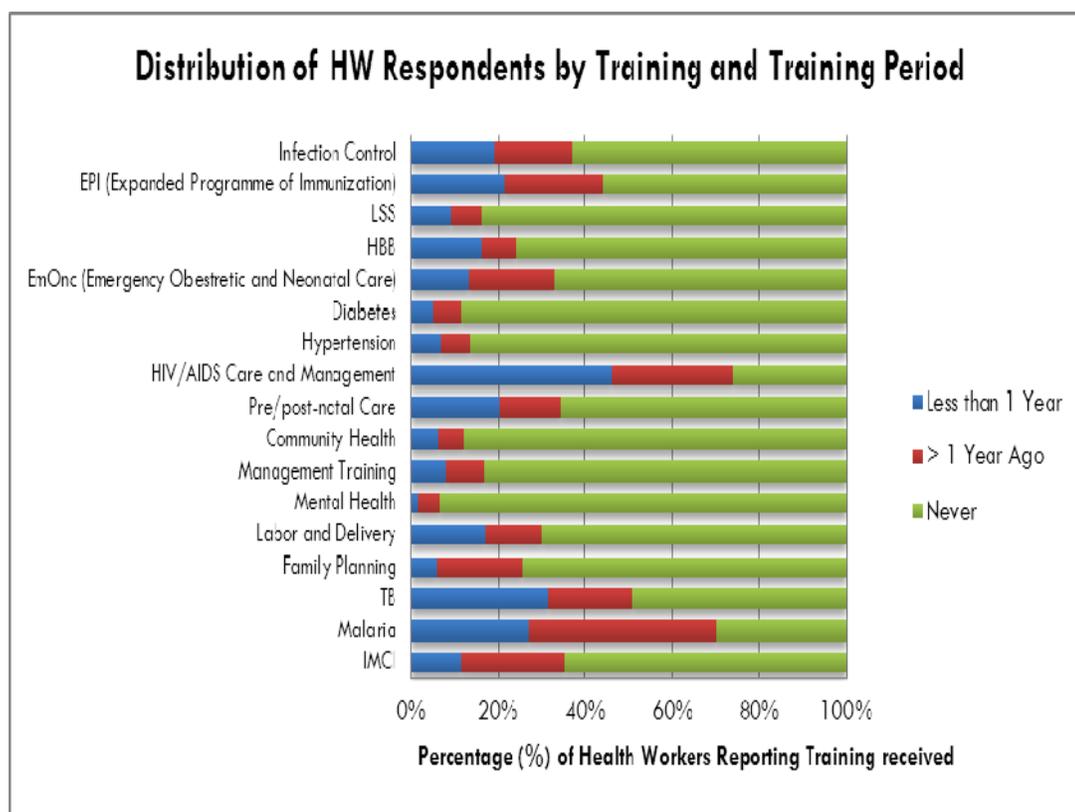
All health workers are expected to have a certain level of knowledge from their pre-service training to be able to deliver PHC services. However in-service trainings are required to refresh the knowledge and also to introduce new interventions as they arise. The proportions of health workers who had not received in-service training (post professional education) was notably high. Of the 17 technical areas, 15 exhibited more than 60% of health workers as having never been trained in the area as shown in Figure 5.

Training for HIV/AIDS Care and Management and TB provided a different picture for at least 80% of SCNs, PCNs, Nurses Midwives and SRNs received some training for these subjects with nearly half in the past year (Table 3). The proportion of nurse aides who ever received similar training was however notably low below 20%.

The proportions of health workers who received some training in Emergency Obstetric and Neonatal Care (EmONC) is notably low with nearly half (47%) of the nurse midwives untrained. Similarly, 67% and 70% of the SRNs and PCNs respectively who are mainly managing the Rural Health Centers have not received training in EmONC. Nurse professionals trained in IMCI and Labour and Delivery were observed to be of similarly low proportions across the facilities (Annex 2).

<b>Table 3: Training Received by Cadre</b>		<b>Clinical Officer</b>	<b>State Registered Nurse</b>	<b>State Certified Nurse</b>	<b>Primary Care Nurse</b>	<b>Nurse Midwife</b>	<b>Nurse Aid</b>
		<i>n = 2</i>	<i>n = 143</i>	<i>n = 42</i>	<i>n = 262</i>	<i>n = 71</i>	<i>n = 52</i>
<b>IMCI</b>	Less than 1 year	100	11.2	19.0	11.1	16.9	3.8
	> 1 year ago	0	25.9	38.1	20.6	36.6	7.7
	Never	0	62.9	42.9	68.3	46.5	88.5
<b>Malaria</b>	Less than 1 year	0	21.7	33.3	34.0	19.7	19.2
	> 1 year ago	50	44.1	45.2	48.1	56.3	9.6
	Never	50	34.3	21.4	17.9	23.9	71.2
<b>TB</b>	Less than 1 year	50	33.6	33.3	35.1	32.4	11.5
	> 1 year ago	50	16.8	26.2	19.8	33.8	1.9
	Never	0	49.7	40.5	45.0	33.8	86.5
<b>Family Planning</b>	Less than 1 year	50	4.2	4.8	6.1	11.3	3.8
	> 1 year ago	0	26.6	54.8	5.0	56.3	1.9
	Never	50	69.2	40.5	88.9	32.4	94.2
<b>Labour and Delivery</b>	Less than 1 year	0	11.9	19.0	21.4	26.8	1.9
	> 1 year ago	50	14.7	19.0	6.1	33.8	7.7
	Never	50	73.4	61.9	72.5	39.4	90.4
<b>Mental Health</b>	Less than 1 year	0	2.8	0.0	1.1	2.8	0.0
	> 1 year ago	0	7.0	19.0	1.1	8.5	1.9
	Never	100	90.2	81.0	97.7	88.7	98.1
<b>Management Training</b>	Less than 1 year	0	3.5	9.5	8.4	18.3	1.9
	> 1 year ago	0	9.8	35.7	4.2	16.9	1.9
	Never	100	86.7	54.8	87.4	64.8	96.2
<b>Community Health</b>	Less than 1 year	0	7.0	7.1	4.6	12.7	3.8
	> 1 year ago	0	5.6	23.8	2.7	9.9	3.8
	Never	100	87.4	69.0	92.7	77.5	92.3
<b>Pre/post-natal Care</b>	Less than 1 year	0	14.0	23.8	22.9	38.0	3.8
	> 1 year ago	0	15.4	35.7	7.6	29.6	7.7
	Never	100	70.6	40.5	69.5	32.4	88.5
<b>HIV/AIDS Care and Management</b>	Less than 1 year	100	47.6	40.5	48.1	67.6	11.5
	> 1 year ago	0	32.2	45.2	30.2	21.1	7.7
	Never	0	20.3	14.3	21.8	11.3	80.8
<b>Hypertension</b>	Less than 1 year	0	7.7	4.8	5.3	18.3	0.0
	> 1 year ago	0	10.5	16.7	3.8	5.6	3.8
	Never	100	81.8	78.6	90.8	76.1	96.2
<b>Diabetes</b>	Less than 1 year	0	5.6	9.5	2.7	15.5	0.0
	> 1 year ago	0	8.4	19.0	3.1	9.9	3.8
	Never	100	86.0	71.4	94.3	74.6	96.2
<b>EmONC</b>	Less than 1 year	0	9.1	14.3	15.3	26.8	3.8
	> 1 year ago	50	23.8	42.9	14.5	26.8	5.8
	Never	50	67.1	42.9	70.2	46.5	90.4
<b>Helping Babies Breathe</b>	Less than 1 year	0	11.2	28.6	16.0	29.6	5.8
	> 1 year ago	0	11.2	16.7	6.1	11.3	1.9
	Never	100	77.6	54.8	77.9	59.2	92.3
<b>Life Saving Skills</b>	Less than 1 year	0	7.0	11.9	8.4	18.3	5.8
	> 1 year ago	0	9.8	11.9	5.0	12.7	1.9
	Never	100	83.2	76.2	86.6	69.0	92.3
<b>EPI</b>	Less than 1 year	0	18.2	28.6	24.4	29.6	9.6
	> 1 year ago	0	24.5	35.7	21.8	29.6	5.8
	Never	100	57.3	35.7	53.8	40.8	84.6
<b>Infection Control</b>	Less than 1 year	0	23.1	19.0	16.0	31.0	11.5
	> 1 year ago	0	18.9	35.7	14.9	15.5	26.9
	Never	100	58.0	45.2	69.1	53.5	61.5

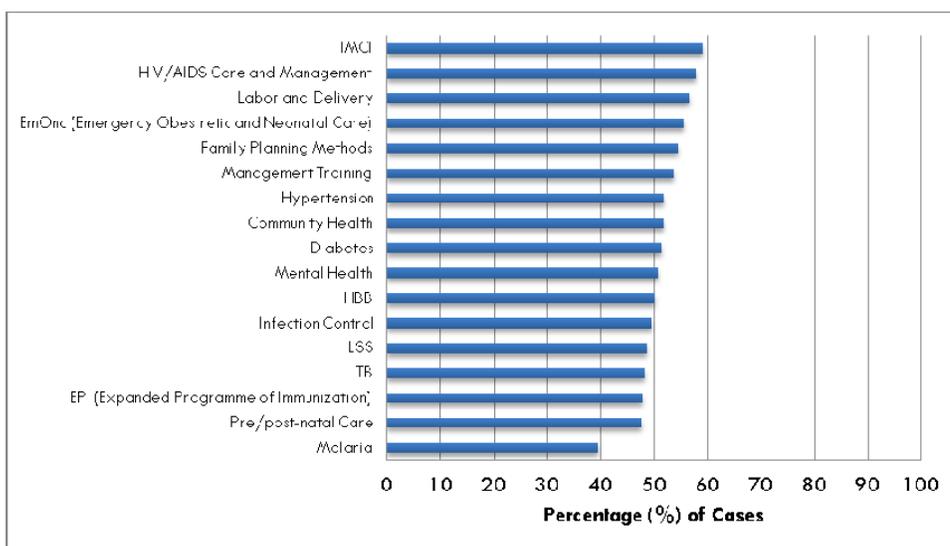
**Figure 5: Training Received and Period of Training (all cadres)**



At least 94% of the respondents expressed they had specific training needs to be able to perform better within their job descriptions. As shown in Figure 6, the most frequently mentioned subjects required for additional training were IMNCI (59%), HIV/AIDS Care and Management (58%), Labour and Delivery (57%) and EmONC (56%). The nurse midwives had the highest proportions of respondents requesting training in IMNCI, EmONC and ante- and post-natal care. The need for training for all training areas assessed was generally observed to be expressed by 40-60% of the nurses (Table 4).

Respondents from the private hospital had lower proportions requesting training across all the training areas assessed except for malaria in which it had the highest proportion of 57% together with the rural hospital. Health workers from rural hospitals had markedly higher proportions requesting trainings across all the training areas/subjects (Annex 3). Health workers in Manicaland had lower proportions expressing the need for training whilst the need for training was observed to be highest in Mashonaland West (Annex 4).

**Figure 6: Reported training needs for all cadres**



**Table 4: Reported training Needs by Cadre**

Training Needs	Clinical Officer	State Registered Nurse	State Certified Nurse	Primary Care Nurse	Nurse Midwife	Nurse Aid
	n=2	n=133	n=38	n=243	n=66	n=49
<b>IMCI</b>	50.0	60.9	47.4	60.1	69.7	42.9
<b>Malaria</b>	50.0	38.3	21.1	40.3	51.5	30.6
<b>TB</b>	50.0	51.1	34.2	48.1	54.5	49.0
<b>Family Planning Methods</b>	50.0	56.4	52.6	53.5	60.6	44.9
<b>Labor and Delivery</b>	100.0	54.9	44.7	58.4	62.1	55.1
<b>Mental Health</b>	50.0	52.6	42.1	50.6	57.6	46.9
<b>Management Training</b>	50.0	56.4	52.6	49.8	65.2	53.1
<b>Community Health</b>	50.0	55.6	36.8	49.4	60.6	49.0
<b>Pre/post-natal Care</b>	50.0	48.1	39.5	46.1	57.6	44.9
<b>HIV/AIDS Care and Management</b>	50.0	57.1	63.2	56.8	62.1	59.2
<b>Hypertension</b>	50.0	54.9	42.1	49.8	60.6	46.9
<b>Diabetes</b>	50.0	51.1	47.4	50.6	59.1	49.0
<b>EmONC (Emergency Obstetric and Neonatal Care)</b>	50.0	55.6	52.6	55.6	65.2	51.0
<b>HBB</b>	50.0	51.1	47.4	48.6	62.1	40.8
<b>LSS</b>	50.0	52.6	47.4	46.5	57.6	38.8
<b>EPI (Expanded Programme of Immunisation)</b>	50.0	51.1	34.2	44.9	60.6	49.0
<b>Infection Control</b>	100.0	47.4	42.1	48.1	63.6	49.0

### **Summary of Key findings on training**

- Health workers who reported receiving some training in Emergency Obstetric and Neonatal Care (EmONC) was low with nearly half of the nursing cadres untrained.
- Nurse professionals trained in IMCI and Labour and Delivery were observed to be of similarly low proportions across the facilities.
- Most frequently mentioned subjects required for additional training were IMNCI (59%), HIV/AIDS Care and Management (58%), Labour and Delivery (57%) and EmONC.
- Health workers from rural hospitals had markedly higher proportions requesting trainings across all the training areas.
- Health workers in Manicaland had lower proportions expressing the need for training while the need for training was observed to be highest in Mashonaland West.

### **3.4 Knowledge Levels among Health Workers**

As shown in Table 5, the health workers scored variedly across a range of 0 to 92% for the child health knowledge and 0 to 88% for maternal health. Average knowledge on child health (56.8%) was higher than that of maternal health (47.7%). State Registered Nurses and Nurse Midwives performed notably higher than other cadres. Primary care nurses reported the least knowledge scores on child health. As per the expectations, staff trained on EmONC, labour and childbirth scored higher on maternal health than those who were never trained.

Mission clinics had higher mean scores compared to other categories of institutions for knowledge on both child health and maternal health. As shown in Figure 7, Bulawayo, Harare and Masvingo provinces had higher scores for knowledge on child health, whereas Harare and Masvingo provinces scored higher on maternal health. On the contrary, Mashonaland Central and Mashonaland West provinces scored the least on child health, whereas Manicaland and Matabeleland North had the least scores on maternal health knowledge.

**Table 5: Health Workers' Knowledge**

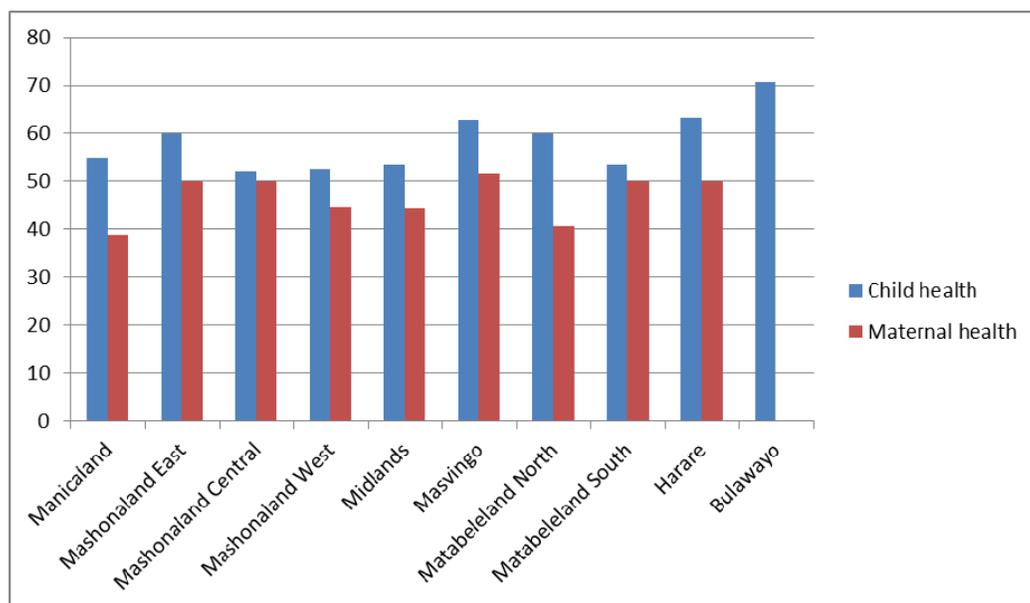
Variable		Knowledge score <sup>1</sup> (Child Health) Mean <sup>3</sup> (SD)	Knowledge score <sup>2</sup> (Maternal Health) Mean <sup>3</sup> (SD)
Age	20-34	57.2 (18.3)	37.5 (20.8)
	35-49	57.4 (17.6)	50.3 (15.8)
	>49	53.5 (18.2)	48.4 (16.0)
<b>P-value</b>		0.243	<b>0.043</b>
Trained on IMCI within a year	Yes	55.1 (17.9)	50.9 (19.9)
	No	57.0 (17.9)	47.2 (16.5)
<b>P-value</b>		0.408	0.446
Ever trained on EmONC	Yes	-	50.2 (16.2)
	No	-	44.8 (17.6)
<b>P-value</b>			0.126
Ever trained on labor and delivery	Yes	-	50.0 (16.6)
	No	-	44.2 (17.2)
<b>P-value</b>			0.107
Ever trained on pre/post-natal care	Yes	-	50.6 (15.9)
	No	-	42.3 (17.9)
<b>P-value</b>			<b>0.022</b>
Cadre	State Registered Nurse (SRN)	61.3 (15.0)	46.1 (8.8)
	State Certified Nurse (SCN)	55.5 (18.0)	39.8 (17.8)
	Primary Care Nurse (PCN)	54.0 (19.4)	-
	Nurse Midwife	60.9 (14.3)	51.8 (16.0)
<b>P-value</b>		<b>&lt; 0.001</b>	<b>&lt;0.001</b>
Facility type	Central Hospital	63.9 (14.4)	31.3 (26.5)
	Provincial Hospital	47.2 (16.8)	40.6 (6.25)
	District Hospital	60.4 (17.4)	50.5 (16.8)
	Rural Hospital	59.6 (16.8)	45.3 (13.3)
	Urban/Municipal Clinic	60.7 (17.5)	46.9 (14.2)
	Rural Health Centre	54.8 (18.7)	45.4 (17.7)
	Mission Hospital	58.8 (14.7)	51.3 (17.1)
	Mission Clinic	54.2 (14.9)	62.5 (-)
	Private Hospital	51.2 (17.6)	59.4 (27.7)
<b>P-value</b>		<b>0.032</b>	0.521
Province	Manicaland	54.8 (15.5)	38.9 (11.6)
	Mashonaland East	59.9 (15.8)	50.0 (20.1)
	Mashonaland Central	52.1 (19.2)	50.0 (19.4)
	Mashonaland West	52.5 (20.1)	44.6 (17.5)
	Midlands	53.3 (18.4)	44.2 (13.1)
	Masvingo	62.7 (15.7)	51.6 (12.4)
	Matabeleland North	60.0 (14.7)	40.6 (26.5)
	Matabeleland South	53.3 (21.9)	50.0 (19.4)
	Harare	63.2 (14.4)	50.0 (10.2)
	Bulawayo	70.8 (7.5)	-
	<b>P-value</b>		<b>&lt;0.001</b>
<b>Total</b>		56.8 (17.9)	47.7 (16.9)

1Based on questions related to the diagnosis and management of severe diarrhea and pneumonia

2Based on questions related to the diagnosis and management of hypertension during pregnancy

3 Full knowledge means a score of 100

- Scores could not be calculated due to either no observation, only 1 record (constant when n=1) or not administered because of ineligibility (non-clinical staff)

**Figure 7: Health Workers' Knowledge by Province**

The differences in the knowledge scores for child health were observed to be statistically significant for type of cadre ( $p < 0.001$ ), facility type ( $p = 0.032$ ) and province ( $p < 0.001$ ). The SRNs and Nurse Midwives had higher mean scores of 61.3 (SD 15.0) and 60.9 (SD 14.3) respectively relative to the SCNs and PCNs. Relatively higher mean knowledge scores were obtained for respondents drawn from Central Hospital, Council/Municipal Clinics as well as District and Rural Hospitals as compared to the other facilities.

The differences in knowledge on maternal health with respect to the age of the clinical staff were observed to be statistically significant ( $p = 0.043$ ). The clinical staff aged 35-49 years exhibited higher maternal knowledge scores relative to the 20-34 years and greater than 49 years age groups. Health workers who had received training on ante and postnatal care had significantly higher mean scores (50%) for maternal health knowledge compared to those who did not receive this training. Exposure to training on EmONC and Labour and Delivery however did not determine any statistically significant differences on levels of maternal knowledge.

Knowledge and skills of the health workers are linked with the quality of services they deliver to the clients. In this study, the knowledge levels of health workers dealing with clinical service provision were assessed for child health and maternal health through clinical case based vignettes (explained in detail under the “Methodology” section).

Further stratified analysis of the knowledge scores indicated that the significance of the differences in child health knowledge amongst the different cadres was not maintained at provincial level (Annex 5). For maternal health, however, the

differences were observed to be significant in Mashonaland East province only (Annex 7).

The differences in the child health knowledge amongst the cadres were only significant for the Rural Health Centre and Mission Hospitals only when stratified by facility type (Annex 6). A similar stratified analysis by facility type for the maternal health revealed that the differences were only significant for the Rural Health Centre (Annex 8).

#### **Summary of Key findings on health worker knowledge**

- Average knowledge on child health was higher than that of maternal health.
- Primary care nurses reported the least knowledge scores on child health.
- Clinical staff aged 35-49 years exhibited higher maternal knowledge scores relative to the younger and older age groups.
- Health workers trained on EmONC, labour and childbirth scored higher on maternal health than those who were never trained.
- Health workers who had received training on ante and postnatal care had significantly higher mean scores for maternal health knowledge compared to those who did not receive this training.
- Mission clinics had higher mean scores compared to other categories of institutions for knowledge on both child health and maternal health.
- Mashonaland Central and Mashonaland West provinces scored the least on child health knowledge, whereas Manicaland and Matabeleland North had the least scores on maternal health.

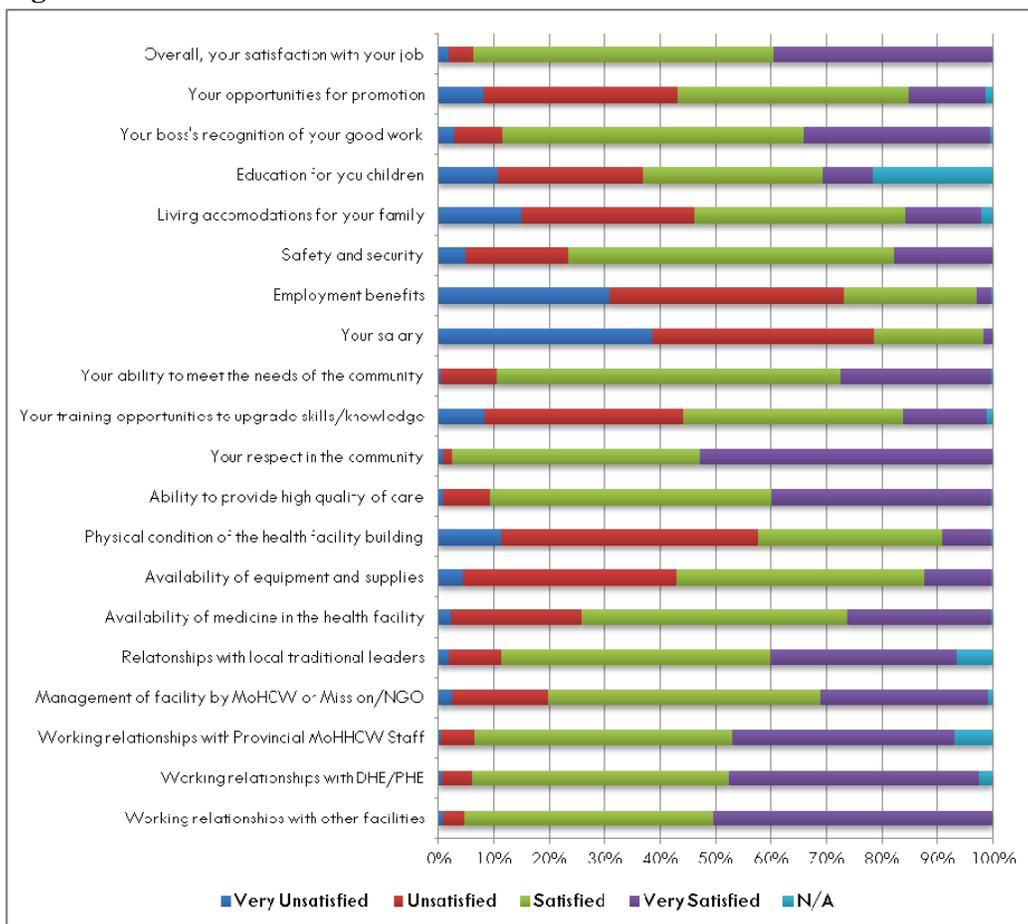
### **3.5 Health Worker Satisfaction and Motivation**

Motivation and job satisfaction influences the way a health worker performs at work. Health Workers were therefore asked how satisfied they were with different aspects of work. The levels of satisfaction amongst health workers in this study varied for different aspects relating to their jobs.

The proportion of health workers reporting satisfaction was higher for areas covering their relationships with DHE and/or PHE, relationships with the community and meeting the needs of the community and these ranged between 74% and 96%. The level of dissatisfaction was high for salary, employment benefits, opportunities for promotion and the general state/physical condition of the health facility buildings. Approximately 79% of the health workers reported that they were unsatisfied with their salary. Similarly, the percentage of respondents who reported unsatisfied with

employment benefits was 73%. Figure 8 below provides a summary of the distribution of respondents according to satisfaction level for specific areas related to their job. Detailed item wise satisfaction mean scores disaggregated by facility type and province are given in Annex 9 and 10.

**Figure 8: Levels of Health Worker Satisfaction**



The trend in the satisfaction across the different aspects reviewed in this assessment was somewhat similar for the different cadres (table 6). The proportions reporting satisfaction with salary and employment benefits continued to be low for all the nurses. This was also observed for their perception on the opportunities for promotion, which ranged between 50% and 60%. Among the rural provinces, health workers from Mashonaland East reported highest overall job satisfaction, whereas it was the least for Matabeleland North.

**Table 6: Satisfaction Mean Scores by Cadre**

Satisfaction Area	Clinical Officer	State Registered Nurse	State Certified Nurse	Primary Care Nurse	Nurse Midwife	Nurse Aid
	(N=2)	(N= 93)	(N= 27)	(N= 183)	(N= 47)	(N= 52)
Working relationship with other facility staff	100.0	95.7	100.0	95.7	91.5	96.2
Working relationship with DHE/PHE	100.0	90.3	100.0	96.3	93.6	98.1
Availability of medicine in the health facility	50.0	73.1	77.8	83.4	68.1	86.5
Availability of equipment and supplies in the health facility	50.0	58.1	66.7	64.2	61.7	61.5
The physical condition of the health facility building	50.0	41.9	55.6	48.1	46.8	53.8
Your ability to provide high quality of care	100.0	91.4	81.5	93.6	91.5	88.5
Your training opportunities to upgrade your skills and knowledge	100.0	52.7	74.1	55.6	74.5	48.1
Your salary	100.0	19.4	11.1	25.7	23.4	21.2
Employment benefits (travel allowance, bonus etc.)	100.0	24.7	25.9	36.4	17.0	25.0
Living accommodations for your family	100.0	54.8	70.4	50.3	57.4	48.1
Education for your children	100.0	55.9	63.0	49.7	61.7	40.4
Your opportunities for promotion	100.0	53.8	59.3	55.6	55.3	53.8
Overall, your satisfaction with your job	100.0	94.6	88.9	95.7	89.4	90.4

A mean score of 100 indicates the highest level of satisfaction

As shown in Table 7 below, health worker satisfaction scores were computed for each respondent. The summary descriptive statistics for the health workers show that the scores ranged from 25 to 75 with a mean (sd) of 52.2 (7.8). Similarly, motivation among the respondents varied with scores ranging from 44.8 to 74.8 and mean (sd) of 67.5 (4.6) respectively. The reported motivation among various socio-demographic categories of the health workers did not show much variation although differences were seen in satisfaction levels. Health workers earning more than \$1000 were reported to have a higher level of satisfaction. The differences in satisfaction for the different income levels were noted to be significant.

Although satisfaction levels across the clinical staff was not significantly different, the SCNs, Nurse Aids and Clinical Officers were observed to have higher motivation levels. Satisfaction levels were significantly associated with Province and Facility Type. In terms of the regional distribution of satisfaction scores, Bulawayo (62.4%) had the highest reported satisfaction and Midlands (47.9) the lowest. Staff stationed at Private Hospital, Provincial Hospital and Urban/Municipal Clinic had the highest

reported satisfaction and that of the central government had the least. The health workers' motivation was significantly associated with the cadre and province.

**Table 7: Health Worker Motivation and Satisfaction Mean Scores**

	Variable	N*	Motivation score Mean <sup>1</sup> (SD)	Satisfaction score Mean <sup>1</sup> (SD)
<b>Income</b>	Less than \$250	38	67.1 (6.4)	51.3 (6.2)
	\$251-500	498	67.5 (4.5)	51.8 (7.6)
	\$501-750	4	69.3 (2.6)	56.5 (10.3)
	\$751-1000	18	67.3 (4.8)	57.8 (7.5)
	Above \$1000	14	67.6 (4.1)	61.9 (9.5)
	P-value		0.916	<0.001
<b>Regular supervision</b>	Yes	300	67.4 (4.4)	52.0 (7.5)
	No	264	67.5 (4.8)	52.4 (8.2)
	P-value		0.797	0.523
<b>Cadre</b>	Clinical Officer	2	69.3 (1.0)	55.0 (7.1)
	State Registered Nurse (SRN)	143	67.3 (4.3)	51.6 (7.9)
	State Certified Nurse (SCN)	42	69.5 (4.0)	53.1 (8.1)
	Primary Care Nurse (PCN)	262	67.2 (4.9)	51.9 (7.2)
	Nurse Midwife	71	67.2 (3.9)	54.3 (9.1)
	Nurse Aid	52	68.3 (5.0)	52.1(8.1)
	P-value		<b>0.045</b>	0.191
<b>Facility Type</b>	Central Hospital	12	66.3 (5.7)	51.3 (6.4)
	Provincial Hospital	10	66.8 (4.5)	55.6 (6.0)
	District Hospital	67	66.5 (4.7)	48.4 (7.0)
	Rural Hospital	45	67.5 (4.6)	50.6 (7.3)
	Urban/Municipal Clinic	57	67.4 (4.2)	55.5 (8.2)
	Rural Health Centre	316	67.7 (4.8)	52.7 (7.6)
	Mission Hospital	39	67.0 (4.3)	51.8 (8.0)
	Mission Clinic	19	68.4 (3.1)	49.5 (7.3)
	Private Hospital	7	69.4 (2.0)	58.2 (10.5)
	P-value		0.483	<0.001
<b>Province</b>	Manicaland	63	65.4 (6.0)	54.5 (9.2)
	Mashonaland East	77	68.2 (3.5)	56.0 (7.2)
	Mashonaland Central	71	68.4 (4.0)	54.6 (7.1)
	Mashonaland West	63	67.3 (3.7)	51.0 (7.6)
	Midlands	69	68.0 (4.4)	47.9 (5.9)
	Masvingo	82	68.1 (3.7)	53.7 (6.9)
	Matabeleland North	64	67.5 (4.0)	48.2 (6.3)
	Matabeleland South	59	66.7 (6.5)	48.4 (6.4)
	Harare	12	65.1 (6.3)	52.6 (6.5)
	Bulawayo	12	68.5 (3.6)	62.4 (6.5)
	P-value		<b>0.002</b>	<0.001
<b>Total</b>		572	67.5 (4.6)	52.2 (7.8)

<sup>1</sup>A mean score of 100 indicates the highest level of motivation and satisfaction

\* Valid N, clinical cases excludes missing cases

### **Summary of Key findings on health worker satisfaction and motivation**

- Satisfaction was high for areas covering the relationships with provincial and district health executives, relationships with the community and meeting the needs of the community.
- Dissatisfaction was high for salary, employment benefits, opportunities for promotion and the general state/physical condition of the health facility buildings.
- Among the rural provinces, health workers from Mashonaland East reported highest overall job satisfaction, whereas it was the least for Matabeleland North.

## **4 Findings from the Exit Interviews with mothers/caregivers attending Antenatal care and Child health services**

### **4.1 Socio-demographic profile of exit interview respondents**

In order to understand the current state of quality of care related to maternal and child health, a total of 1864 women attending antenatal care (ANC) clinics and caregivers of 1865 children under 5 years were interviewed after receiving services. As shown in Table 8, the majority of the women who attended ANC were in the 20-34 years (69%) age group. Slightly more than a two thirds (67%) of these women reported having reached secondary education. The majority (40%) of the women both in the ANC and CH groups belong to the middle quintile of the wealth index. Among the respondents, the poorest quintile had the least representation. The majority (69%) of the U5 clients presenting at the clinic were less than 24 months of age (Table 9). The U5 children were most commonly accompanied by their mothers (89%).

**Table 8: Sample profile for antenatal respondents**

		Central Hospital (%)	Provincial Hospital (%)	District Hospital (%)	Rural hospital (%)	Urban Clinic (%)	Rural Health Centre (%)	Mission Hospital (%)	Mission Clinic (%)	Private Hospital (%)	Total % (n)
<b>Age</b>	<20	0.5	1.6	13.4	7.3	7	60.1	6.5	2.8	0.7	<b>22.8 (426)</b>
	20-34	1.6	2	12.6	7.8	10.9	54.3	6.4	3.5	0.7	<b>68.5 (1,278)</b>
	35-49	1.9	1.9	11.3	3.7	12.5	58.7	7.5	1.2	1.25	<b>8.5 (160)</b>
<b>Education</b>	Primary	0.5	0.5	9.3	7.0	5.6	66.4	7.6	2.6	0.4	<b>30.4 (568)</b>
	Secondary	1.7	2.3	14.3	7.6	11.9	51.5	6.3	3.5	1.0	<b>66.6 (1,242)</b>
	More than secondary	0.0	14.8	7.4	7.4	25.9	37.0	3.7	3.7	0.0	<b>1.4 (27)</b>
	No education	3.7	0.0	11.1	3.7	11.1	66.7	3.7	0.0	0.0	<b>1.4 (27)</b>
<b>Wealth quintile</b>	Lowest	0	0	8.5	7.0	1.4	57.8	15.5	9.9	0.0	<b>3.8 (71)</b>
	Second	0.3	0.0	10.0	10.5	2.6	66.3	7.1	3.3	0.0	<b>21 (392)</b>
	Middle	0.3	0.5	9.4	7.3	6.5	64.0	7.7	3.9	0.4	<b>39.8 (742)</b>
	Fourth	0.3	2.6	13.1	7.1	9.7	57.1	5.2	2.6	2.4	<b>20.9 (382)</b>
	Highest	7.6	7.9	25.6	3.6	33.9	18.1	2.5	0.0	0.7	<b>14.6 (277)</b>
<b>Remoteness</b>	Near	1.1	1.8	8.4	6.4	12.7	62.2	3.7	3.2	0.6	<b>70.3 (1,311)</b>
	Remote	2.0	2.4	22.8	9.6	4.3	41.4	13.4	3.1	1.1	<b>29.6 (553)</b>
<b>Total</b>		<b>1.3</b>	<b>1.9</b>	<b>12.7</b>	<b>7.4</b>	<b>10.2</b>	<b>56.0</b>	<b>6.6</b>	<b>3.2</b>	<b>0.8</b>	<b>1864</b>

\* Remote if travelled 10 KM or more

**Table 9: Sample profile for child health respondents**

Variable		Central Hospital (%)	Provincial Hospital (%)	District Hospital (%)	Rural hospital (%)	Urban Clinic (%)	Rural Health Centre (%)	Mission Hospital (%)	Mission Clinic (%)	Private Hospital (%)	Total % (n)
Age (in months)	<6	2.0	2.5	12.1	7.9	9.1	54.7	8.9	2.7	0.3	<b>21.7 (406)</b>
	6-11	1.5	1.5	13.4	9.3	10.1	55.3	5.3	2.5	1.0	<b>21.2 (396)</b>
	12-23	1.2	2.9	12.5	5.9	9.0	57.1	6.3	3.5	1.6	<b>26.2 (489)</b>
	24-35	1.6	1.2	10.7	5.2	11.5	60.3	4.4	4.4	0.8	<b>13.5 (252)</b>
	36-47	2.0	1.3	9.9	9.9	7.3	58.9	6.0	3.3	1.3	<b>8.1 (151)</b>
	48-59	1.8	2.3	9.4	7.6	12.3	53.8	7.6	4.7	0.6	<b>9.1 (171)</b>
Sex	Male	1.5	2.2	11.1	8.6	10.2	57.1	5.8	2.7	0.8	<b>49.1(916)</b>
	Female	1.7	2.0	12.5	6.3	9.4	55.9	7.2	3.9	1.2	<b>50.8 (949)</b>
Mother/caregiver's education	Primary	1.1	1.3	10.3	5.4	6.0	62.8	7.5	4.8	0.8	<b>33.7 (629)</b>
	Secondary	2.0	2.5	12.7	8.7	11.5	53.1	5.8	2.7	1.2	<b>60.6 (1,131)</b>
	More than secondary	3.3	6.7	10.0	16.7	13.3	36.7	10.0	3.3	0.0	<b>1.6 (30)</b>
	No education	0.0	1.3	12.0	2.7	13.3	62.7	6.7	1.3	0.0	<b>4 (75)</b>
Wealth quintile	Lowest	0	2.4	6.0	4.8	9.6	67.5	4.8	4.8	0.0	<b>4.4 (83)</b>
	Second	0.3	0.0	9.0	7.7	3.6	68.4	8.0	3.1	0.0	<b>20.8 (389)</b>
	Middle	0.5	0.8	9.5	7.2	4.9	65.1	6.7	4.9	0.3	<b>39.3 (734)</b>
	Fourth	0.8	2.7	12.6	10.4	11.5	52.4	5.9	1.6	2.1	<b>20 (374)</b>
	Highest	7.7	7.4	22.5	4.6	28.4	20.0	5.3	1.4	2.8	<b>15.2 (285)</b>
Remoteness*	Non-remote	0.9	1.7	9.8	7.3	11.3	60.4	4.6	2.9	1.1	<b>75.4 (1,405)</b>
	Remote	3.7	3.3	18.3	8.1	5.0	44.3	12.0	4.6	0.7	<b>24.5 (458)</b>
<b>Total</b>		<b>1.6</b>	<b>2.1</b>	<b>11.9</b>	<b>7.5</b>	<b>9.8</b>	<b>56.5</b>	<b>6.5</b>	<b>3.3</b>	<b>0.9</b>	<b>1,865</b>

\* Remote if travelled 10 KM or more

## 4.2 *Reasons for accessing care from a particular facility*

The single most common reported reason for accessing care from a particular facility was proximity (79% for child health and 77% for antenatal clients), as shown in Table 10. Other reported reasons were trust in the provider, recommendation or referral, and low cost of care.

**Table 10: Reported reasons for accessing care from the provider**

<b>Reasons</b>	<b>Antenatal care n (%)</b>	<b>Child health n (%)</b>
Location close to home	1,435 (77)	1,474 (79.1)
Trust in providers	181 (9.7)	182 (9.7)
Recommendation or referral	138 (7.4)	72 (3.9)
Low cost	80 (4.3)	73 (3.9)
Other (availability of drugs or female provider)	30 (1.6)	64 (3.4)
<b>Total</b>	<b>1864</b>	<b>1865</b>

### **Summary of Key findings**

- The majority of the antenatal clients interviewed were between 20 and 34 years of age, educated up to secondary level, middle income quintile, and residing within 10 KMs of the health centers.
- Lowest most income quintile was only around four percent in the sample.
- Most common reported reason for accessing care from a facility was proximity.

## 4.3 *Reported quality of delivery of Antenatal Care Services*

According to the national guidelines, a standard package of care provided in ANC includes weighing, urine analysis, blood pressure measurement, palpation of abdomen, and measurement of abdomen with tape. These routine examinations are practiced in order to monitor a pregnancy and identify complications early so that these can be managed. We asked the women to recall these commonly provided antenatal care (ANC) services. This section relied exclusively on the clients' recall on the services delivered.

Table 11 provides a summary of the proportions of women who recalled having a specific routine examination during ANC services disaggregated by various factors of interest in this study. All women who visited the Provincial and Central Hospitals had their abdomen palpated on assessment whilst 98% of those who visited the mission and rural hospital and clinics received this examination. Private hospitals had the least proportion (93%) of the pregnant women who had their abdomen palpated.

**Table 11: Reported quality of services received for Antenatal Health Care**

	Variable	Blood sample taken (%)	Urine sample taken (%)	Weighed (%)	Blood pressure measured (%)	Abdomen palpated (%)	Abdomen measured with tape (%)	Total (n)	
<b>Age</b>	<20	55.4	7.8	92.02	92.3	98.1	82.9	426	
	20-34	49.5	9.6	90.3	89.4	98.4	82	1,278	
	35-49	52.5	13.8	89.4	88.8	99.4	81.9	160	
	P value	0.1	0.08	0.49	0.2	0.55	0.91		
<b>Education</b>	Primary	50.9	4.8	90.1	88	97.4	80.3	568	
	Secondary	51.3	11.8	90.8	90.7	98.9	82.6	1,242	
	More than secondary	48.2	14.8	88.9	96.3	100	96.3	27	
	No education	51.9	3.7	92.6	92.6	96.3	88.9	27	
	P value	0.98	<b>&lt; 0.001</b>	0.93	0.2	0.05	0.1		
<b>Wealth quintile</b>	Lowest	64.8	5.6	90.1	84.5	95.8	78.9	71	
	Second	52.3	5.6	92.1	89.5	99.0	81.6	392	
	Middle	50.1	7.4	89.1	89.0	97.8	83.0	742	
	Fourth	51.1	12.0	92.7	91.9	99.5	83.0	382	
	Highest	48.7	18.4	89.9	92.4	98.6	80.5	277	
	P value	0.16	<b>&lt; 0.001</b>	0.27	0.15	0.07	0.79		
<b>Remoteness*</b>	Near	51	9.2	90.2	90.4	98.6	81.1	1,311	
	Remote	51.4	10.5	91.7	89.2	98	84.8	553	
	P value	0.89	0.37	0.3	0.41	0.32	0.05		
<b>Facility type</b>	Central Hospital	21	63	100	100	100	66.7	24	
	Provincial Hospital	47.6	38.1	97.6	97.6	100	95.2	42	
	District Hospital	47.5	12.3	93.0	95.1	98.4	82.0	244	
	Rural hospital	45.0	7.75	91.5	91.5	98.5	85.3	129	
	Urban Clinic	58.0	4.5	89.5	89.0	98.5	74.0	200	
	Rural Health Centre	50.8	5.5	89.1	88.3	98.5	82.3	1,029	
	Mission Hospital	52.3	19.6	95.3	88.8	98.1	89.7	107	
	Mission Clinic	59.2	5.6	94.4	91.6	97.2	84.5	71	
	Private Hospital	94.4	88.9	77.8	88.9	94.4	83.3	18	
		P value	<b>&lt; 0.001</b>	<b>&lt; 0.001</b>	<b>0.028</b>	<b>0.036</b>	0.874	<b>0.003</b>	
<b>Facility ownership</b>	Government	47.1	11.1	92.6	89.9	98.1	79.9	881	
	District council	53.1	4.6	87.6	90.6	99.4	83.9	659	
	Council/Municipal	57.9	7.9	86.8	87.7	98.3	81.6	114	
	Mission/Church	54.7	13.0	95.3	90.1	97.4	87.0	192	
	Private	94.4	88.9	77.8	88.9	94.4	83.3	18	
	P value	<b>&lt; 0.001</b>	<b>&lt; 0.001</b>	<b>&lt; 0.001</b>	0.917	0.093	0.111		
<b>Province</b>	Manicaland	41.2	6.6	82.0	82.9	98.6	73.9	211	
	Mash Central	33.7	17.8	93.1	94.2	97.8	83.3	276	
	Mash East	54.5	4.3	91.5	87.7	98.6	78.2	211	
	Mash West	50.7	8.5	92.4	90.5	99.5	84.8	211	
	Mat North	38.9	10.3	88.9	95.3	99.6	89.7	234	
	Mat South	78.6	11.1	92.9	90.9	99.2	90.9	252	
	Midlands	50.7	6.1	85.1	80.0	96.7	78.1	215	
	Masvingo	58.0	4.3	96.3	95.7	96.8	76.6	188	
	Harare	58.3	27.8	100.0	100.0	100.0	66.7	36	
	Bulawayo	76.7	16.7	96.7	90.0	100.0	90.0	30	
		P value	<b>&lt; 0.001</b>	<b>&lt; 0.001</b>	<b>&lt; 0.001</b>	<b>&lt; 0.001</b>	0.136	<b>&lt; 0.001</b>	
		<b>Total</b>	51.1	9.6	90.6	90	98.4	82.2	1,864

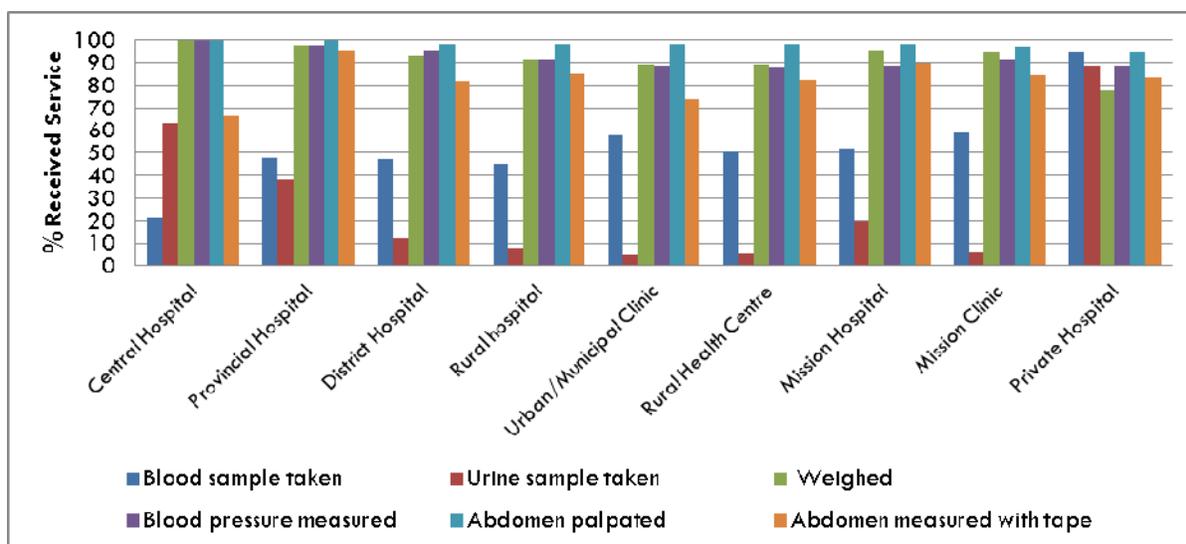
\* Remote if travelled 10 KM or more

Although there were similarly high proportions of pregnant women routinely weighed and having a fundal height measured, proportions were found to be higher for the provincial and district hospitals. Pregnant women attending ANC in Harare were least likely to have their fundal height measured with 67% compared to the overall of 82%. There were no marked variations found depending on the age, educational levels, or wealth quintile of the mother.

Obtaining samples of blood and urine was less commonly reported as compared to the other aspects of routine care mentioned above. The proportions of women who had a blood sample taken and urine sample taken amongst all the respondents was 51% and 10% respectively. All women had their blood sample taken at the private hospital whilst only 20% reported receiving a similar service at the Central Hospital. Pregnant women were least likely to have their blood samples collected in Matabeleland North.

The proportion of women who reported having a urine sample taken was highest at the private hospital (89%), followed by the central hospital (63%) compared to other facilities particularly the rural health center, mission and urban/municipal clinics with 5.4%, 5.1% and 5.8% respectively (Figure9). The proportions of women reporting receiving the ANC services were observed to be relatively similar regardless of the distance they travelled from their places of residence.

**Figure 9: Reported quality of ANC services received by facility type**



### **Summary of Key findings on quality of ANC services**

- More than 90% women were weighed, had their blood pressure measured, abdomen palpated and measured with a tape during the ANC visits.
- Only half and one-tenth women respectively got their blood and urine samples taken.
- More educated and richer women, accessing care from a private or Mission health center were more likely to get their urine samples taken.
- Pregnant women were least likely to have their blood samples collected in Matabeleland North.
- Women accessing antenatal care from a private or Mission health center were more likely to get their blood samples taken and weight measured.

#### ***4.4 Reported quality of delivery of Child Health Care Services***

According to the national guidelines, a standard package of services for the examination of sick children under the age of five years includes weighing, plotting the growth chart, and physical examination specific for the groups of symptoms.

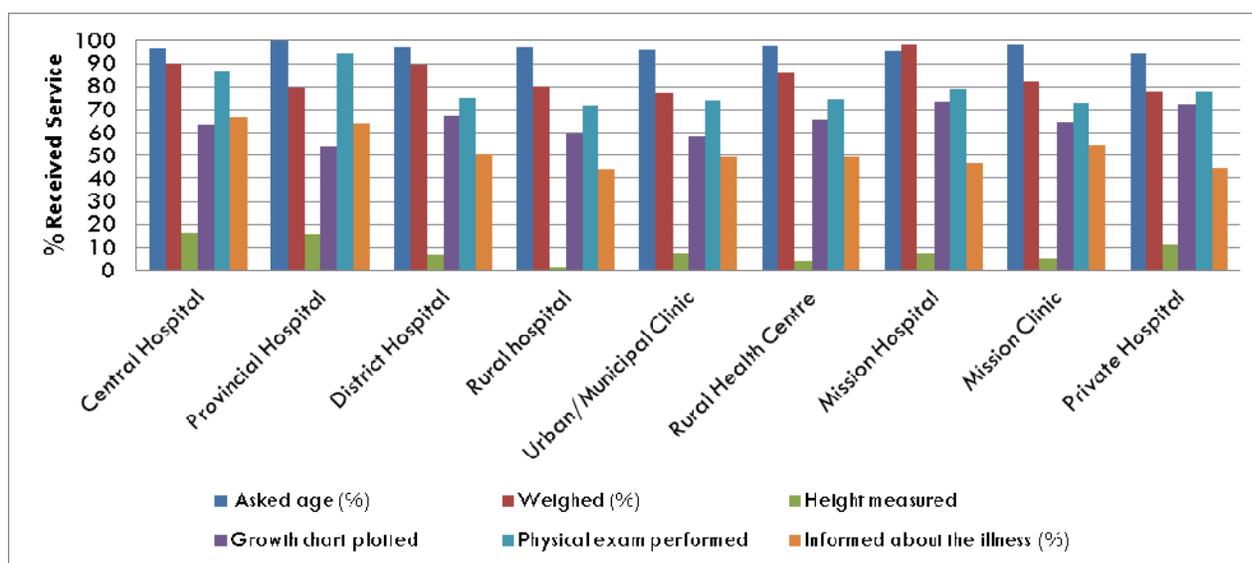
Study participants were asked to recall which routine examinations their child had received during the consultation. An analysis of the quality of child health care services exhibited variations in the extent to which the different child health care services are provided. Table 12 shows that at least 97% of the respondents reported having been asked the age of the child during assessment. Child weighing was also noted to be high as indicated by 86%. In contrast to this, only 5% of the respondents reported having had any height measurements taken for the child. Three quarters (75%) reported having their child physically examined whilst only half indicated that they had been informed about the illness of their child. Although the above proportions were largely similar across the different strata, variations were notable for the province and facility type mainly for physical examination and informing about the illness. Only 39% and 61% of the respondents were informed of the child's illness and had their child physically examined respectively in Harare compared to 69% and 75% respectively in Bulawayo. Overall, height measurement (5%) and plotting of growth charts (65%) were the least reported services received by the respondents.

There were differences on the quality of services received among clients across provinces. All child health care services except asking about age were statistically significant. Reported quality of services such as collection of asking about age, weighing, and plotting of growth chart for children were significantly different across facility ownership.

**Table 12 Reported quality of services received for Child Health Care**

Variable		Asked age (%)	Weighed (%)	Height measured (%)	Growth chart plotted (%)	Physical exam performed (%)	Informed about the illness (%)	Total (n)
Age (in months)	<6	97.8	89.4	4.9	73.3	77.0	53.8	406
	6-11	96.7	84.8	4.8	72.2	73.7	48.9	396
	12-23	97.3	82.4	5.9	63.6	75.7	48.7	489
	24-35	98.0	83.7	4.4	58.3	71.8	51.6	252
	36-47	95.4	88.1	5.3	49.7	72.9	41.1	151
	48-59	98.8	90.6	5.3	54.4	78.4	48.5	171
	P value	0.398	<b>0.015</b>	0.957	<b>&lt; 0.001</b>	0.529	0.155	
Sex	Male	96.9	86.2	4.6	64.9	74.9	50.3	916
	Female	97.8	85.5	5.7	64.8	75.1	48.9	949
	P value	0.251	0.64	0.285	0.973	0.926	0.536	
Mother/caregiver's education	Primary	96.7	85.7	5.9	63.6	72.0	47.7	629
	Secondary	97.9	86.1	5.0	66.1	76.5	50.6	1,131
	More than secondary	93.3	76.7	6.7	46.7	90.0	60.0	30
	No education	97.3	86.7	1.3	64.0	72.0	46.7	75
	P value	0.234	0.534	0.369	0.135	<b>0.039</b>	0.407	
Wealth quintile	Lowest	100	88.0	7.2	63.9	66.3	57.8	83
	Second	96.1	85.5	4.9	66.2	72.4	47.8	389
	Middle	98.1	89.9	4.2	68.9	76.4	49.2	734
	Fourth	97.6	82.6	4.8	62.0	74.9	47.3	374
	Highest	96.1	79.3	7.7	56.5	77.9	53.7	285
	P value	0.098	<b>&lt; 0.001</b>	0.199	<b>0.003</b>	0.141	0.242	
Remoteness	Non-remote	96.9	84.8	5.1	63.2	74.8	49.8	1,405
	Remote	98.7	88.4	5.5	69.8	75.8	48.9	458
	P value	<b>0.042</b>	0.066	0.733	<b>0.009</b>	0.68	0.734	
Facility type	Central Hospital	96.7	90	16.7	63.3	86.7	66.7	30
	Provincial Hospital	100.0	79.5	15.4	53.9	94.9	64.1	39
	District Hospital	97.3	89.6	7.2	67.0	75.1	50.2	221
	Rural hospital	97.1	79.9	1.4	59.0	71.9	43.9	139
	Urban Clinic	96.2	77.5	7.7	58.2	73.6	49.5	182
	Rural Health Centre	97.7	86.3	3.7	65.7	74.2	49.3	1,052
	Mission Hospital	95.8	98.3	7.5	73.3	79.2	46.7	120
	Mission Clinic	98.4	82.3	4.8	64.5	72.6	54.8	62
	Private Hospital	94.4	77.8	11.1	72.2	77.8	44.4	18
	P value	0.793	<b>&lt; 0.001</b>	<b>&lt; 0.001</b>	0.124	0.112	0.269	
	Facility ownership	Government	97.4	86.4	5.7	64.9	76.0	50.7
District council		98.5	85.7	3.9	65.0	75.0	47.9	649
Municipal		91.7	71.6	9.2	50.5	67.9	54.1	109
Mission/Church		96.8	92.1	4.2	71.6	74.7	48.4	190
Private		94.1	82.4	11.8	70.6	76.5	41.2	17
P value		<b>0.002</b>	<b>&lt; 0.001</b>	0.084	<b>0.008</b>	0.494	0.662	
Province	Manicaland	95.7	80.7	7.3	50.2	80.7	56.0	213
	Mash Central	98.8	82.1	3.2	71.8	83.3	54.0	258
	Mash East	96.8	78.8	4.6	53.0	63.6	34.6	208
	Mash West	97.1	87.6	0.5	73.3	77.6	49.1	214
	Mat North	97.9	89.9	8.0	59.5	71.3	51.9	233
	Mat South	97.8	94.4	4.1	86.6	81.7	51.9	263
	Midlands	97.3	80.0	6.2	56.0	64.9	47.1	212
	Masvingo	98.9	95.0	4.4	67.8	77.8	50.0	192
	Harare	91.9	70.3	16.2	37.8	59.5	37.8	36
	Bulawayo	93.3	90.0	13.3	63.3	80.0	73.3	36
	P value	0.161	<b>&lt; 0.001</b>	<b>&lt; 0.001</b>	<b>&lt; 0.001</b>	<b>&lt; 0.001</b>	<b>&lt; 0.001</b>	
<b>Total</b>		97.4	85.8	5.2	64.8	75.0	49.6	1,865

**Figure 10: Reported quality of child health services received by facility type**



### Summary of Key findings on delivery of Child Health services

- During the last visit for the illness of the under-five children to the health facilities, only half were informed about the illness, 65 per cent had growth charts plotted, 75 per cent were physically examined and 86 per cent were weighed.
- Among all under-five children, infants were more likely to be plotted on a growth chart.
- Children of educated mothers (or caregivers) were more likely to be physically examined.
- More children accessing care from mission and private health facilities had their growth chart plotted.
- Children in Harare were less likely to be weighed, physically examined, and plotted on a growth chart.

## 4.5 Client Satisfaction

Overall 98% of antenatal (Table 13) and 96% child health (Table 14) respondents were satisfied with the overall service they received. Overall satisfaction scores were highest for clients accessing private hospital care.

The levels of satisfaction however differed depending upon the specific aspect of the service. The clients were dissatisfied with accessibility followed by waiting time and cleanliness. Pregnant women (91%) and children (88%) clients from the highest wealth quintile were the most likely to be satisfied with the accessibility and convenience of the services compared to only 70% of women (68% child health clients) in the lowest quintile (Figure 11). Notable differences were also observed depending on whether a pregnant woman needed to travel greater or less than 10km to reach services. Women living further away had lower satisfaction scores of 50% for accessibility/convenience and 77% for waiting times compared to women living closer by for whom these scores were 87% and 83% respectively.

As shown in Figure 12, the urban/municipal clinics and rural health centers had higher proportions of individuals satisfied with a health provider's attitude compared to pregnant women accessing ANC services at the central hospital where 88% were satisfied. Clients with higher educational background were seen to be more satisfied with the accessibility and convenience as 93% of those with secondary education or more reported satisfaction compared to the educational levels which had proportions ranging from 67% to 76%. This difference could however be as a result of the likelihood of this group being in an urban setting compared to a rural which would also likely present enhanced access and convenience.

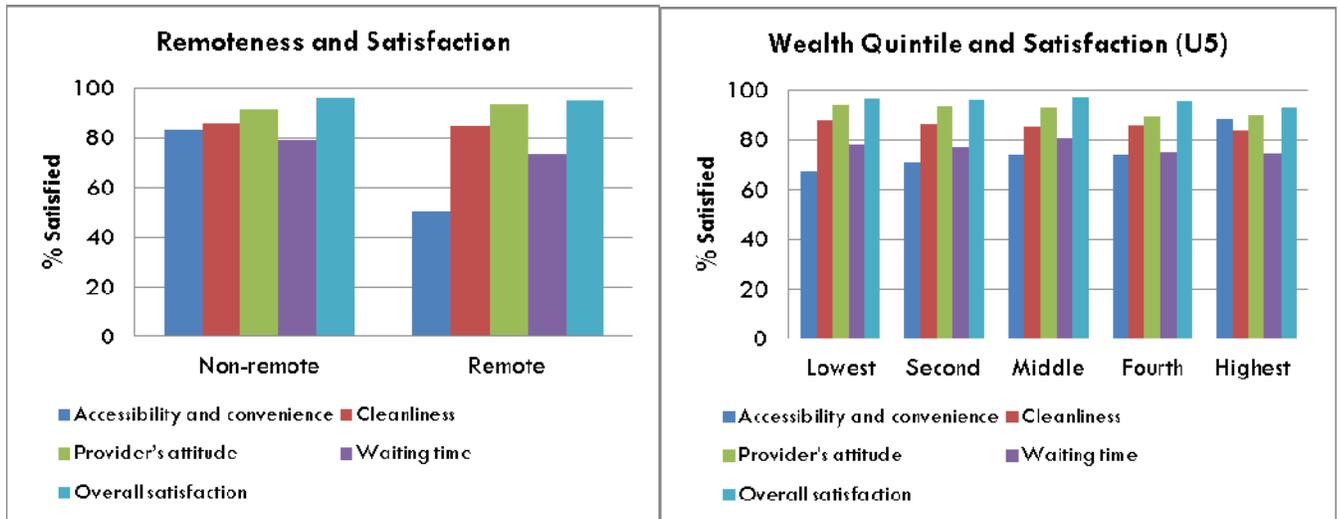
The difference on the reported satisfaction on accessibility, provider's attitude, waiting time, and cleanliness was significant between facility ownership. There were significant differences between provinces on the satisfaction on accessibility, waiting time, and cleanliness.

**Table 13: Reported Client Satisfaction when accessing Antenatal Services**

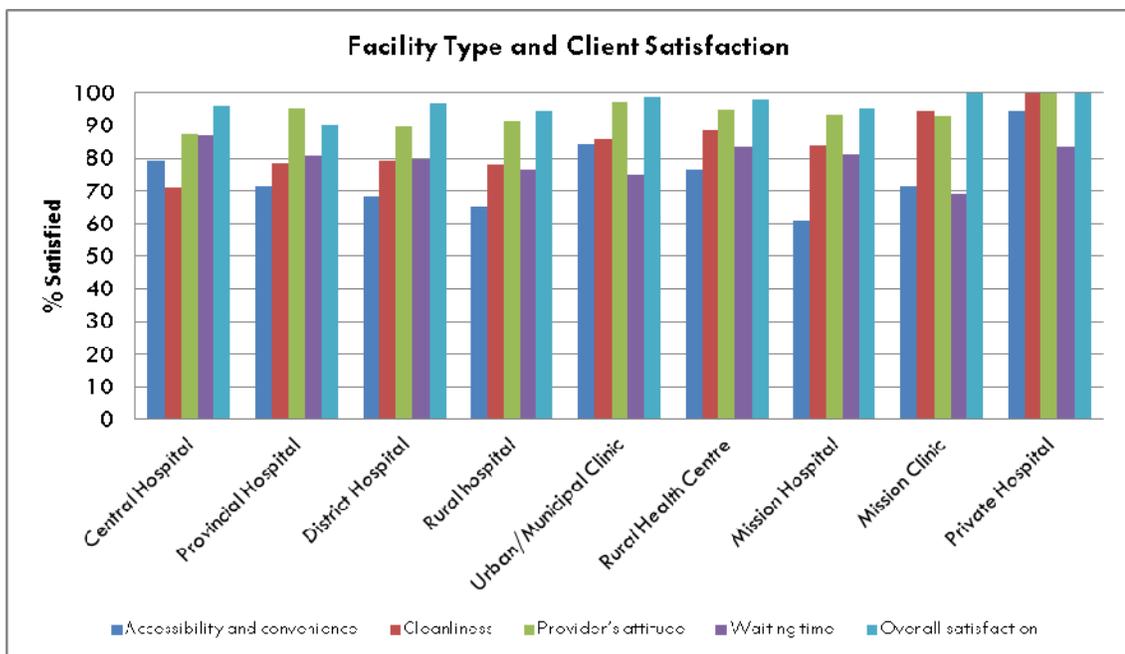
Variable	Accessibility and convenience (%)	Cleanliness (%)	Provider's attitude (%)	Waiting time (%)	Overall satisfaction (%)	Total (n)
<b>Age</b>	<20	73.7	84.7	92.7	79.0	426
	20-34	75.4	86.6	94.3	82.1	1277
	35-49	68.8	84.4	96.3	78.1	160
	P value	0.167	0.517	0.238	0.233	0.543
<b>Education</b>	Primary	71.1	87.0	94.7	81.0	568
	Secondary	75.8	85.6	93.8	80.7	1,242
	More than secondary	92.6	77.8	96.3	88.9	27
	No education	66.7	92.6	92.6	88.9	27
P value	<b>0.019</b>	0.375	0.817	0.517	0.688	
<b>Wealth quintile</b>	Lowest	70.4	91.6	91.6	78.3	71
	Second	68.1	87.5	93.6	85.3	392
	Middle	70.1	84.2	94.5	78.8	742
	Fourth	78.3	88.2	95.3	82.1	382
	Highest	90.9	84.1	92.8	80.0	276
P value	<b>&lt;0.001</b>	0.144	0.554	0.096	0.948	
<b>Remoteness*</b>	Non-remote	86.7	87.3	94.2	82.6	1311
	Remote	50.3	83	93.9	77.2	553
	P value	<b>&lt;0.001</b>	0.015	0.769	<b>0.007</b>	0.102
<b>Facility type</b>	Central Hospital	79.2	70.8	87.5	87.0	24
	Provincial Hospital	71.4	78.6	95.2	81.0	42
	District Hospital	68.4	79.5	90.2	79.8	244
	Rural hospital	65.1	78.3	91.5	76.6	129
	Urban Clinic	84.4	86.0	97.5	75.0	200
	Rural Health Centre	76.4	88.5	94.9	83.7	1,029
	Mission Hospital	60.8	84.1	93.5	81.1	107
	Mission Clinic	71.8	94.4	93.0	69.0	71
	Private Hospital	94.4	100.0	100.0	83.3	18
	P value	<b>&lt;0.001</b>	<b>&lt;0.001</b>	0.03	0.019	0.009
<b>Facility ownership</b>	Government	71.1	82.1	92.2	82.1	881
	District council	80.2	90.4	97.0	83.7	659
	Council/Municipal	86.8	85.1	93.9	69.9	114
	Mission/Church	60.9	88.0	92.7	73.2	192
	Private	94.4	100.0	100.0	83.3	18
P value	<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>0.002</b>	<b>&lt;0.001</b>	0.185	
<b>Province</b>	Manicaland	66.4	82.5	94.3	80.3	211
	Mash Central	71.7	79.0	93.5	77.8	276
	Mash East	82.9	88.6	91.5	77.0	211
	Mash West	81.4	84.4	94.8	83.8	211
	Mat North	79.1	93.2	97.9	86.3	234
	Mat South	77.4	88.1	92.1	90.7	252
	Midlands	60.9	84.2	94.4	71.1	215
	Masvingo	70.7	89.4	94.7	83.1	188
	Harare	88.9	91.7	97.2	80.0	36
	Bulawayo	90.0	80.0	90.0	60.0	30
	P value	<b>&lt;0.001</b>	<b>&lt;0.001</b>	0.183	<b>&lt;0.001</b>	0.008
	<b>Total</b>	74.5	86	94.1	81	97.5

\* Remote if travelled 10 KM or more

**Figure 11: Client satisfaction on child health by remoteness and wealth quintile**



**Figure 12: Client satisfaction on ANC by facility type**



**Table 14: Reported Client Satisfaction when accessing Child Health Services**

Variable	Accessibility and convenience (%)	Cleanliness (%)	Provider's attitude (%)	Waiting time (%)	Overall satisfaction (%)	Total (n)	
<b>Age (in months)</b>	<6	75.6	89.9	93.8	81.0	97.5	405
	6-11	72.9	82.5	90.6	78.8	93.9	395
	12-23	75.9	84.9	91.8	75.1	96.3	489
	24-35	76.2	83.3	91.3	74.5	94.4	251
	36-47	74.2	86.1	93.4	80.0	96.7	151
	48-59	80.7	88.9	93.6	79.4	97.1	171
	P value	0.524	<b>0.036</b>	0.547	0.222	0.103	
<b>Sex</b>	Male	74.4	85.8	92.6	77.8	96.1	914
	Female	76.6	85.7	91.9	77.9	95.8	948
	P value	0.268	0.947	0.592	0.937	0.760	
<b>Mother/caregiver's education</b>	Primary	71.2	87.0	93.8	77.3	96.8	629
	Secondary	78.1	85.5	91.8	78.3	95.4	1129
	More than secondary	83.3	93.3	90.0	83.3	96.7	30
	No education	69.3	76.0	86.7	74.0	96.0	75
	P value	<b>0.005</b>	<b>0.045</b>	0.114	0.702	0.546	
<b>Wealth quintile</b>	Lowest	67.5	88.0	94.0	78.1	96.4	83
	Second	71.1	86.3	93.8	77.1	95.9	387
	Middle	74.5	85.6	93.2	80.7	97.0	734
	Fourth	74.1	86.1	89.6	75.5	95.7	374
	Highest	88.4	84.2	90.5	74.8	93.3	285
	P value	<b>&lt;0.001</b>	0.904	0.115	0.188	0.129	
<b>Remoteness*</b>	Non-remote	83.6	85.9	91.8	79.3	96.2	1405
	Remote	50.7	85.2	93.5	73.5	94.9	457
	P value	<b>&lt;0.001</b>	0.689	0.255	0.01	0.237	
<b>Facility type</b>	Central Hospital	66.7	93.3	93.3	70	93.3	30
	Provincial Hospital	64.1	79.5	89.7	71.8	94.9	39
	District Hospital	73.3	81.0	90.9	75.1	94.1	221
	Rural hospital	75.5	83.5	93.5	77.6	94.2	139
	Urban/Municipal Clinic	84.6	83.0	87.9	71.7	95.6	182
	Rural Health Centre	75.4	87.0	92.9	81.2	96.7	1,051
	Mission Hospital	65.0	85.8	91.7	72.3	96.7	120
	Mission Clinic	87.1	90.3	96.8	67.2	95.2	62
	Private Hospital	88.9	100.0	94.4	82.4	94.4	18
	P value	<b>0.001</b>	0.086	0.383	0.011	0.717	
<b>Facility ownership</b>	Government	71.94	84.19	91.97	77.79	95.21	897
	District council	78.12	87.98	93.68	82.03	96.92	649
	Municipal	89.91	80.73	85.32	61.68	95.41	109
	Mission/Church	74.21	86.84	92.11	72.87	96.32	190
	Private	88.24	100	94.12	81.25	94.12	17
	P value	<b>&lt;0.001</b>	<b>0.046</b>	0.054	<b>&lt;0.001</b>	0.540	
<b>Province</b>	Manicaland	73.4	83.1	90.8	78.8	92.8	207
	Mash Central	72.2	72.6	86.9	79.2	95.6	252
	Mash East	72.8	86.6	90.8	73.7	93.1	217
	Mash West	82.4	87.1	92.4	80.5	97.6	210
	Mat North	81.0	89.9	95.8	81.4	97.5	237
	Mat South	78.4	90.7	93.3	81.9	97.4	268
	Midlands	67.1	86.7	93.8	70.6	95.1	224
	Masvingo	71.7	89.4	95.0	82.6	97.8	180
	Harare	94.6	86.5	91.9	54.1	97.3	37
	Bulawayo	83.3	90.0	90.0	63.3	96.7	30
	P value	<b>&lt;0.001</b>	<b>&lt;0.001</b>	0.029	<b>&lt;0.001</b>	0.058	
<b>Total</b>	75.5	85.7	92.2	77.9	95.9	1,864	

\* Remote if travelled 10 KM or more

### Summary of Key findings on client satisfaction

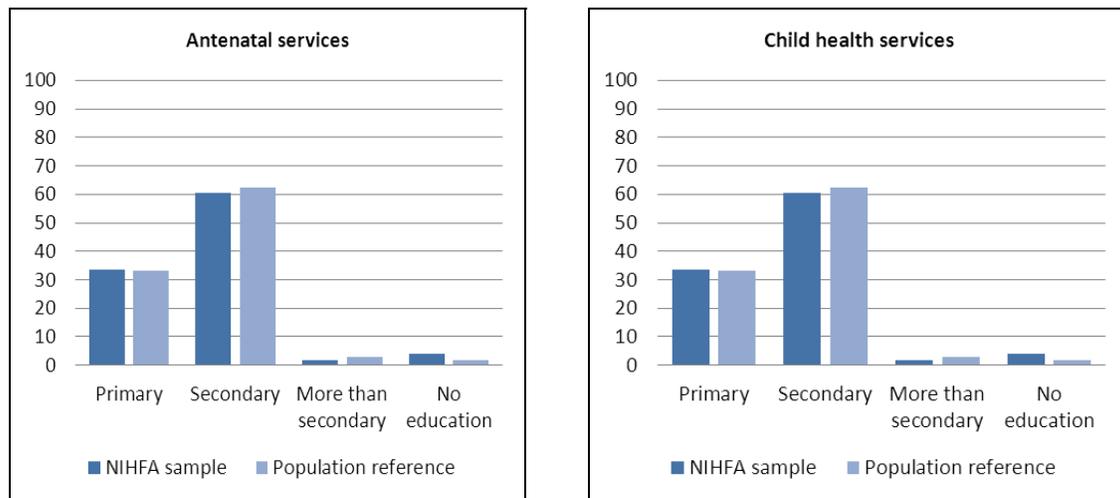
- Overall satisfaction scores were highest for clients accessing care from private health facilities.
- Municipal clinics and rural health centers had higher proportions of clients satisfied with a health provider’s attitude compared to clients accessing services at the central hospital.
- Most common dissatisfaction was on accessibility and convenience to the health centers.
- Clients from Midlands Province were more dissatisfied with accessibility.

### 4.6 Equity of access to antenatal and child health services

The equity patterns of health care utilisation among the clients were analysed in two ways. The first one was to compare the study sample with a population reference to determine the representativeness of the sample. The population reference points were obtained from the latest 2010-11 Demographic and Household Survey (DHS). In this case, the reference populations for the antenatal clients were the women in child bearing age group and the households for the child healthcare clients.

The findings (Figure 13) show that there is no difference between the sample and the population reference in consideration to their education status. This means that the education profile of the study sample is similar to the education profile in the reference population and it can be considered representative of the general population.

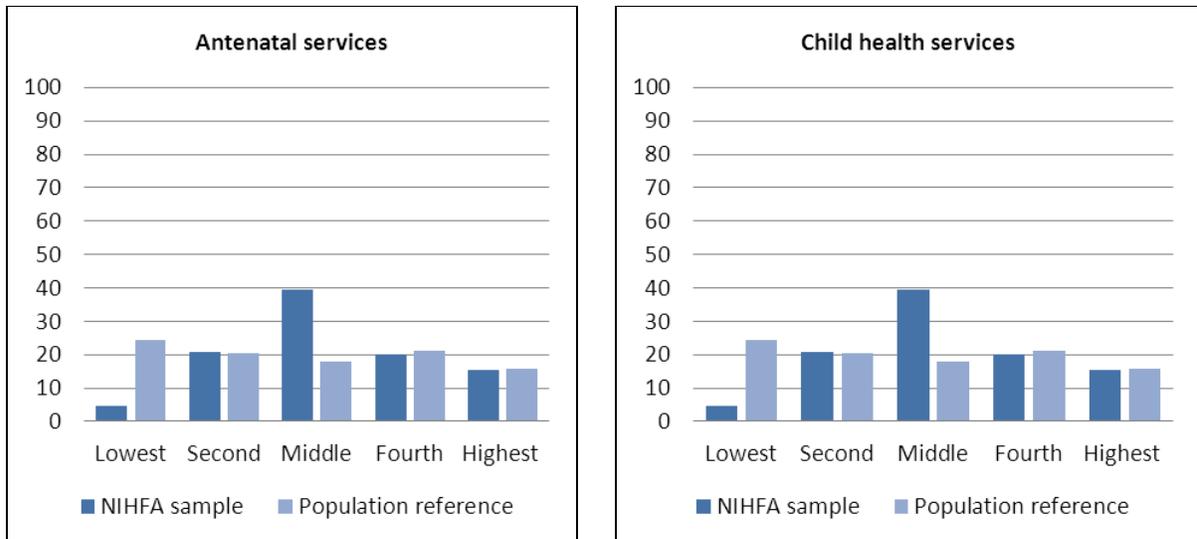
**Figure 13: Equity of access to health services by education**



However, when comparing the socio-economic profile, the study sample profile is different from the DHS reference population (Figure 14). For instance, for antenatal care, only 3.8% from the

poorest quintile were represented in the study sample compared to 19% in the reference population. While, for child health, only 4.5% from the poorest quintile were represented in the study sample compared to 25% in the reference population.

**Figure 14: Equity of access to health services by socio-economic status**



The second way of analyzing equity was a comparison of the quality of care and client satisfaction among various socio-demographic groups within the study sample itself. As regards to the quality of care for both antenatal and child health samples, there was not much variation in their mean scores for the same kind of services. As shown in Table 15, the quality of care (QoC) mean score for antenatal care ranged from 4.16 to 4.30 and 3.18 to 3.38 for child health among various socio-economic groups out of a maximum score of 5. This demonstrates that there is little differential treatment to the clients regardless of their socio-economic status while accessing care from the providers. However, the overall QoC score was higher for antenatal services than child health indicating that standard procedures are less being adhered to for child health services.

The satisfaction scores did not vary much for child health services with regard to the socio-economic status and they ranged from 3.27 to 3.38 out of a maximum of 4. However, the remote residents were more dissatisfied on the service provision than their nearer counterparts.

Among the antenatal care clients, the satisfaction was statistically significant across various wealth quintiles and remoteness. However, the perceived quality of care was similar across the wealth and remoteness categories. This means that regardless of the economic and distance travelled for care, the clients perceived receiving similar quality of care.

As far as the child health services are concerned, the perceived quality of care was significantly different between socio-economic and remoteness categories. Client satisfaction was significantly diverse among various remoteness groups.

**Table 15: Equity in quality of care and client satisfaction**

Variable		Quality of care score <sup>#</sup> Mean (95% CI)	Client satisfaction score <sup>*</sup> Mean (95% CI)
<b>Antenatal services</b>			
<b>Wealth quintile</b>	Lowest	4.20 (3.98-4.41)	3.30 (3.06-3.55)
	Second	4.20 (4.12-4.28)	3.34 (3.25-3.43)
	Middle	4.16 (4.10-4.23)	3.28 (3.22-3.34)
	Fourth	4.30 (4.21-4.39)	3.44 (3.36-3.52)
	Highest	4.29 (4.18-4.39)	3.47 (3.38-3.57)
	<b>P value</b>	0.096	<b>0.003</b>
<b>Remoteness</b>	Remote	4.25 (4.18-4.33)	3.05 (2.97-3.12)
	Non-remote	4.20 (4.16-4.25)	3.49 (3.45-3.53)
	<b>P value</b>	0.259	<b>&lt;0.001</b>
<b>Total</b>		<b>4.22 (4.18-4.26)</b>	<b>3.36 (3.32-3.39)</b>
<b>Child health services</b>			
<b>Wealth quintile</b>	Lowest	3.25 (3.06-3.45)	3.27 (3.07-3.46)
	Second	3.25 (3.15-3.35)	3.28 (3.19-3.37)
	Middle	3.38 (3.31-3.44)	3.34 (3.27-3.40)
	Fourth	3.22 (3.12-3.32)	3.25 (3.15-3.35)
	Highest	3.18 (3.06-3.30)	3.38 (3.29-3.48)
	<b>P value</b>	<b>0.013</b>	0.326
<b>Remoteness</b>	Remote	3.38 (3.30-3.47)	3.03 (2.94-3.11)
	Non-remote	3.25 (3.20-3.30)	3.4 (3.36-3.45)
	<b>P value</b>	<b>0.01</b>	<b>&lt;0.001</b>
<b>Total</b>		<b>3.28 (3.24-3.33)</b>	<b>3.31 (3.27-3.35)</b>

# For child health, determinants considered were asked age, weighed, height measured, growth chart plotted, and physically examined (maximum possible score 5); for antenatal services, determinants considered were weighed, blood pressure measured, abdomen palpated, abdomen measured with a tape, blood and urine sample given (maximum possible score 5)

\* Considering ease of access, cleanliness, provider attitude, and waiting time (maximum possible score is “4” and a higher score means more satisfaction)

#### **Key findings on equity of access to ANC and Child health services**

- For antenatal care, less than 4 per cent from the poorest quintile were represented in the study sample compared to 19 per cent in the reference population as per ZDHS 2010-11.
- Only 4.5 per cent from the poorest quintile were represented in the child health sample compared to 25 per cent in the reference population as per ZDHS 2010-11.
- Reported quality of care was higher for antenatal services than child health indicating that the standards are not being adhered to for child health services.
- Remote residents were more dissatisfied with the quality of service provision than their nearer counterparts.

## **5. Discussion**

### **5.1 Training of Health Workers**

The results from the survey observed that among all nursing cadres, provision of ANC and PNC services was 20 percentage points higher than institutional delivery services during the three months preceding the survey. This means that though the women are availing care from the health facilities for ANC and PNC services, their utilisation of the same health facilities are less for institutional delivery. There could be a possibility of women drifting away from these facilities to other facilities or providers including delivering at homes either due to higher cost of care, transportation, or perceived lack of adequate amenities. This could be also linked with the lack of training of the health workers with nearly half reported to be never trained on labour and child birth.

Training of health workers on certain key maternal and child health related areas was low. Only half of the nurse midwives had received any training on emergency obstetric and neonatal care (EmONC). More than two-thirds of the SRNs and PCNs managing the rural health centers had not received any training on EmONC. Consequently, the PCNs reported the least knowledge scores on maternal and child health. Similarly, the training on labour and delivery of all nurse professionals was very low.

In terms of latest trainings, the most common subject was HIV and AIDS. However, it is also the subject being requested by the health workers to be additionally trained. The possible reason for this paradoxical observation could be the way the trainings are delivered. For instance, the content or mode of delivery of the training might not be adequate to equip the health workers to manage the conditions confidently. In addition, having narrow or vertical training approaches might also not link with the real practice in a broad sense.

### **5.2 Knowledge Levels among Health Workers**

Health workers reported higher mean scores for child health than maternal health. This shows the inadequacy of training (pre-service and in-service) on maternal health among specifically the primary care nurses, whose scores were the lowest. However, health workers who were trained on EmONC, labour, and child birth scored significantly higher on maternal health knowledge highlighting the effectiveness and importance of continuous in-service training.

### **5.3 Health Worker Satisfaction and Motivation**

Health workers were satisfied with the relationships with various stakeholders such as PHE, DHE, HCC, and the community. However, they were dissatisfied with their current salary, employment benefits, opportunities for promotion, availability of equipment and medicines and the physical condition of the health facility buildings. There were no significant differences in their levels of satisfaction or motivation regardless of receiving regular supervision. In other words, the findings suggest that the current supervision is ineffective in keeping the motivation and job satisfaction at a higher level. The possible explanation for this could be the quality of

supervision. Some of the characteristics of quality supervision are regularity, adequate time given to each supervisee, adequate on the job mentoring, timely feedback to supervisee from the supervisor etc. The fact that the health workers at the district hospitals were reported to be the least satisfied needs to be explored more.

#### 5.4 Reported quality of delivery of Services

Differences were noticed between types of facilities and provinces with respect to the quality of delivery for the selected antenatal and child healthcare services. The standard protocols were not followed during routine antenatal and child health services. There could be a possibility of shortage of skilled health workers in certain regions or types of health facilities leading to overburdened staff and non-adherence to the protocols as the qualified workers try to cope with demand for specific services. It might also be due to inadequate regular supervision and hand-holding by the supervisors (facility, district or provincial executives). Regular supervision is essential in a context of low levels of knowledge and skills due to inadequate pre- or in-service training.

**Antenatal Care:** As per the guidelines, all eligible women should receive the standard package of antenatal services including weighing, measurement of blood pressure, palpation of abdomen and tape measure, blood and urine testing. In our sample, the women reported of receiving these services were around 90 per cent, except for blood samples (50 per cent) and urine samples (less than 10 per cent). Examination of blood and urine during routine ANC visits can detect sexually transmitted diseases and pregnancy related complications such as pre-eclampsia. If only a limited proportion of women visiting the health facilities for ANC care receive urine or blood test, the possibility of early detection of pregnancy related complications will be limited, which in turn will negatively affect the outcome of the pregnancy. The reported non-adherence to the standard guidelines could be due to too much of workload, the lack of adequate skills, regular supervision, or necessary equipment or supplies. Moreover, we can see the findings from the reported trainings received (and needed) and lack of adequate knowledge translate to the lack of providing the standard minimum package of services to the clients.

**Child Health Care:** According to the national guidelines, a standard package of services for the examination of sick children under the age of five years includes weighing, plotting the growth chart, and physical examination specific for the groups of symptoms. In this study sample, only half were informed about the illness, 65 per cent were plotted growth charts, 75 per cent were physically examined and 86 per cent were weighed. The risk of not following the standard guidelines will lead to improper diagnosis and hence treatment of the illness. Similarly, if the growth chart of a child is not plotted during the visit, it might be difficult to detect malnutrition early, which might be related to the illness he/she is presenting with.

#### 5.5 Client Satisfaction

Clients were reported to be the most dissatisfied on accessibility and waiting times. This inadequate access is due to limited ability to pay for services in the midst of poverty and transport services. The longer duration of waiting time is attributed by limited staff at health centres and their work burden. Removal of user fees and provision of adequate outreach services

of transportation facilities are some of the ways to increase accessibility. The client responses on the quality of clinical services were not indicative of the real quality of services, given their limited educational background.

### **5.6 Equity of access to antenatal and child health services**

It was observed that clients from the poorest quintile were under represented in the facility exit interviews (only 4%). There could be a few possibilities of such kind of care-seeking: (i) not accessing essential primary health care services, (ii) accessing care from informal service providers such as traditional healers or unqualified providers such as Traditional Birth Attendants. Inadequate care-seeking by socio-economically weaker population might have emerged from the lack of financial accessibility or inadequate knowledge on health conditions. In such a situation, the health system needs to reach out to the clients with outreach activities or bring the clients closer to the health system through innovative demand and supply side initiatives. Demand side initiatives are targeted to empower the clients with the ability on appropriate decision-making. On the other hand, supply side measures will strengthen the health facilities.

## **6. Recommendations**

### **A. Building capacity of health workers: Need for innovations in training delivery**

1. Strengthen and scale-up training of health workers to enhance knowledge and services delivered to patients particularly by nurses. There is a need for additional training on IMNCI, labour and delivery and EmONC.
2. Considering the fact that the health facilities are staffed just adequately or understaffed, it might be useful to design in-service training programmes for the health workers, specifically the PCNs.
3. The training programmes need to be linked with their day-to-day responsibilities and designed in a flexible manner so that it does not deprive the clients of their healthcare needs or put additional burden on other colleagues. On the job mentoring would be most beneficial to most of the health workers especially on labour and delivery.
4. Along with the training, ongoing mentoring and supervision by their supervisors will be useful and this can be built in to the supportive supervision policy by MoHCW.

### **B. Raising the quality of ANC and child health service delivery:**

1. Scaling up financing for supportive supervision and on-the-job mentoring is a key investment that will improve knowledge, skills and quality of services offered at different levels of the health system.
2. Provision of equipment in accordance with the national guidelines so that the minimum package of services can be offered.

**C. Enhancing Health Workers' Satisfaction and Motivation:**

1. Provision of positive working environment including infrastructure and supplies and motivational initiatives such as incentives and career promotion need to be considered.

**D. Ensuring equity of access to services:**

1. More numbers of village health workers (VHW) can be deployed after adequate training and establishing supporting systems to bring the system closer to the households.
2. Innovative service delivery models such as mobile clinics and health camps at regular intervals should be considered.
3. Since training a cadre of VHWs will need some time, certain demand-side measures (e.g. vouchers) can be introduced in the interim to enhance the financial access to care including transportation.
4. Supply side initiatives (such as performance based grants/ subsidies) provided to health facilities in return for free health care for specific prioritised services will reduce the formal or informal cost of accessing health care.
5. A national policy framework to support innovative health financing instruments such as health insurance for the poor, performance based health facility subsidies, free access to prioritised health services by the poor amongst others will be important given the evidence of inequitable access to health services in Zimbabwe.

# Quality of Care Observations

## 1 Overview

This final section of the National Integrated Health Facility Assessment report, presents results from the assessment of the quality of care for maternal, newborn, and child health services provided at health facilities in Zimbabwe. The main focus of this component was on assessing the health system readiness and capacity to manage common maternal and newborn complications as well as childhood illnesses. These were verified through observing day-to-day clinical practices. Again the results are meant to compliment findings from other components of the study. Specifically the Quality of Care component of NIHFA had the following objectives.

- I. To assess the readiness of health facility infrastructure, supplies and medicines for the management of maternal complications, newborn complications, and childhood illnesses
- II. To assess the health provider knowledge of evidence based practices in maternal and newborn health
- III. To assess the compliance of health providers with globally and nationally accepted standards for clinical practice in ANC, L&D, PNC, and IMNCI.

The findings provide some of the answers to respond to the following key questions that were set at the start of the overall NIHFA:

- What is the quality of services being provided with current levels of resources and tools?
- Have we ensured equity in the delivery of essential health services?
- What do we need to do to improve the quality and equity of health services in Zimbabwe?

## 2 Methodology

### 2.1 Study Design

This was a descriptive cross-sectional national health facility survey to study the quality of maternal, newborn and child care practices at health facilities in Zimbabwe. The QOC component looked at three aspects of quality: 1) facility readiness to provide quality MNC care 2) the knowledge of health workers on Maternal, Newborn and Child health issues 3) the compliance of health workers with accepted standards for clinical practice in MNCH.

### 2.2 Sampling

The number and overall sampling of hospitals included in this component of the study have already been highlighted on P165. A total of 309 health facilities was included in the sample.

### 2.2.1 Sampling of health workers for knowledge test

The target for hospitals and city clinics was to interview 4 Health Workers (HW) per facility. The 4 HWs were randomly selected from a line list of HWs who normally provide MNH services at that facility. The target for Rural Health Centres (RHC) was 2 HWs. RHCs typically have 2 HWs on duty per day.

### 2.2.2 Sampling of clients for case observations

The study used the WHO recommended two tier hierarchical organisation of services for managing MNCH emergencies, that is, the basic and the comprehensive EmONC types of facilities. Applying this concept to the types of facilities in Zimbabwe generated two clusters: CEmONC type cluster of facilities comprising of all hospitals, and BEmONC type cluster comprising of all city clinics and rural health centres. The sample size calculations treated these two levels as two different ‘clusters’.

The size of the sample required was calculated based on the intention to reject a hypothesis of 20% non-compliance with standard practice in ANC, L&D, PNC, and IMNCI. The minimum sample size that best satisfied these requirements for all components of MNCH was 250 observations. This was calculated using the ‘proportion of cases where HWs correctly screened for Pre-Eclampsia and Eclampsia (PE/E) in Labour & Delivery’.

Having considered the budget, the logistics of performing the clinical observations, the expected caseloads over a limited period of days at a facility, the need to also assess low volume facilities, intra-cluster variations, and the need to be able to generalise results at the national level, the sample target of 250 was distributed within each cluster as shown in the Table 1 below:

**Table 2: Planned sample size and sample distribution for clinical observations**

Type of facility	Number included in sample	Planned Number of observations				
		ANC	L&D	PNC	Sick Young infant	Sick Child
Central hospital	6	5	15	5	2	4
Provincial hospital	8	5	15	5	2	4
Private hospital	3	5	6	5	2	4
*District hospital	47	5	6	5	2	4
<b>Total for cluster 1</b>	<b>64</b>	<b>320</b>	<b>510</b>	<b>320</b>	<b>128</b>	<b>256</b>
City clinic	10	5	6	5	2	4
Rural health center	235	2	*1	2	1	2
<b>Total for cluster 2</b>	<b>245</b>	<b>520</b>	<b>295</b>	<b>520</b>	<b>255</b>	<b>510</b>
<b>Total Sample</b>	<b>309</b>	<b>840</b>	<b>805</b>	<b>840</b>	<b>383</b>	<b>766</b>

The number of observations per cluster satisfied sample size requirements for all the components, with allowances made for incomplete and missing data. From the onset it was known that the expected number of deliveries per day was going to be less than 1, so the analysis aggregated data from both clusters. It was also expected that the planned sample for sick young infants was unlikely to be met but since both age groups are managed through a similar IMNCI approach, the researchers felt that analysing observations from both age groups would be adequate to show trends in health worker practices.

At facilities where the expected daily case load of clients exceeded the daily target for the sample, clients for observations were selected through a systematic random sampling method. The sampling interval was calculated from the case load as recorded in the registers for the particular service for the same day of the previous week.

The study protocol therefore proposed a total of 309 health facilities for inventory, 766 health workers for knowledge test, 840 ANC observations, 805 L&D observations, 840 PNC observations, 383 sick young infant observations, and 766 sick child observations.

## **2.3 Data Collection Instruments**

There were six separate data collection instruments. One instrument for each of the following: health facility essential inventory; HW information and knowledge test; ANC observation checklist; L&D observation checklist; emergency obstetric and newborn complications observation checklist; PNC observation checklist; and IMNCI observation checklist. All tools were pre-tested prior to their use (see below). A summary of the content of each instrument and various sections are described below.

### **2.3.1 Structured clinical observation checklists**

These were a set of concise, structured clinical observation instruments used for observation of ANC, L&D, PNC and IMNC consultations at health facilities.

The content of the checklists for the MNH component was based on the World Health Organisation's IMPAC manual and guidelines for screening for PE/E in ANC and L&D; management of PE/E and Postpartum Haemorrhage (PPH); routine and correct use of the partograph; routine and correct use of Active Management of Third Stage of Labour (AMSTL); correct essential postpartum and postnatal care; correct essential newborn care and newborn resuscitation; Infection Prevention (IP) behaviours; and provider-client interaction/communication.

Client background information collected included age, gravidity, and parity. The tools also captured the qualifications of the provider and level of care provided by the health facility (tertiary care, hospital, health center, etc.). The forms were adapted from the Jhpiego ACCESS Program's *Best Practices in Maternal and Newborn Care: Learning Resource Package on Best Practices in Maternal and Newborn Care* (ACCESS 2008). The routine labour and delivery clinical observation checklist was adapted from the instrument used by Program on the Prevention of Postpartum Haemorrhage Initiative (POPPHI) in their survey on AMTSL. The

content of the checklists for IMNCI was based on the 2012 IMNCI series adapted by the MoHCW from the WHO/UNICEF IMNCI guidelines.

### ***2.3.2 Health care worker interviews***

The health care worker interview covering MNH, included both quantitative and qualitative components. The first section of the instrument collected information from health workers on clinical qualifications; training and experience providing ANC, L&D, and newborn care services; and supervision. The second half of the tool was composed of questions that tested the provider's knowledge on managing normal labour and delivery with sections on: identifying, managing, and treating common maternal and newborn health complications, including obstructed labour, PPH and sepsis.

### ***2.3.3 Facility inventory***

The facility inventory instrument was used to assess the infrastructure conditions and verify the availability of and storage conditions for medications, supplies and equipment. The inventory was conducted once per facility. Through interviews with the head of the health facility or their designee, a listing was also generated of all health workers who attend deliveries, treat sick children /or provide ANC care, PNC care.

All the tools used in the study, except the PNC & IMNCI checklists have been used in similar surveys undertaken in several countries like Rwanda, Tanzania and Ethiopia.

## ***2.4 Data Collection Process***

Data collection was carried out by 64 health care workers working in 16 teams of four – each team had one team leader, two MNH enumerators and 1 IMNCI enumerator. The 32 enumerators for MNH were currently practising nurse midwives who had completed EmONC Lifesaving Skills training within the two years prior to the survey. The 16 enumerators for IMNCI were practising nurses trained as IMNCI national trainers. The 16 supervisors, made up of nurses and doctors, were drawn from EmONC national trainer of trainers for EmONC/HBB and IMNCI. These supervisors and enumerators were all currently practicing nurses and doctors within the Ministry of Health and Child Welfare.

The survey instruments were reviewed and pre-tested during an initial orientation workshop for supervisors led by the NIHFA QOC consultant with support from technical partners including MCHIP and UNICEF from the 8<sup>th</sup> to the 13<sup>th</sup> of November 2011. Local facilitators trained data collectors for the survey during a 14-day training session (19 November to 1 December 2011) in Harare, Zimbabwe. The training comprised of 2 days of knowledge and skills update for EmONC and IMNCI separately; 10 day training on standardisation of clinical skills observation and use of smart phones for data collection; and 2 days of practical field testing. The trainings included briefings on the background and rationale of the study, a description of the research tools, and technical instructions on using a Windows Mobile/HTC smartphone for data collection. The trainees also had an opportunity to go to the field and practice using the smartphones for data collection.

Data collection was conducted from 14 December 2011 to 20 January 2012.

The teams had a schedule to spend 3 days at a central hospital, 2 days at all others hospital level facilities and urban clinics, and 1 day at RHCs. Typically the team arrived early in the morning and allocate responsibilities as follows: the team leader would administer the health worker knowledge and information tool; the IMNCI enumerator would observe IMNCI cases; and the MNH enumerators would observe ANC, L&D, and PNC. For labour and delivery the MNH enumerators would ensure that a 24 hour observation shift is covered. In a few cases, there were call backs to reach the adequate sample size per health facility.

## ***2.5 Data Entry and Analysis***

Survey data was recorded by data collectors on smartphones using custom-created data entry programmes developed with the PocketPC Creations software package running on a Windows mobile platform. Logic, skip and consistency checks were built into the programmes. Data collectors were trained to review records for missing or inconsistent answers before submission. Depending on local capabilities, the data from each handheld device was either uploaded directly to a central database at the end of each day or backed up to a secure digital card to be uploaded when the data collectors returned from the field. At the end of the data collection period, all of the data files from all sixteen teams were linked and merged into a central database. After data cleaning, a support team from MCHIP/Washington, generated a standard set of online tables and graphs using a custom-designed ColdFusion backend for all components except PNC and IMNCI. For the later, data was stored in Excel and analysed by local study investigators. Additional analysis was carried out in Excel and using SPSS software for variables that were not included in the programme used to generate the standard sets of online tables. In cases where enumerators faced problems with smartphones, data was captured in paper form before being uploaded into the smartphones in the field or after the field work at the central office.

Simple frequencies were calculated for the outcome variables. The outcome variables were facility readiness, HW knowledge, and quality of care. The outcome variables were also analysed in relation to the background characteristics of the respondents such as age, sex, education, socio-economic status, training, type of health facility, ownership of the facility, and province. The construction of the scores is described below.

**Health worker knowledge score:** Each question contained sub-sections on theory, appropriate diagnosis and management of the case. The questions were posed without any clue or lead so that there was no opportunity for the respondent to guess a response from the list. The responses were equally weighted to balance their scores. Full knowledge was set at 100% and any score below that level was considered ‘less than full knowledge’.

**Quality of care score:** Each item on the checklist was scored ‘1’ if it was performed and ‘0’ if not. After creating a composite score through averaging with equal weights, a mean per cent score was then calculated as an aggregate quality of care score. The mean per cent score had a

maximum possible score '100%' for components of ANC, L&D, PNC, and IMNCI. Here, a higher score meant a higher quality of care delivered to the client.

**Facility readiness score:** Each item on the inventory list was scored '1' if it was available/or functional and '0' if not. After creating a composite score through averaging with equal weights, a mean per cent score was then calculated as an aggregate availability and functional status of the items. The mean per cent score had a maximum possible score '100%'. Here, a higher score meant a higher degree of facility readiness in the area assessed.

## ***2.6 Ethical Considerations***

Ethical approval was sought and obtained from the Medical Research Council of Zimbabwe and the Institutional Review Board (IRB) of Johns Hopkins Bloomberg School of Public Health (JHSPH). The JHSPH IRB ruled the protocol exempt from review. Informed written consent was obtained from all participating health providers, heads of health facilities, and patients. All informed consent forms were translated into Shona and Ndebele. The Principal Investigators were all required to pass the human subjects research training course prior to participating in the study. The study team realised that women may come in with obstetric complications and are either too ill, such that they are mentally incapacitated, or are unconscious and unable to give consent. Because these cases were very important in the assessment of quality of care, approval was sought to obtain consent from the next of kin in these circumstances.

## ***2.7 Limitations***

The study had a number of limitations. Firstly, even though the sampling approximated national representation of health facilities, only 5 rural health centers per district could be sampled, which was recognised as not being necessarily representative of the number of primary level health facilities. This means the results need to be interpreted from a national perspective rather than being a representation of the different levels of care. Secondly, the deliveries at lower level health facilities were too few to allow for analysis of results by level of health care. Thirdly, the large size of the tools and due to the breakdown of some smart phones contributed to significant missing data and incompleteness of details reported. Finally during the course of the assessment the QOC consultant resigned and a new consultant was recruited in January 2012. This meant that substantial additional support had to be provided by technical partners from the NIHFA working group to analyse the results, causing delays in the production of the final report.

### 3 Findings from the Maternal and Newborn Quality of Care Observations

#### 3.1 Overall sample coverage

Table 2 below shows the actual sample coverage for all components of the study.

**Table 3: Sample coverage for all components of the QoC study**

Type of facility	Health facilities	Planned Number of observations					Health Worker knowledge	Facility inventory
		ANC	L&D	PNC	Sick Young infant	Sick Child		
Planned sample	309	840	805	840	383	766	766	309
Actual sample	303	720	476	566	114	441	662	303
<b>Sample coverage (%)</b>	<b>95</b>	<b>86</b>	<b>59</b>	<b>67</b>	<b>30</b>	<b>58</b>	<b>86</b>	<b>98</b>

Sample coverage was high for facility inventory, knowledge test, and ANC. Cases of sick young infants were few. At some facilities no deliveries were taking place on the day of the survey, especially at lower level facilities, which deliver about 3 women per month. PNC was affected by the fact that in some provinces and districts there were fixed days of the week established for routine PNC, so enumerators could not find cases at some of the facilities.

#### 3.1 Negative Outcomes observed

Table 3 below shows the number of overall complications and negative outcomes observed. There were 43 cases of asphyxia, 18 postpartum haemorrhages, 9 fresh stillbirths, 1 newborn death, and no maternal or child deaths observed during the survey.

**Table 4: Negative outcomes observed**

Maternal, Newborn and Child health Outcomes	Nos. of Cases observed
Postpartum haemorrhage	18
Pre-eclampsia/eclampsia	6
Neonatal asphyxia	43
Death of newborn	1
Stillbirths	9
Death of mother	0
Death of child	0

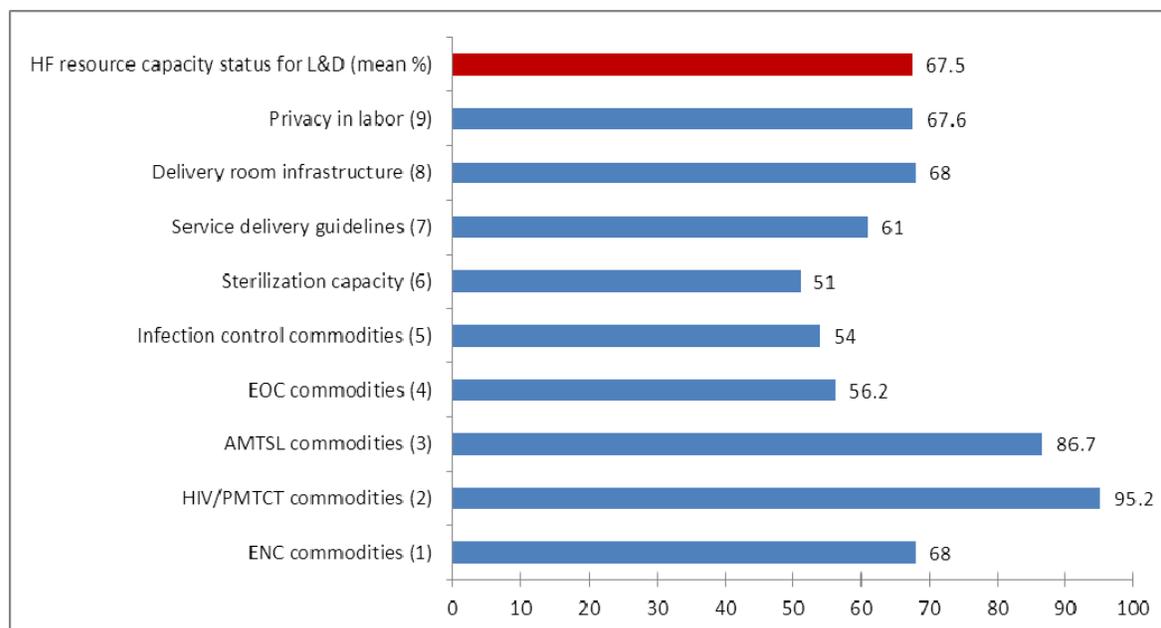
## 3.2 Facility Readiness

The ability to deliver quality maternal and newborn care at the facility level is dependent on several key factors being present at the same time and in the same place. These factors include adequate numbers of skilled, trained and knowledgeable health providers, a functioning supervisory structure, sufficient infrastructure, functioning equipment and an adequate stock of medicines and other supplies. The EQoC study was nested within the broader NIHFA, which extensively assessed the facility readiness elements. Having regard to the time lag between data collection dates for the NIHFA and for the EQoC and the potential changes in the availability and status of some of these elements, the EQoC component also assessed some of these factors on the day of the clinical observations. This section reviews the requisite components for the provision of care at the facilities assessed on the day that clinical observations were carried out during the study.

### 3.2.1 Availability of Essential Medicines and Supplies

The quality of care provided at a health facility (HF) depends on the availability of commodities and infrastructure required to support the care delivery process. In this study, the availability medicines, supplies, equipment, infrastructure, guidelines, and partographs for normal L&D were assessed.

**Figure 1: Mean percent scores for availability of medicines, supplies, and infrastructure for Labour & Delivery at health facilities (N=278)**



The 278 health facilities surveyed with complete data were operating at an average of two thirds (67.5%) of the resource capacity necessary to deliver quality L&D services. Medicines were generally available in most facilities. The infrastructure was on average at two thirds of the expected standard capacity. Infection control commodities and sterilization equipment were

available in half the facilities. The specific items assessed under each area and the availability status on the day of the study is attached as Annex 11.

### 3.2.2 Health Worker Knowledge in Management of Obstetric and Newborn Complications

A common reason why actual practice deviates from expected practice is that providers lack the pre-requisite knowledge that underpins the task. In this study a knowledge test was administered to HWs providing the MNH services. The knowledge test comprised of multiple choice questions and a simulation of newborn resuscitation. The results from the study are presented below.

#### a) Characteristics of Health Worker respondents

Complete data from the knowledge test was available for 640-647 health workers. Nearly all (92%) respondents were nurses, with 6.8% being Nurse Aides and less than 1% being nursing students.

**Table 4: Characteristics of Health workers assessed for knowledge of MNH (N=659)**

Health workers participating in knowledge test	Nos. of HW's interviewed in this category	Per cent of HW's *(N=659)
Nurse /Nurse Midwife	602	92.5%
Other	49	7.5%
<b>Type of facility</b>		
Hospital	78	11.8%
Health center	564	85.6%
<b>Years since completion of basic training (yrs)</b>		
0 to 5	432	65.3%
5 to 10	104	15.7%
10 to 20 years	72	10.9%
20+ years	54	8.2%
<b>Age of providers (yrs)</b>		
less than 25	7	1.1%
25 to	123	18.9%
30 to	262	40.2%
40 to	163	25.0%
50+	96	14.7%
<b>Sex of providers</b>		
Female	526	80.1%
Male	131	19.9%
<b>Services provided as part of current position</b>		
Antenatal care	613	94.6%
Delivery care	593	91.5%
Newborn care	615	94.9%
<b>Received technical support or supervision</b>		
Yes, in last 3 months	534	82.3%

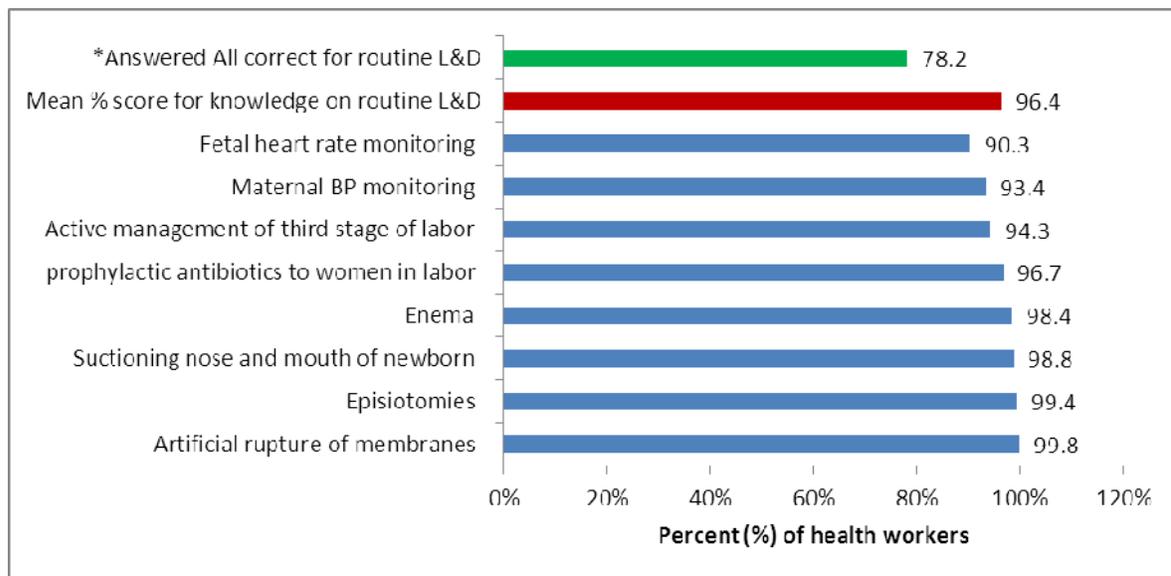
The majority of HWs were from first rural health centers (85.6%), most were relatively young with 60% being under 40 years of age, and about a third (65.3%) having had less than 5 years of experience. Eighty two percent reported to have received supportive supervision in the 3 months prior to the survey.

The knowledge test covered the following topics: practices in managing routine L&D; PMTCT of HIV in L&D; AMTSL; immediate care of the newborn at birth; PPH secondary to uterine atony; and antibiotics for postpartum endometritis after vaginal delivery. The results are presented below in Figure 2.

**b) Health workers knowledge on routine Labour & Delivery**

Health workers had very good knowledge on routine Labour and Delivery, with nearly every HEALTH WORKER correctly answering all items being asked. Over three quarters (78.2%) got all answers correct.

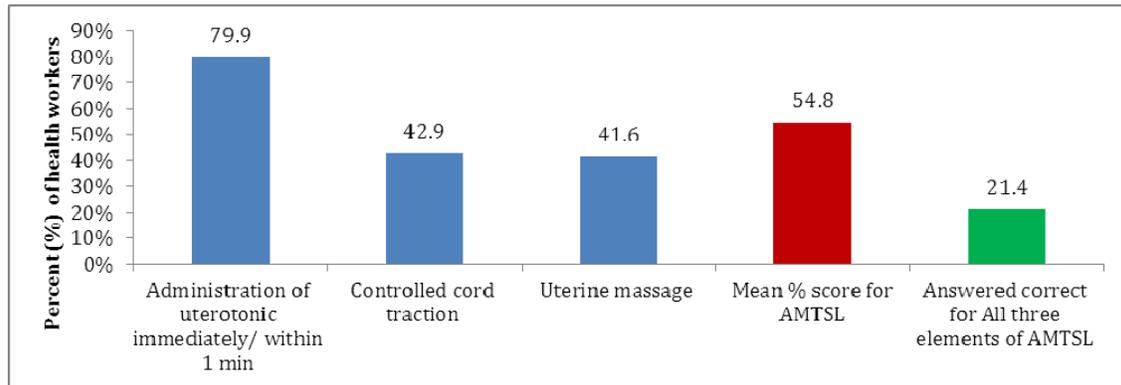
**Figure2: Percentage of Health Workers with correct responses for knowledge test in routine L&D (N=640)**



**c) Health workers knowledge on Active Management of Third Stage of Labour**

Nearly all health workers correctly identified AMTSL as part of routine L&D. This question sought to assess the Health worker knowledge level on specific components of AMTSL.

**Figure 3: Percentage Health Workers with correct responses for knowledge on AMTSL (N=646)**

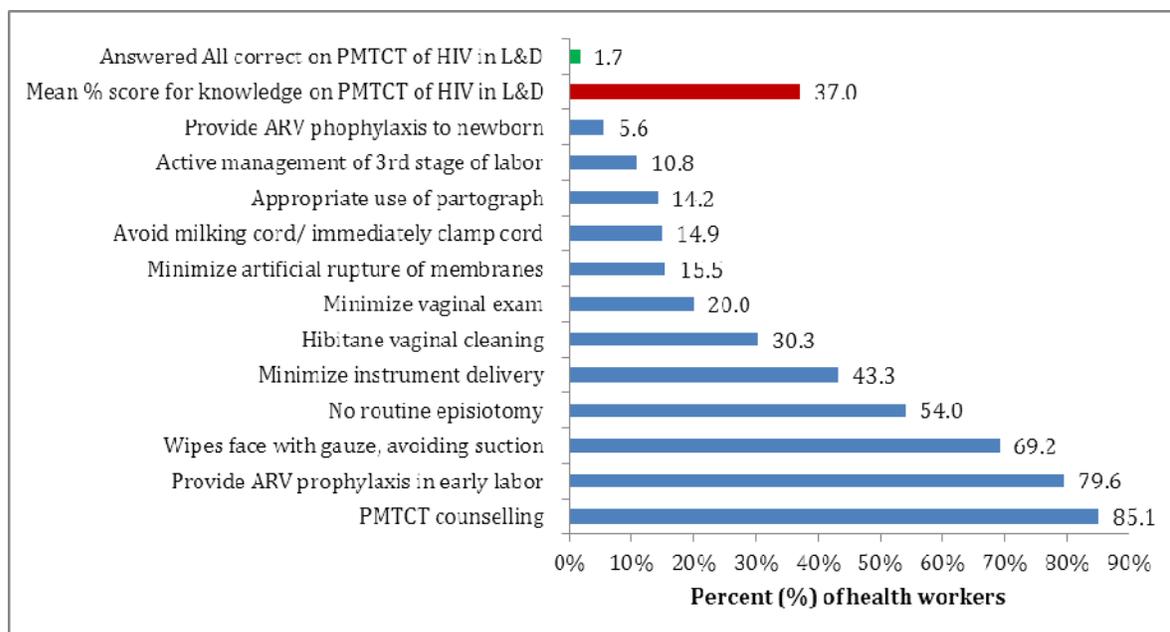


A fifth of the health workers interviewed answered correctly ALL three elements of AMTSL. The majority of the HWs correctly answered the element on immediate administration of an uterotonic.

**d) Health Workers knowledge on PMTCT of HIV in L&D**

Health Workers had about a third of the knowledge on PMTCT of HIV in L&D. Less than 2% of the health workers answered all questions on PMTCT correctly. Health workers were fairly knowledgeable (above 75%) on general aspects of PMTCT but had limited knowledge (below 30%) on the specific birth practices in L&D that support PMTC of HIV.

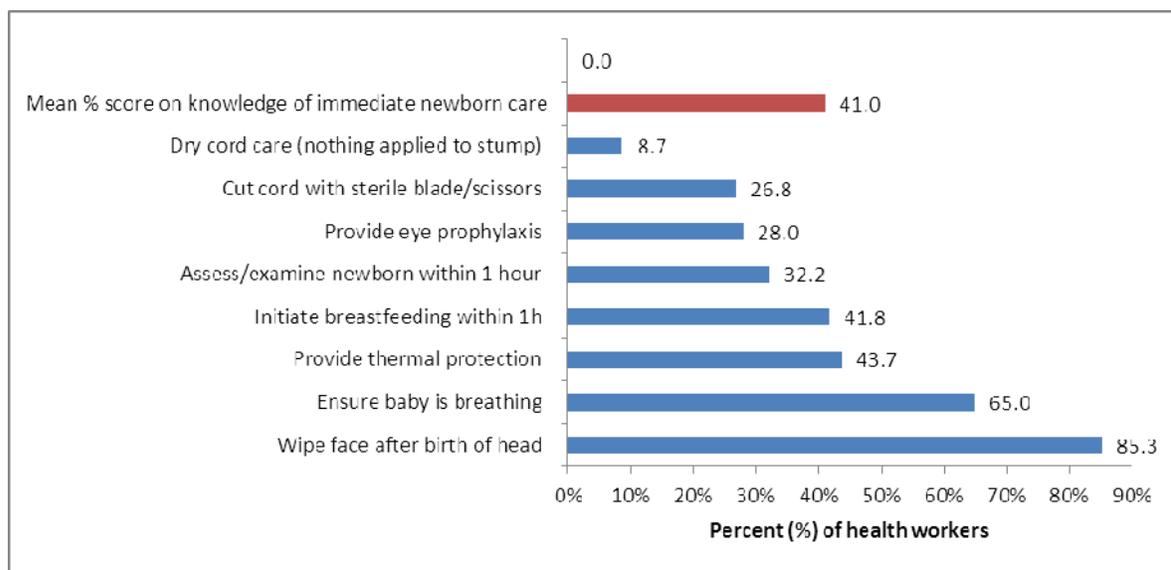
**Figure 4: Percentage of Health Workers with correct responses for knowledge on HIV/PMTCT (N=646)**



*e) Health workers knowledge on immediate essential newborn care practices*

On average health workers correctly answered 41% of the questions on essential newborn care as shown in Figure 5 below. No Health worker answered all the questions correctly in this category. A large number of health workers, over two thirds, did correctly answer questions on general traditional aspects of newborn care, like wiping face and checking for breathing. The health workers were however less knowledgeable on specific technical aspects of essential newborn care aimed at clearly defined specific interventions and practices in managing a newborn at birth, like eye care, cord care, initiating breastfeeding within 1hour. Less than a third of HWs got these targeted questions correct.

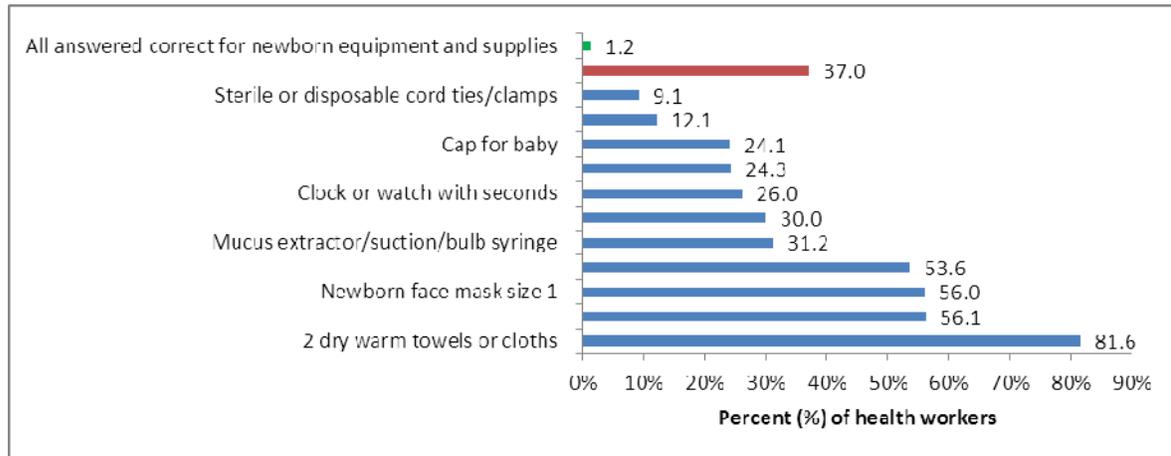
**Figure 5: Percentage of Health Workers with correct responses for knowledge on essential newborn care practices (N=640)**



*f) Health Workers knowledge on essential newborn care (equipment and supplies)*

Health workers were asked about the type of essential equipment that is required to deliver standard newborn care. The knowledge pattern on required ENC equipment was similar to that for ENC practice analysed above, with a mean percent score of 37% and about 1% of the health workers identifying correctly all the relevant items.

**Figure 6: Percentage of Health workers with correct responses for knowledge on equipment for essential newborn care (N=647)**

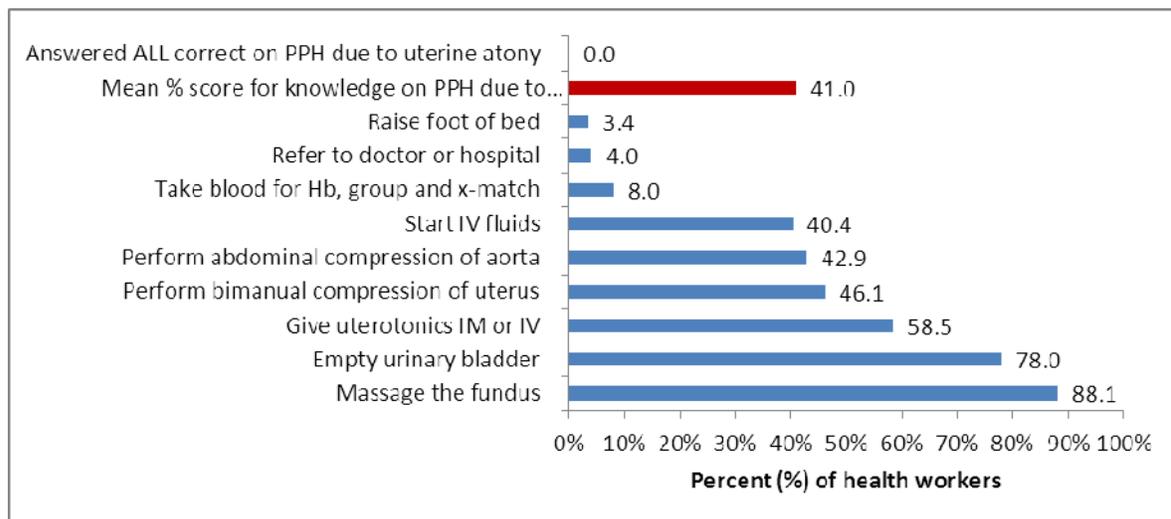


**g) Health Workers knowledge on obstetric emergencies**

**Knowledge on PPH**

Health Workers correctly answered on average 40% of the questions on Postpartum Haemorrhage (PPH) secondary to uterine atony. No health worker answered all questions on PPH correctly. Massaging the uterus and emptying the bladder were correctly answered by over three quarters of the health workers. Tasks like raising foot of bed, preparations for blood transfusion were correctly identified by very few HWs. Starting IV fluids, a cornerstone of PPH management, was answered correctly by less than half (40.4%) of the HWs. The same applied to potentially life saving manoeuvres like abdominal compression of the aorta and bimanual compression of the uterus.

**Figure 7: Percentage of Health Workers with correct responses for knowledge on PPH (N=647)**



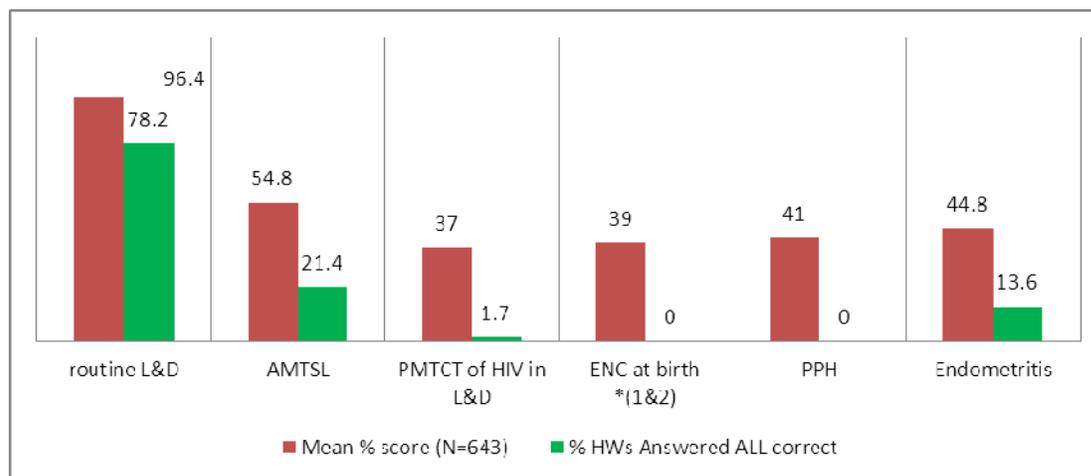
### Knowledge on postpartum endometritis

About a tenth of the 647 health workers correctly mentioned all the 3 antibiotics for treating postpartum endometritis. The majority of the health workers mentioned Metronidazole (78.7%) but only about a third mentioned either Ampicillin or Gentamycin, which are the standard antibiotics used in the management of postpartum endometritis.

### 3.2.3 Summary of health workers knowledge on Maternal and Newborn Health

The following Figure 8 summarises the scores for HWs knowledge on various elements of L&D, including essential newborn care and managing common MNH emergencies.

**Figure 8: Percentage of Health Workers with correct responses for knowledge on all components of L&D (N=640)**



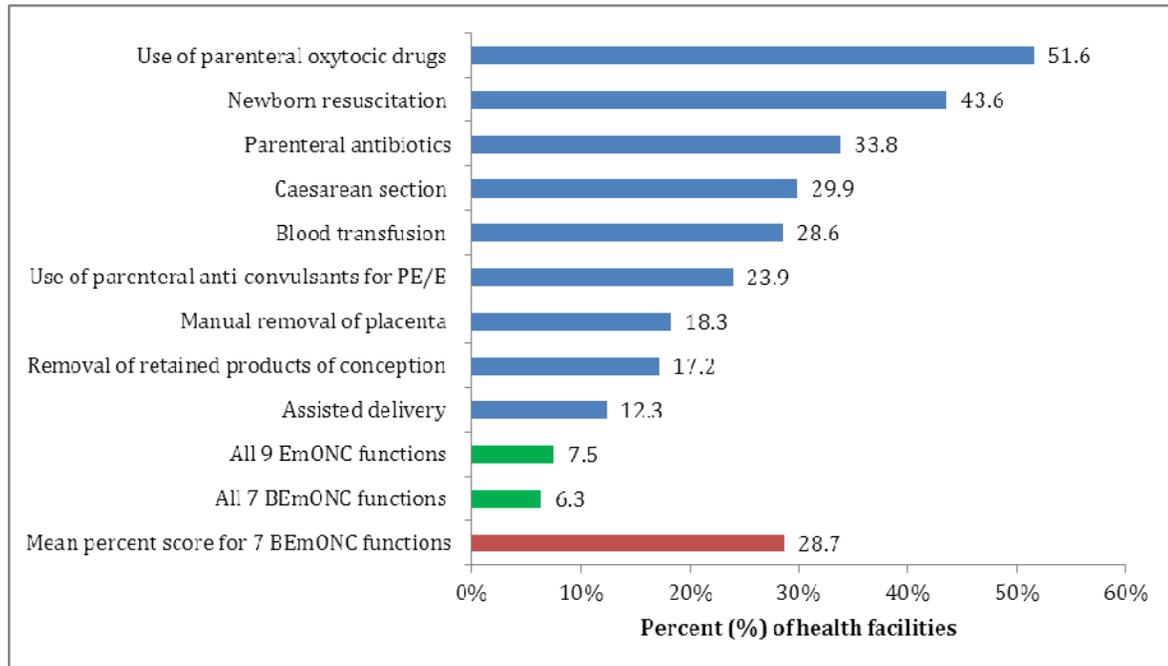
The knowledge scores for health workers were generally below expected standards to support the provision of quality Maternal and Newborn Health services.

### 3.2.4 Coverage of BEmONC and CEmONC Signal functions

Based on globally accepted UN standards, there are 7 basic signal functions that a facility designated as providing basic emergency obstetric and newborn care must perform 24 hours a day, 7 days a week, consistently for at least 3 months. This is slightly different from the definition used in the first part of this report, which did not include essential newborn care as part of the definition. A facility designated as offering CEmONC must not only satisfy the requirements of a BEmONC, but must also perform caesarean sections, and provide blood transfusions.

The readiness of facilities to manage obstetric and newborn care emergencies was measured in two ways. First, by assessing the coverage of facilities in performing UN signal functions in the 3 months prior to the survey. Secondly, by carrying out a facility inventory to assess the availability of medicines supplies, and equipment, which are required to perform the signal function tasks. For common newborn complications, further analysis is provided covering thermal care for LBW babies, and commodities required to manage neonatal sepsis.

**Figure 9: Percentage of Health Facilities meeting criteria for provision of Signal functions (N=253 for BEmONC & N=147 for CEmONC)**



Sixteen (6.3%) of the 252 facilities expected to provide the 7 signal functions satisfied the criteria for BEmONC during the survey period. Eleven (7.4%) of the 147 hospitals assessed met the standards for CEmONC. Use of parenteral oxytocic drugs and newborn resuscitation were functions performed in the largest percentage of facilities (51.6% and 43.6% respectively), while assisted instrument delivery and manual removal of the placenta had the lowest scores (12.3% and 18.3% respectively). Blood transfusion and C/S had comparable coverage of about 29%.

**Table 5: Percent of Health facilities with medicines and supplies for signal functions**

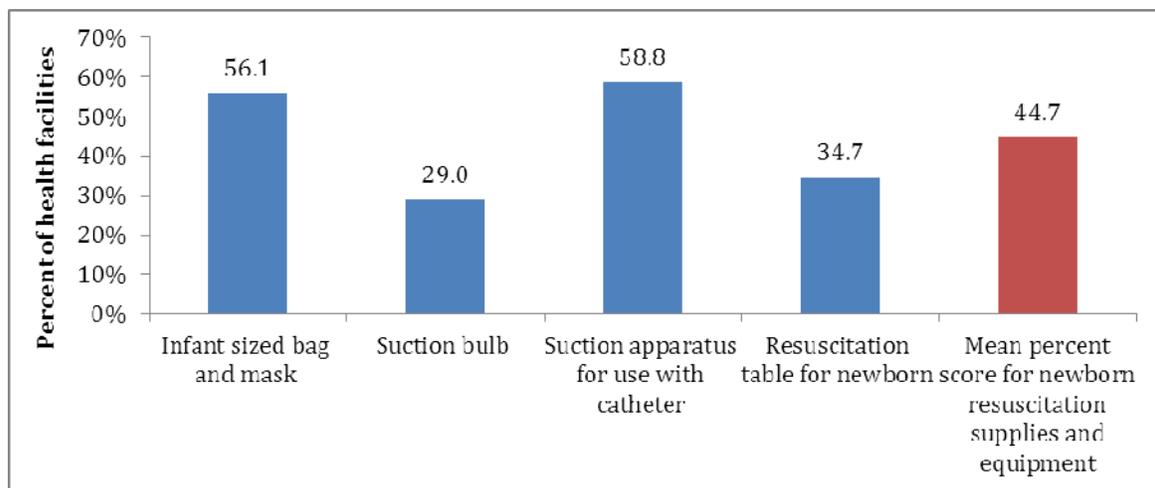
Availability of medicines, supplies and equipment for BEmOC	Facilities with reported data (N)	Number of Facilities with item	Per cent of Facilities with item
Parenteral antibiotics (ampicillin or gentamicin)	279	122	43.7%
Parenteral uterotonic (*oxytocin or ergometrine)	279	223	79.9%
Parenteral fluids (R/L, N/S, 5%D/W)	275	235	85.5%
Parenteral anticonvulsant (Injectable **magnesium sulfate/diazepam)	279	237	84.9%
***Functioning Forceps or Ventouse	257	41	16.0%
<b>Mean per cent score for availability of medicines, supplies and equipment for BEmOC</b>			<b>73.5%</b>

Notes: \*Oxytocin - 79.6% \*\*Magnesium Sulphate 4-13.9% \*\*\*item excluded from calculation of MPS

Table 5 above shows results for the inventory of supplies and medicines that are needed for the provision of each of the 9 signal functions. On average a facility had 3 of the 4 items (73.5%) required to provide basic signal functions. About 80% of the facilities had a parenteral uterotonic, IV fluids, and a parenteral anti-convulsant. Ampicillin or Gentamycin was available in less than half (43.7%) of the facilities. Few facilities, 14% and 16% had Magnesium Sulphate or equipment for assisted instrument delivery respectively. The lack of essential commodities has therefore a bearing on the number of sites who were observed to be able to perform the basic maternal and newborn signal functions.

The analysis Figure 10 below shows that on average less than 2 out of the 4 items needed for newborn resuscitation were available at a facility with the Mean Percent Score being 44.7%. Suction apparatus (58.8%) and infant sized bag and mask (56.1%) were the two items found in the largest per cent of facilities, while a resuscitation table was found in 34.7% of the facilities.

**Figure 10: Percentage of facilities with newborn resuscitation supplies and equipment (N=274)**



**a) Facility preparedness for CEmONC**

**Caesarean sections**

The facility readiness to perform Caesarean Sections was measured by assessing for the availability of the following: an operating theatre table and light; anaesthetic medicines, equipment and supplies; availability of Health Workers who can perform C/S 24 hours a day, 7 days a week; and Health Workers who can perform anaesthesia 24/7. The results are presented below in Table 6 below.

**Table 6: Resources for Caesarean section and availability status by number of facilities (N=141)**

Availability of medicines, supplies, equipment, and personnel for Caesarean section	Facilities (N)	Number of Facilities with item	Per cent of Facilities with item
Operating table	140	47	33.6%
Operating light	141	44	31.2%
Anaesthesia giving set	142	41	28.9%
Scrub area adjacent to or in the operating room	140	54	38.6%
Tray, drum, or package with sterilized instruments ready to use	141	55	39.0%
Halothane	139	43	30.9%
Ketamine	139	53	38.1%
Health worker who can perform C-section present or on call 24hr/day (schedule observed)	149	36	24.2%
Anaesthetist present or on call 24hr/day (schedule observed)	147	40	27.2%
<b>Mean per cent score for C-section</b>			<b>32.4%</b>

On average health facilities had 3 of the 9 items assessed available and ready for C/S. The availability of health workers who can either perform a C/S or provide an anaesthetic appeared to be the most limiting factor in providing these emergency services.

#### **Thermal care for Low Birth Weight babies**

Prematurity/low birth weight is a major cause of neonatal mortality in Zimbabwe. Thermal care is an important intervention to manage LBW babies. The study assessed the availability of a functioning incubator or another functioning heat source. About 10% (11.6%) of the facilities had a functioning incubator and 16% had any other functioning heat source.

## **4 Routine Antenatal Care**

Antenatal care provides a platform for pregnant women to receive interventions that can impact on maternal and newborn outcomes. The WHO recommends Focused Antenatal Care (FANC), as the most effective and efficient model for the provision of care to pregnant women. The FANC model is premised on the realisation that for the majority of women (about 75%), pregnancy will proceed to labour and delivery without adverse events. This group of women can be identified in ANC and offered routine basic ANC over 4 ANC visits. The remaining women (25%) will require the routine basic package of care plus additional care based on their specific health and socio-demographic circumstances. According to the WHO, the focus areas to be covered over the 4 FANC visits which were assessed in this study are:

- **Screening women for health and socio-economic conditions likely to increase the possibility of specific adverse outcomes.** This was assessed by observing care practices in 5 areas including: Initial history taking in 1st ANC visit; Screening for danger signs; Screening for current health problems; Screening for past obstetric problems; Screening tests for common conditions; and Screening for Pre-eclampsia/Eclampsia.
- **Providing therapeutic interventions known to be beneficial.** This was assessed through two components covering: Providing preventive interventions; and counselling on taking preventive treatments
- **Educating pregnant women about plans for safe births, and how to deal with emergencies during pregnancy.** This was assessed by observing: health education on danger signs; and health education on birth planning
- **Providing women with information on how to plan for postpartum and postnatal care.** This was assessed comparing care to standards on: health education on the continuity of care, including postnatal care.

#### 4.1 Characteristics of ANC cases

A total of 742 ANC observations were made. 54% were seen at a hospital level facility. The majority (55%) of ANC cases were managed by midwives, with only 1% managed by doctors. Some of the characteristics of the ANC cases observed are summarised in Table 7 below.

**Table 7: Characteristics of pregnant women observed receiving ANC**

Characteristic	Nos. of cases observed	Per cent of cases
<b>Gestational age at visit (n=742)</b>		
< =20 weeks	89	12.0%
21-36 weeks	480	64.7%
>= 37 weeks	166	22.4%
Unknown	7	0.9%
<b>Total</b>	<b>742</b>	<b>100%</b>
<b>Gravida (n=715)</b>		
Primigravida	246	34.4%
Multigravida	469	65.6%
<b>Total</b>	<b>715</b>	<b>100%</b>
<b>Number of prior pregnancies for multigravida (n=469)</b>		
1 to 2	348	74.2%
3 to 4	98	20.9%
5 or more	23	4.9%
<b>Type of ANC visit (n=735)</b>		
First visit	303	41.2%
Follow-up visit	432	58.8%
<b>Total</b>	<b>735</b>	<b>100%</b>
<b>Type of ANC visit (n=728)</b>		
Routine visit	669	91.9%
Referral visit	59	8.1%
<b>Total</b>	<b>728</b>	<b>100%</b>

Of the pregnant women seen, 92% had come for routine ANC, while 8% were referrals. 41.2% were coming for their first ANC visit with the minority (12%) of 20 weeks or less gestational age and the majority (65%) with a gestational age between 21-36 weeks.

**Table 8: Outcomes for ANC cases observed, (N=733)**

<b>Outcome of visit</b>	<b>Number of cases</b>	<b>Per cent of cases</b>
Client goes home	641	87.4%
Referred within facility	36	4.9%
Admitted to facility	27	3.7%
Referred to another facility	29	4.0%
<b>All cases</b>	<b>733</b>	<b>100%</b>

At the end of the consultation, the majority of the women (87.4%) went home. There were no deaths observed during ANC.

## **4.2 Screening pregnant women for specific health and socio-economic conditions**

The findings for this area are presented in the following order: observing Initial history taking in 1st ANC visit; Screening for danger signs; Screening for current health problems; Screening for past obstetric problems; Screening tests for common conditions; and Screening for Pre-eclampsia/Eclampsia.

### **4.2.1 Initial history taking in 1st ANC visit**

Initial history taking involved documenting the socio-demographic profile of the pregnant woman. The assessment measured the extent to which complete details of the client was collected on client details on age, medical and drug history, gestational age of current pregnancy, and number of prior pregnancies. This was the first step in screening women into the basic FANC or the intensive 'route' of ANC. The results are shown in the table 9 below.

**Table 9: Percentage of cases where Health worker performed tasks for initial client assessment**

<b>Health worker asked about or client mentioned</b>	<b>ANC cases (N)</b>	<b>Per cent of cases</b>
Client's age	292	96.4%
Medications client is taking	78	25.7%
Client's LMP	294	97.0%
Health worker asked about number of prior pregnancies	206	68.0%
<b>Mean per cent score: Initial history taking in 1st ANC visit</b>	<b>217</b>	<b>71.8%</b>

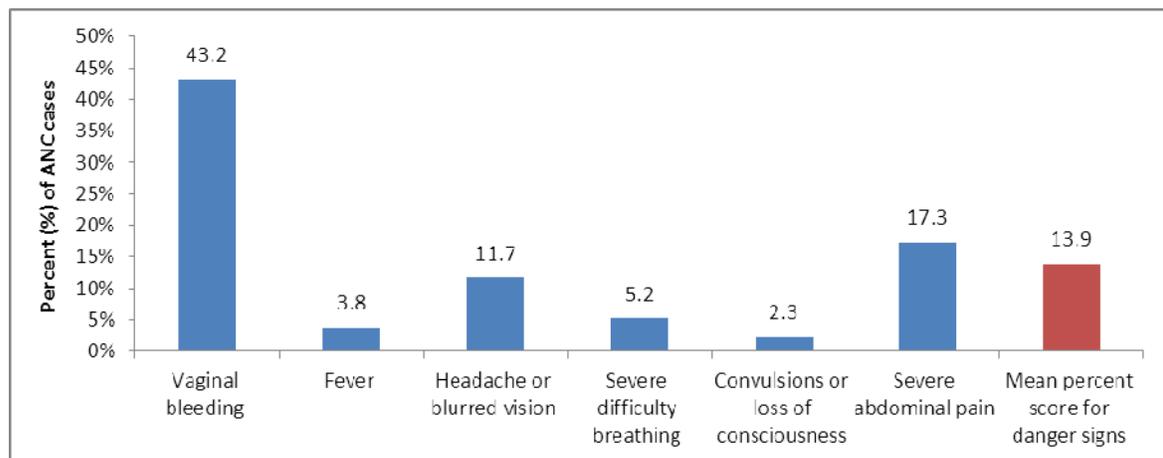
The adherence to performance tasks for initial client assessment was high. On average about 70% (mean per cent score 71.8%) of the client details needed to satisfy quality standards for comprehensive initial history taking were covered during a consultation. Nearly all clients had their age and LMP details recorded. However a history of the medications a client was taking,

was recorded in only a quarter of the consultations, yet this information is vital for the well-being of the woman and adverse outcomes for both mother and baby.

#### 4.2.2 Screening for danger signs

At any contact with a client, health workers must identify women with danger signs and provide them with urgent and priority attention. Women with danger signs must be managed for the danger signs before continuing with FANC. The danger signs assessed are those mostly associated with major ‘killers’ in pregnancy like bleeding, infection, and Pre eclampsia. The results from the observations on screening for danger signs are shown in the Figure 11 below.

**Figure 11: Percentage of ANC cases where Health worker performed tasks for screening for danger signs (N=727)**

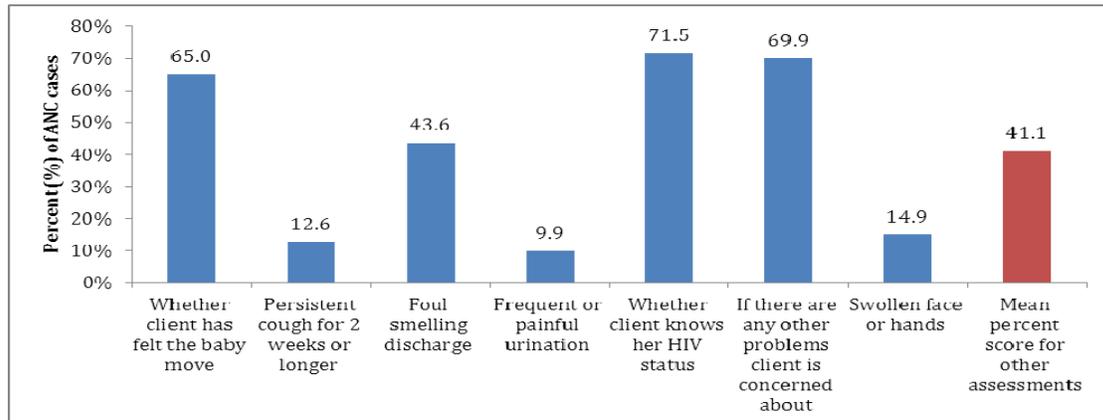


The adherence to performance tasks necessary in identifying women with danger signs during an ANC consultation was 14%. Less than 4% of pregnant women were asked about fever or convulsions, yet these are important symptoms of major causes of maternal mortality. History of vaginal bleeding, though still below 50%, was asked about in the largest proportion of women (43.2%).

#### 4.2.3 Screening for current health problems

The assessment under this component is a third screening step to identify women with other health conditions likely to have adverse impact on the pregnant woman and/or the foetus. The health conditions screened for were chronic cough, fetal movements, foul smelling vaginal discharge, urinary tract infection, HIV status, and any other health problems in current pregnancy. The results are summarised in Figure 12 below.

**Figure 12: Percentage of ANC cases where Health worker performed tasks for screening for current health problems (N=727)**



On average, a pregnant woman had less than half (MPS: 41.1%) of the main conditions assessed during an ANC consultation. Most cases were assessed for HIV status (71.5%), followed by 65% where fetal well-being was checked. However, main symptoms for screening for TB (12.6%), UTI (9.9%), and renal disease (14.9%) were missed in majority of the consultations. Yet identifying these conditions is vital in defining the additional care that a pregnant woman needs. The consequence of missing these important existing health conditions means that treatment cannot be prescribed and the routine FANC a woman should receive is less than optimal to adequately cover the health needs.

#### 4.2.4 Screening for past obstetric problems

There are some health problems or complications that occur in pregnancy or at delivery and recur or continue in subsequent pregnancies. Screening for these conditions is an important task in FANC.

**Table 10: Percentage of ANC cases where Health worker performed tasks for obtaining past obstetric history (N=176)**

Health worker asked about or client mentioned	Per cent of cases where specific aspects of past Obstetric history were asked (N=176)
Previous abortions	61.6%
Prior stillbirth	60.2%
Previous caesarean section	59.9%
Prior neonatal death(s)	56.3%
Heavy bleeding, during or after delivery	47.5%
Previous assisted deliveries (forceps, ventouse)	40.1%
Previous pregnancy induced hypertension	33.3%
Previous multiple pregnancies	31.6%
Anaemia	23.3%
Previous prolonged labour	21.6%
Previous pregnancy related convulsions	12.4%

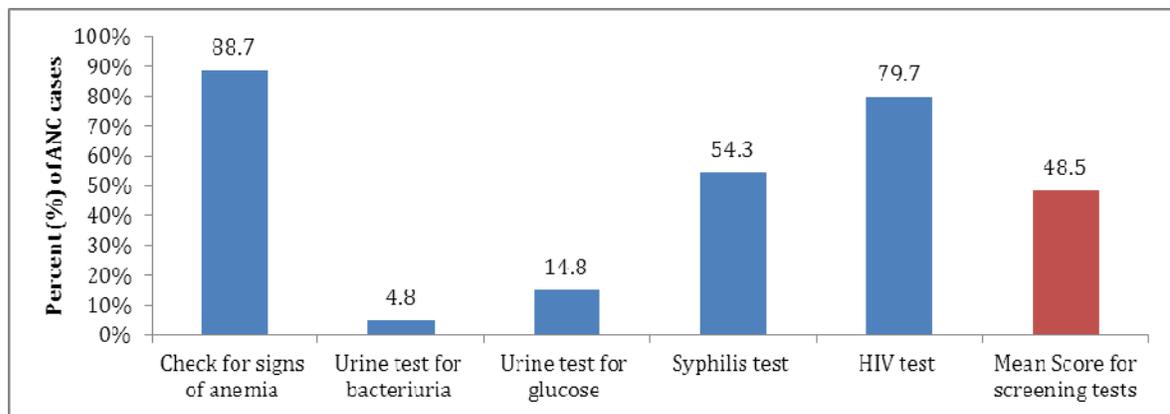
Note: The responses are only obviously from multigravida clients but results are missing from all of these

On average less than half of the most common conditions described above were checked for during an ANC consultation. The history about fetal and neonatal outcomes (deaths, abortion) was checked for in about 60% of the consultations. The second category most commonly checked for was the mode of delivery. The history of health problems and complications with the previous pregnancy itself were the least likely to be checked for.

#### 4.2.5 Screening tests for common conditions

Screening tests in ANC compliment the other screening tasks described under this focus area. The tests assessed were for detecting anaemia, UTI, syphilis, HIV, and diabetes mellitus. The proportions of cases where these tests were performed are presented.

**Figure 13: Percentage of ANC cases where Health worker performed screening tests (N=727)**

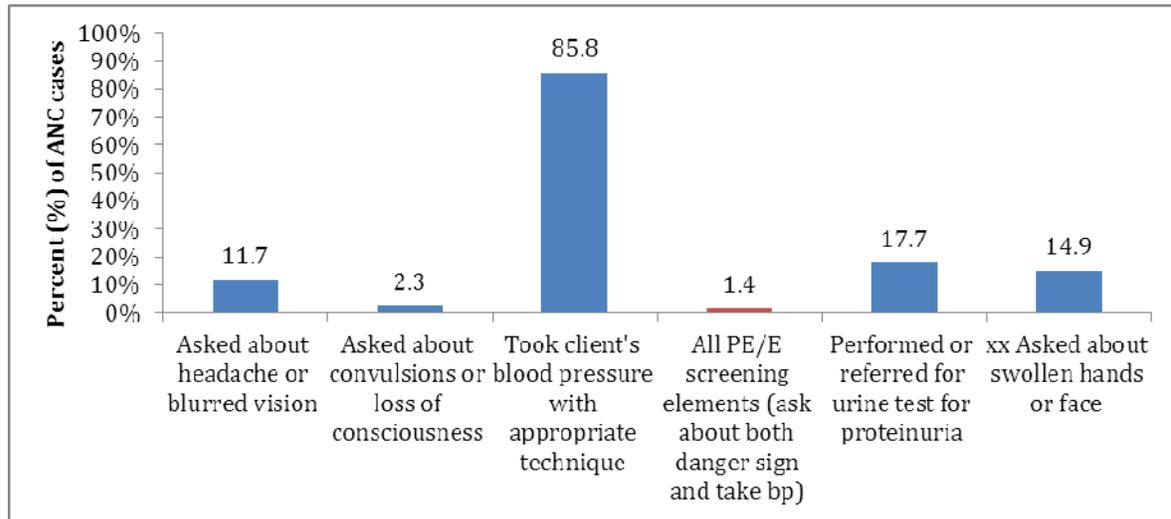


On average, less than 3 out of the 5 tests (48.5%) were performed during an ANC consultation. The largest proportions of women were likely to be tested for HIV (79.7%) or checked for anaemia (88.7%), which contrasted with few clients having a urine test for bacterial infection (4.8%) or glucose (14.8%).

#### 4.2.6 Screening for Pre-eclampsia/Eclampsia

Screening for PE/E in ANC is an important step which provides yet another important piece of data needed for triaging women into an ‘at risk’ group described earlier. Comprehensive screening for PE/E consists of 3 important steps: checking for symptoms of PE/E; measuring BP; and checking for protein in urine. These 3 steps were assessed and the results are shown in Figure 14 below.

**Figure 14: Percentage of ANC cases where Health worker performed tasks for screening for Pre-eclampsia/Eclampsia (N=727)**



The overall performance in screening for PE/E in ANC was the component furthest from satisfying the set performance standards of quality in FANC. Less than 2% of the clients had all the 3 tasks performed. Measuring BP was the most commonly performed task (86%), yet only 10 out of the 723 pregnant women had both their BP measured and symptoms of PE/E checked. Less than a fifth had their urine tested for protein. Without performing all the 3 tasks for screening for PEE, the detection and proper classification of PEE is severely compromised.

### **4.3 Preventive therapeutic interventions in ANC**

The assessments in this focus area covered the prescription of, dispensing of, and counselling on therapeutic interventions targeting common conditions like anaemia, malaria, and HIV.

The assessment aim was to check if clients were given and counselled on the following preventive 'treatments': ferrous sulphate and folate (1<sup>st</sup> & 4<sup>th</sup> visit); Fansidar for IPT (2<sup>nd</sup> & 3<sup>rd</sup> visit); anti-tetanus toxoid injection (2<sup>nd</sup> & 3<sup>rd</sup> visit); and ITNs (1<sup>st</sup> visit). Counselling was also assessed as to whether health workers explained the purpose of any prophylaxis/treatment provided, and explained how to take the treatment, giving information on common side effects of the treatment.

The target groups of women expected to receive these interventions varied according to a previous medical history of clients and residency of clients (e.g. malaria counselling would only be given in malarious districts). As such caution is needed in interpreting some of the proportions presented below.

**Table 11: Percentage of ANC cases where Health worker performed tasks for providing preventive treatments**

Task	Per cent of cases where task performed for iron pills or folic acid (n= 595)	Per cent of cases where task performed for anti-tetanus toxoid ( n= 386)	Per cent of cases where task performed for anti-malarials (n= 266)
Prescribed/gave commodity	91.4%	53.9%	36.8%
Explained purpose of treatment	78.0%	65.8%	65.8%
Explained how to take treatment	76.0%	-	86.1%
Explained side effects of treatment	14.3%	-	15.4%
<b>Mean % score: Providing treatment (ALL)</b>		<b>46.0%</b>	
<b>Mean % score: All counselling for treatment covered</b>		<b>55.8%</b>	

On average a pregnant woman was given either one or two of the four (46%) preventive treatments during the appropriate ANC visit. Nearly all women were given or prescribed ferrous sulphate (91.4%). Fansidar was prescribed in a just over a third of the women (36.8%). ITNs were rarely given in ANC (1.7%), suggesting the shift in national policy on ITN distribution, which has encouraged household distribution of nets rather than as part of an integrated ANC package.

Explanations on how to take medicine/treatment were more likely to be given compared to information on the purpose of the treatment and common side effects to be expected. This last piece of information is vital in discouraging women from defaulting on their treatments.

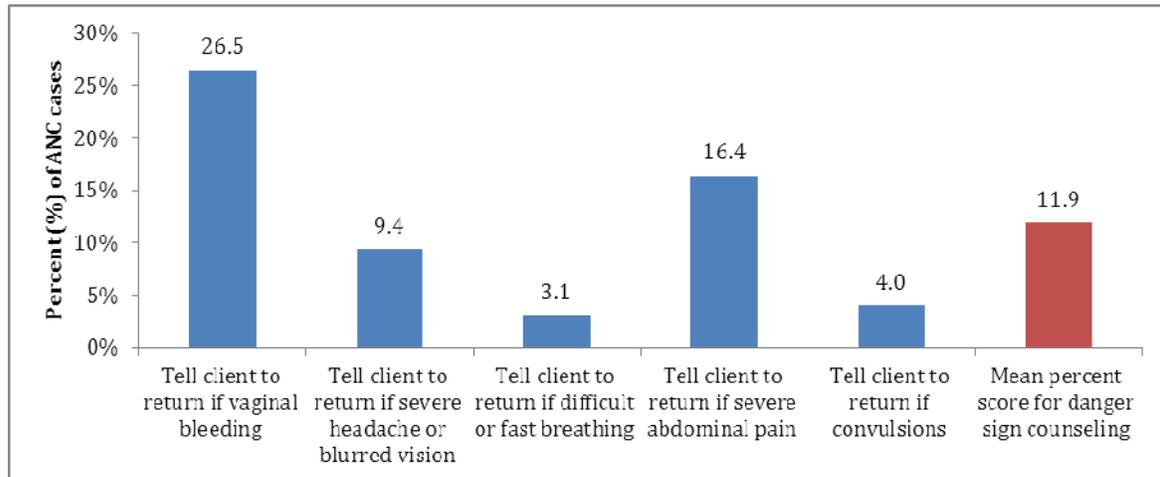
#### **4.4 Health education in ANC**

The health education in ANC who include giving pregnant women information on birth planning and complications.

##### **4.4.1 Health education on danger signs**

This component assessed whether health workers told clients to seek urgent medical attention for each of the common danger signs found in pregnancy.

**Figure 15: Percentage of ANC cases where Health worker performed tasks for health education on danger signs (N=731)**

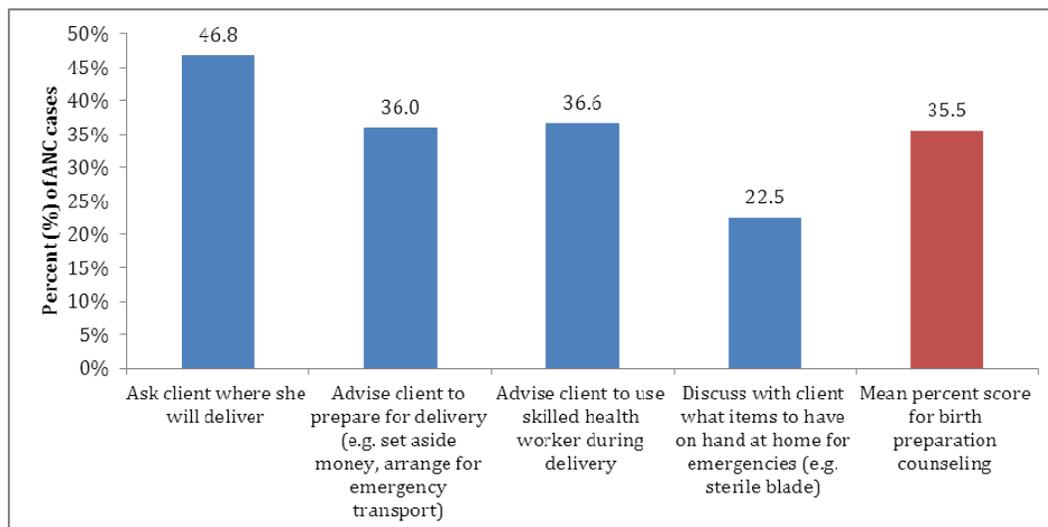


On average, most health workers covered one of the five danger signs during an ANC consultation (11.9%). Health education on vaginal bleeding was provided to the largest proportion of the women (26.5%), while convulsions (4%) and difficulty breathing (3.1%) had the lowest scores. The mean score for providing health education on PEE was 6.6%.

#### 4.4.2 Health education on safe births

Providing information on preparing for skilled attendance at delivery is vital for women and their families to prepare and implement an effective birth plan. The topics covered should include: place of delivery; transport during emergency; skilled birth attendant at delivery; and emergency delivery kit.

**Figure 16: Percentage of ANC cases where Health worker performed tasks health education on safe births (N=733)**

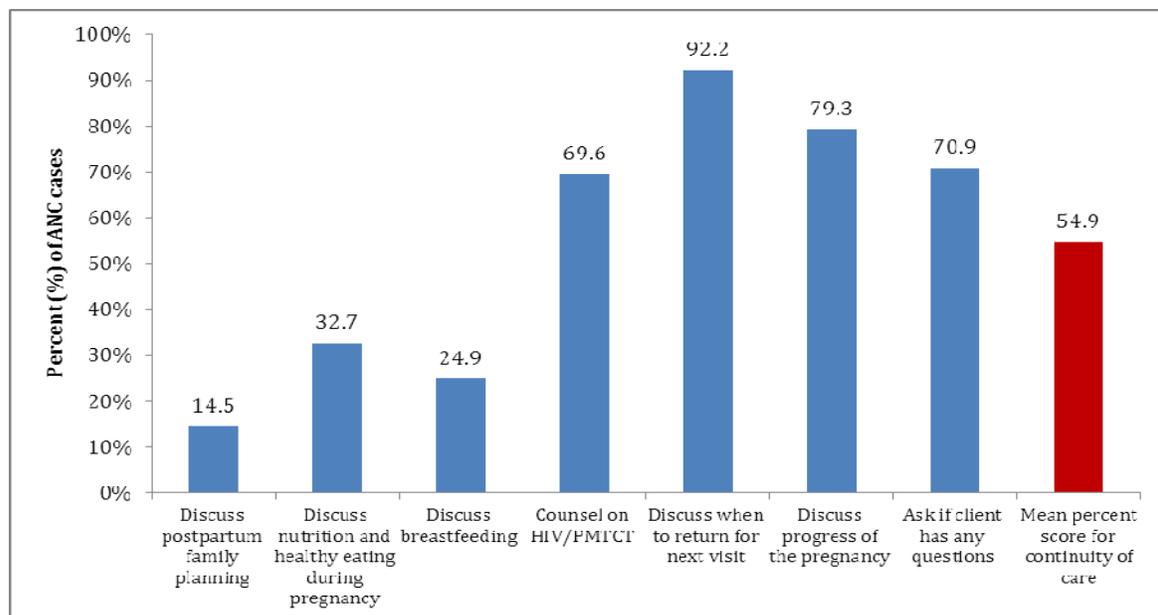


On average one or two of these five aspects (35.5%) of safe birth preparedness were covered during an ANC consult. Information on place of delivery was mentioned the most (46.8%), while information on emergency home delivery kit was least discussed.

#### 4.4.3 The continuity of care for women and babies

The assessment identified the extent to which pregnant women were provided with adequate information on follow up visits, on what to expect during labour and delivery, and on plans for postpartum and postnatal care for mother and baby.

**Figure 17: Percentage of ANC cases where Health worker performed tasks for counselling on continuity of care for mothers and babies (N=732)**

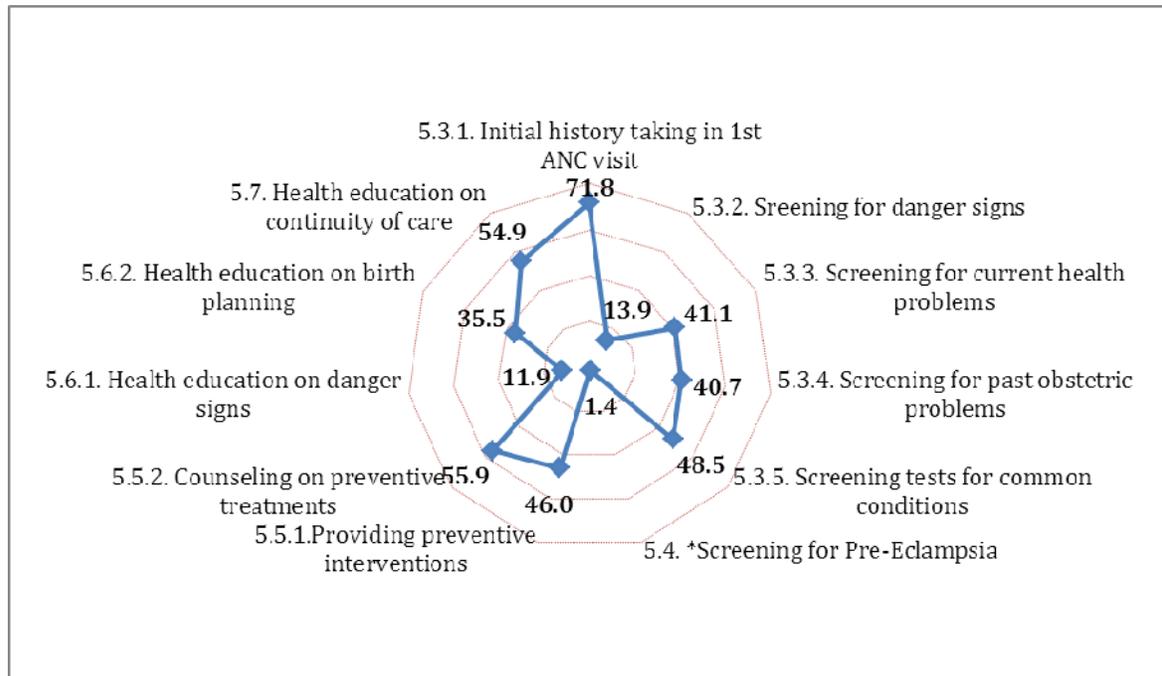


The mean score for discussing continuity of care was 55%. In most cases, counselling was provided on topics directly related to the pregnancy, while postnatal and postpartum topics (breastfeeding, nutrition for the woman, and postpartum family planning) had lower scores. Notably, the score for HIV/PMTCT was high as has been the case with scores for other components of evaluating HIV/PMCT of HIV.

#### 4.5 Summary of overall quality of ANC

The results for the 12 components mentioned above are summarised as mean percentage scores and shown in the following radar chart. (NB. The sample sizes obtained for each component varied considerably hence the choice of presenting the data on radar, which accommodates various y-axes).

**Figure 18: Mean percentage scores for quality of care in all the components of FANC**



Initial history taking had the highest overall score (71.8%), and screening for PE/E had the lowest score (1.4%). The adherence to performance standards of FANC was higher for components of a general nature like general history taking, general physical examination, and health education on general topics, compared to components that required deliberate targeting on specific issues during the consultation. The components in this later group are screening for danger signs, screening for PEE, and providing targeted health education on an issue like danger signs and birth planning. Consequently, the specific objectives and intended health benefits from antenatal care for pregnant women are less likely to be met.

## 5 Routine Labour and Delivery Care

Skilled attendance at delivery is a proven strategy for improving labour and delivery outcomes. Skilled attendance at delivery comprises of: having a Skilled Birth Attendant (SBA) during L&D; ensuring appropriate provision of supplies and equipment that a SBA can use in performing tasks consistent with quality standards of care in labour and delivery; and having an enabling policy environment that supports the SBA to deliver care that is consistent with

evidence based best practices. Assessing the quality of care in L&D therefore should evaluate all these 3 elements.

The L&D component of the QoC study focused mainly on evaluating only two elements of the system:

- The facility readiness to support L&D services, through assessing the availability of human resources, supplies and equipment for the provision of routine L&D services.
- The care delivery process through assessing health worker practices in managing routine L&D.

The findings on facility readiness to support L&D have already been presented earlier, mainly looking at knowledge of health workers and likelihood of facilities to have essential equipment and supplies available. The focus in the next section is therefore on observations of health worker practices in managing L&D.

### **5.1 Characteristics of cases observed in Labour & Delivery**

A total of 336 L&D cases were observed in the first stage of labour, while 393 were observed for 2<sup>nd</sup> to 4<sup>th</sup> stages of labour, including the cleanup period. In total 474 observations were made at some stage of labour and delivery, and on average each observation took 155 minutes.

**Table 2: Number of cases observed in each component of labour and delivery observed, (N=474)**

<b>Components of L&amp;D observed</b>	<b>Number</b>
Initial client assessment	257
1st stage of labour	336
2nd & 3rd stages of labour	393
Immediate newborn & postpartum care	393
Clean-up and postpartum care	410
<b>Total number of L&amp;D observations</b>	<b>474</b>

Hospitals accounted for 80% of cases that were observed. Three quarters (75.4%) of the cases were assisted by nurse midwives and 1.3% by doctors. Women aged less than 29 years constituted 78% of the observations, with about a quarter being teenagers (24.2%).

**Table 13: Characteristics of the cases observed in Labour and Delivery**

<b>Characteristic</b>	<b>Total nos. of L&amp;D Cases</b>	<b>% of cases observed with characteristic</b>
<b>Type of facility</b>		
Hospital	383	80.8
Health Center/Clinic	93	19.6
<b>Health worker observed performing L&amp;D</b>	<b>L&amp;D cases (N)</b>	<b>Per cent of cases</b>

Doctor	6	1.3%
Nurse / Midwife	359	75.4%
Nurse/non-Midwife	73	15.3%
Other	38	8.0%
Total number of health workers observed during L&D	476	100%
<b>Number of health workers assisting with each birth</b>	<b>L&amp;D cases (N)</b>	<b>Percent of cases</b>
One health worker	84	21.4%
More than one health worker	308	78.6%
Total number of L&D observations	392	100%
<b>Age of mother</b>	<b>Nos. of Cases</b>	<b>Percent of cases</b>
<20	102	24.2
20 to 29	227	53.9
30 to 39	86	20.4
40 to 49	7	1.7
50+	-	0
Total number of L&D observations	421	
<b>Referral</b>	<b>Nos. of Cases</b>	<b>Percent of cases</b>
Woman was referred from other facility	127	30.3

A third of the women (37.2%) were primigravida, and 12% of them had gestational age estimated as being preterm.

At delivery, 94.7% of the cases were cephalic presentation, and the same proportion (94.5%) proceeded to spontaneous vaginal delivery. The same proportion of cases, 2.7%, had assisted instrument delivery and Caesarean Section.

**Table 14: Characteristics and health outcomes of cases observed in Labour and Delivery**

<b>Characteristics</b>		
<b>Type of delivery (n=401)</b>	<b>Number of Cases</b>	<b>Percent of cases</b>
Spontaneous vaginal	379	94.5
Assisted	11	2.7
Caesarean section	11	2.7
<b>Single or Multiple births (n=393)</b>	<b>Number of Cases</b>	<b>Percent of cases</b>
Singleton	370	94.1
Twin or above	17	4.3
<b>Birth weight (n=395)</b>	<b>Number of Cases</b>	<b>Percent of cases</b>
Low birth weight	36	9.1
Birth weight above 2500g	359	90.9
<b>Outcome for mother (n=414)</b>	<b>Number of Cases</b>	<b>Percent of cases</b>
Goes to recuperation ward	384	92.8
Referred to other health worker or area within same facility	3	0.7
Goes to surgery in same facility	9	2.2

Referred to other facility	18	4.3
Death of mother	0	0
<b>Outcome for newborn (n=399)</b>	<b>Number of Cases</b>	<b>Percent of cases</b>
Goes to regular nursery	33	8.3
Referred to specialist care within same facility	14	3.5
Referred to other facility	7	1.8
Goes to ward with mother	334	83.7
Death of newborn	2*	0.5
Fresh stillbirth	4	1
Macerated stillbirth	5	1.3

\*Note: 2 newborn deaths are reported in this table compared to 1 newborn death in Table 4. This is because the 2<sup>nd</sup> newborn death and resuscitation efforts were not observed by the assessment team and so whilst this was the outcome, the details of the incident were not recorded.

At birth, 94.1% of the births were singleton, and 9.1% were of Low Birth Weight. The majority of babies went to ward with mother, while 1.3% of newborns were referred to another facility. There was no maternal death, and 92.8% of the women went to recuperation ward, with 4.3% being referred to another facility.

## **5.2 Quality of care in Labour & Delivery**

The quality of care in managing L&D can be measured by evaluating the extent to which health worker practices satisfy the objectives of managing L&D. The objectives of managing L&D, as derived from the definition of Skilled Birth Attendant, are:

- To screen women for specific health and socio-economic conditions likely to increase the possibility of specific adverse outcomes. This enables the birth attendant to individualise the intensity of care given to the woman based on the health and social needs.
- To manage specific stages of L&D, by performing proven tasks for preventing and detecting common L&D complications.
- To create and sustain an environment that support safe births.
- To manage complications of L&D.

### **5.2.1 Screening for specific health and social conditions in L&D**

Screening women for health and social conditions in L&D was assessed by observing if the HW performed the following tasks during the L&D consultation: checking client's socio-demographic details; checking for danger signs; performing physical examination; checking past obstetric history; and screening for Pre-Eclampsia.

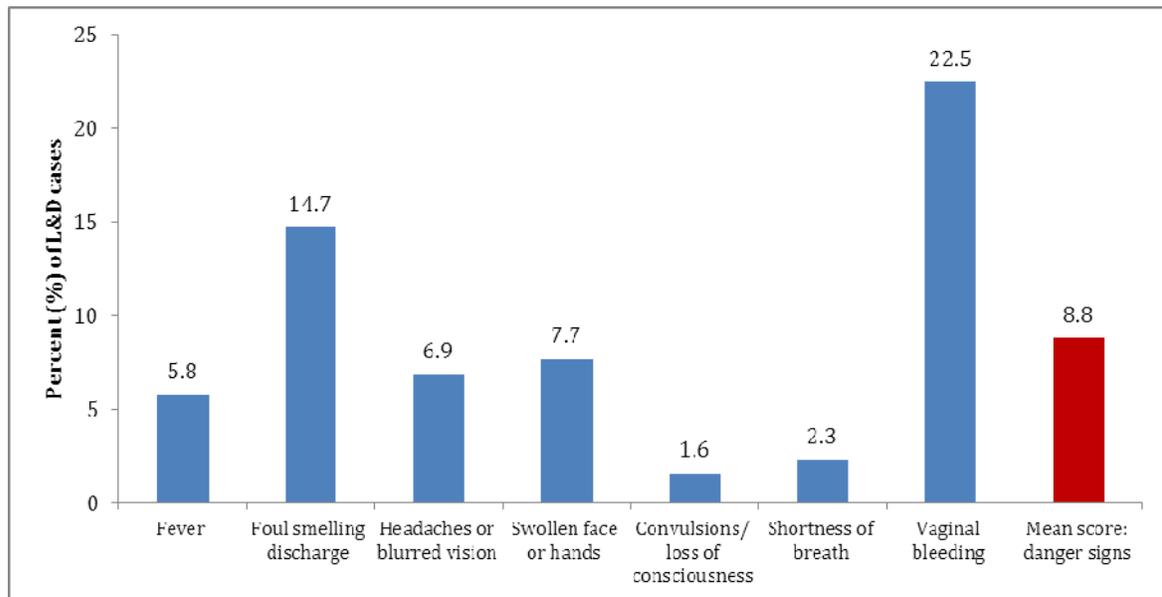
#### **a) Checking client's socio-demographic details**

In the majority of cases (89.7%), a comprehensive history on the socio-demographic details of the client was obtained. The details obtained included name, age, gestational age, parity, medications being taken, alcohol, and smoking.

**b) Checking for danger signs**

Checking for danger signs formed part of the initial client assessment. Assessing for danger signs helps HWs to identify women who need urgent and priority care, which may include urgent referral. The danger signs assessed are shown in Figure 19 below.

**Figure 19: Percentage of Labour & Delivery cases where Health worker performed tasks for screening for danger signs (N = 259)**



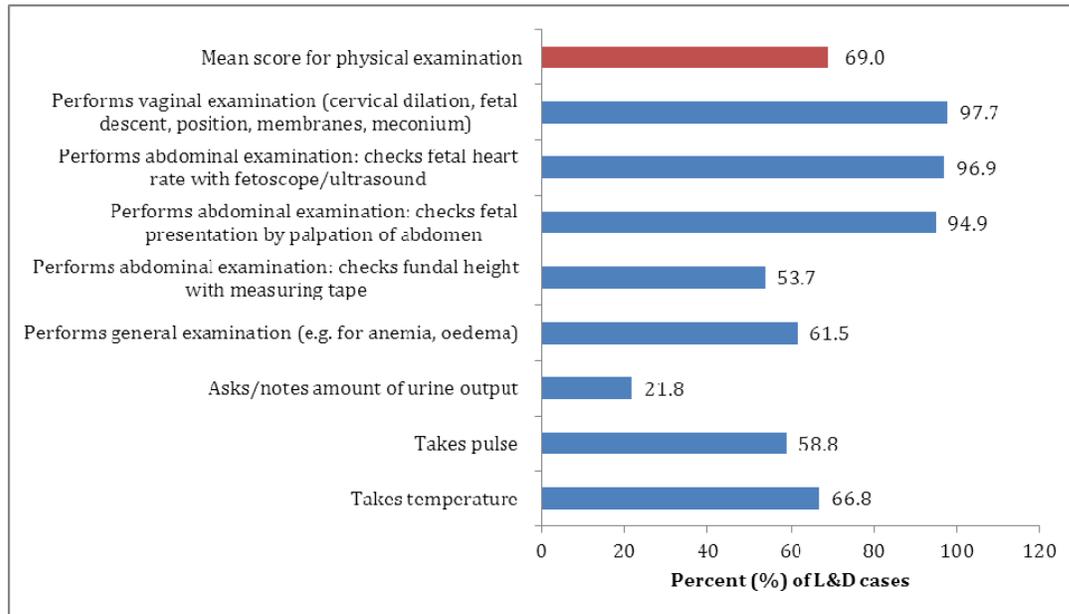
Health workers on average only checked for one out of the seven danger signs (Mean % score: 8.8%), with the most common danger sign checked for being vaginal bleeding (22.5% of cases), and the danger sign least checked for being history of convulsions or loss of consciousness (1.6% of cases). Yet, the latter are important signs of infection or PE/E, which are the main causes of maternal mortality in Zimbabwe

**c) Performing physical examination**

The next step in the screening process for health conditions is the physical examination of the woman in labour. The quality standards for physical examination covered: measuring vital signs (pulse, temperature, urine output); and performing general, obstetric and pelvic examination. These are presented in Figure 20 on the next page.

The majority of health workers performed a fairly comprehensive physical examination of the women in labour. About 70% of tasks for performing a physical examination were carried out satisfactorily. Nearly all women (95%) had a nearly comprehensive obstetric examination done, except for a large proportion of cases where fundal height was not measured (46%). The least performed task was noting urine output.

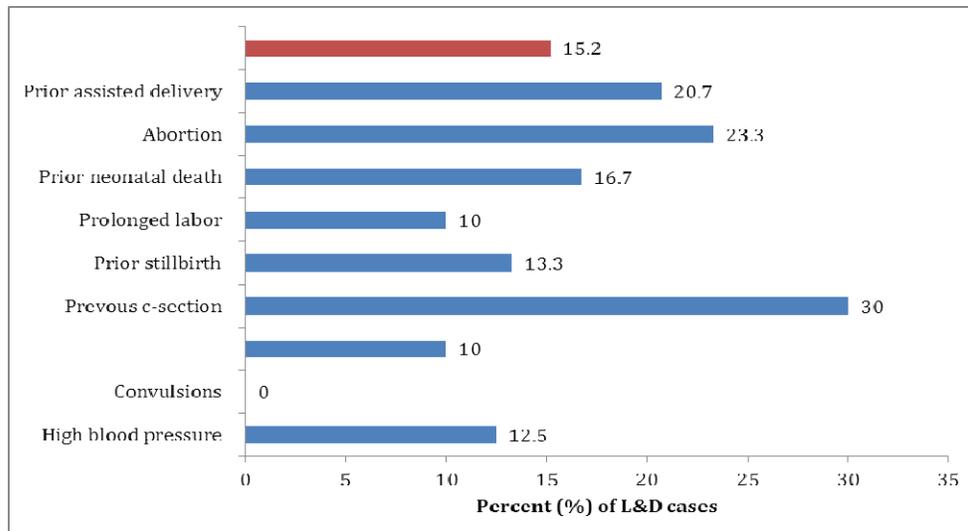
**Figure 20: Percentage of Labour & Delivery cases where Health worker performed tasks for physical examination (N = 259)**



**d) *Checking past obstetric history***

Past obstetric problems and interventions carried out can recur or influence the management of subsequent pregnancies. For example, a woman who had a previous Caesarean section will require additional care in the managing her in L&D.

**Figure 21: Percentage of Labour & Delivery cases where health worker performed tasks for obtaining a past obstetric history (N = 30)**

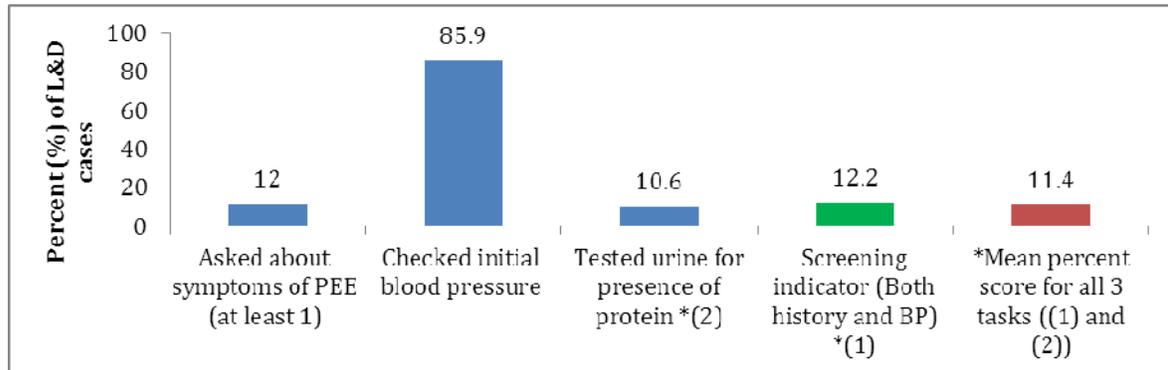


On average 1 or 2 of the ten main conditions were checked for during a consultation (15.2%). Generally very few women were checked for any of the main past obstetric history conditions.

**e) Screening for Pre-Eclampsia**

Screening for PE/E in L&D is a vital component of skilled care at birth. Health workers were assessed on their performance of the 3 main tasks for screening for PE/E: checking for symptoms of PE/E; checking BP; and testing urine for protein.

**Figure 22: Percentage of Labour & Delivery cases where health worker performed tasks for screening for PE/E (N = 257)**



The majority of women (85.9%) had their BP checked. About a tenth (12%) of the women were checked for at least one of the main symptoms of PE/E, and the same applies to testing urine for protein. The screening indicator for PE/E (both BP and history) was satisfied in 12.2% of the cases. The mean percentage score for all 3 tasks for screening for PE/E, which is an average of the screening indicator (BP and history and the proportion tested for urine protein), was 11.4%

### **5.3 Preventive practices for each stage of labour**

A health worker can influence the outcome of L&D by using or performing specific evidence based interventions at different stages of labour. The assessment covered the following interventions: Use of partograph in 1<sup>st</sup> and 2<sup>nd</sup> stages of labour; Active Management of 3<sup>rd</sup> stage of labour; Immediate postpartum in 4<sup>th</sup> stage of labour; and essential neonatal care in 4<sup>th</sup> stage of labour

#### **5.3.1 Use of partograph in 1<sup>st</sup> and 2<sup>nd</sup> stages of labour**

The WHO recommends the use of the partograph in every woman in labour as an evidence based effective practice to help health workers in making better decisions for: the diagnosis and management of prolonged labour and obstructed labour; to detect fetal distress; and to improve the detection of severe pre-eclampsia, among others.

Use of partograph was assessed by direct clinical observation (264 observed cases) and by review of charts after delivery (474 case notes). The findings are presented mainly focusing on the use of the partograph that were actually observed. From the 264 partographs used, 92% were new WHO partographs (4cm), the rest were the old WHO partographs (3cm), and less than 1% were other types of partographs available at the facility at the time of the observations.

**Table 15: Percentage of Labour & Delivery cases where Health worker performed tasks for using the partograph**

Partograph use observed	L&D cases (N)	Percent of cases
Partograph use observed during first stage of labour	335	78.2
Correct timing for initiating partograph use for All partograph types	264	92
Partograph plotted at least every half hour during labour (all 3 items: Fetal heart, maternal pulse, frequency and duration of contractions)	263	43
BP recorded on partograph at least every four hours during labour	261	64
Definitive action taken at action line	26	69.2
<b>Mean per cent score for observed appropriate use of partograph in first stage of labour</b>		<b>69.3</b>

The partograph was used in over three quarters (78.2%) of L&D cases observed. In 92% of the observed cases, the timing for initiating partograph use was correct for all types of partograph used. Adherence to recommended frequency of monitoring labour and plotting the partograph was relatively low. In twenty six cases on the partograph, a problem in the progress of labour was detected and in 69.2% of the cases definitive action was taken. The above findings are consistent with the data generated from a review of partographs from case notes.

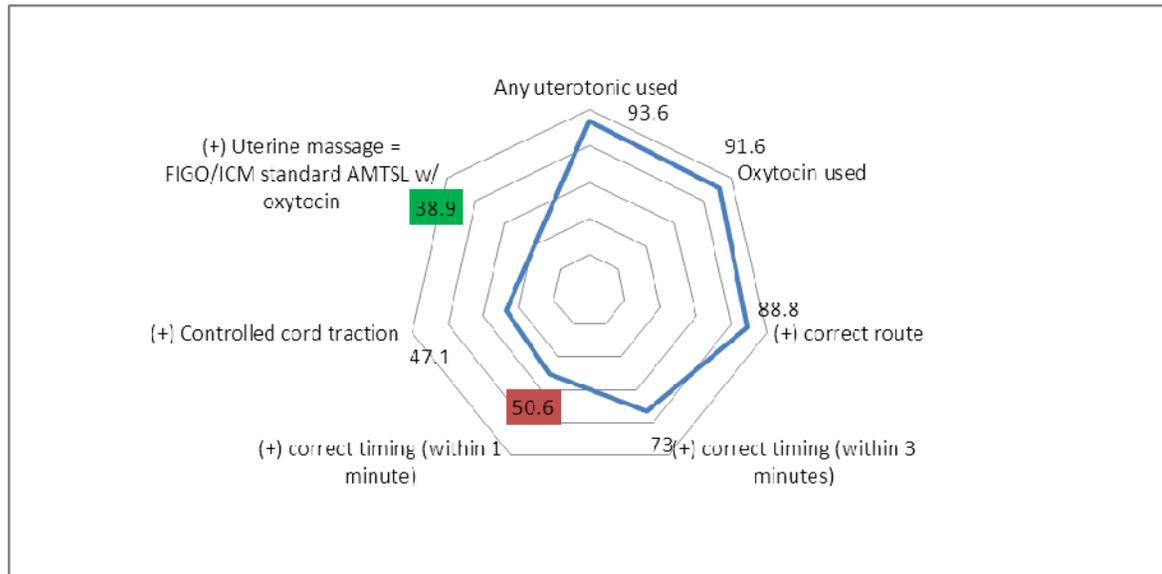
### **5.3.2 Active Management of 3<sup>rd</sup> stage of labour**

Active management of the third stage of labour (AMTSL) is an effective intervention to reduce the risk of postpartum hemorrhage and maternal anaemia (Begley et al, 2010). AMTSL consists of three interlocking components:

- Administering an uterotonic drug within 1 minute of delivery (the uterotonic of choice is oxytocin injection)
- Delivering placenta with controlled cord traction,
- Massaging the fundus of the uterus immediately after delivery of the placenta until the uterus is contracted.

The 2010 WHO guidelines recommend the administration of the uterotonic as the most effective component of the three.

**Figure 23: Percentage of Labour & Delivery cases in which each of the components of AMTSL were performed (N=393)**



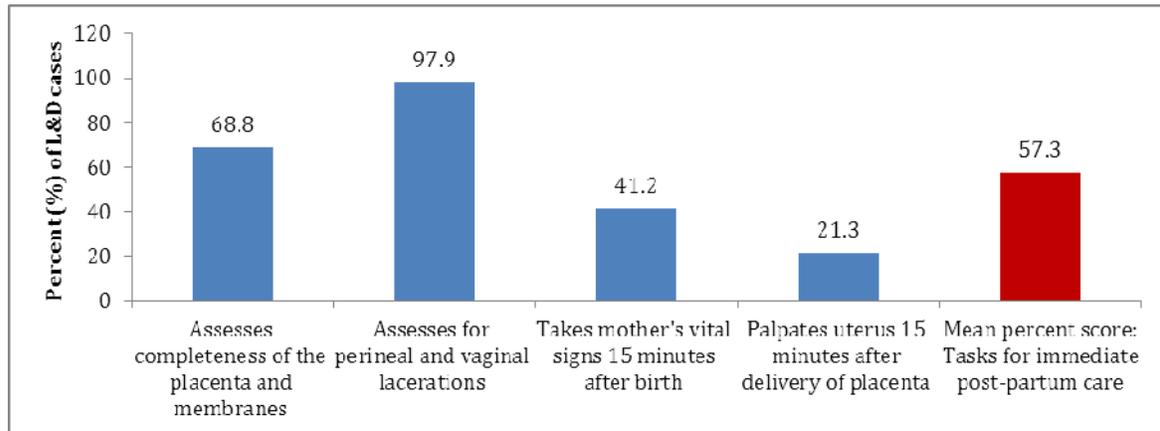
The radar chart denotes the percentage of deliveries in which each of the components of AMTSL were performed correctly. The points on the radar are additive as one reads starting from the 12 o'clock position and moving in a clockwise direction. The denominator changes at each point as cases that do not meet the set criteria are dropped.

The analysis is showing that administration of any uterotonic was nearly universal (93.6%) at all facilities. Oxytocin was the commonest uterotonic used in these cases (91.6). If correct timing is factored in, the percentage of cases correctly applying an uterotonic drops significantly to 50.6%. Factoring in controlled cord traction and uterine massage, the percentage of cases meeting the criteria for AMTSL drops further to 47% and 39% respectively. The 38.9% represents the percent of cases, where all 3 criteria for AMSTL were satisfied. The criteria used are very strict, and potentially demoralizing to health workers so the latest WHO recommendations is to measure a standard of care found at the 50.6% scoring.

### **5.3.3 Immediate postpartum care in the 4<sup>th</sup> stage of labour**

The immediate postpartum period poses a significant risk to the life of the mother particularly due to bleeding and postpartum haemorrhage remains the highest cause of maternal mortality in Zimbabwe. Consolidating and sustaining the gains of AMTSL is therefore important at this critical stage. The following tasks were assessed: checking the completeness of the placenta and membranes; checking for perineal and vaginal tears; palpating uterus to ascertain contraction status; and monitoring vital signs on schedule.

**Figure 24: Percentage of Labour & Delivery cases in which each of the components of 4<sup>th</sup> stage of labour were performed (N=393)**

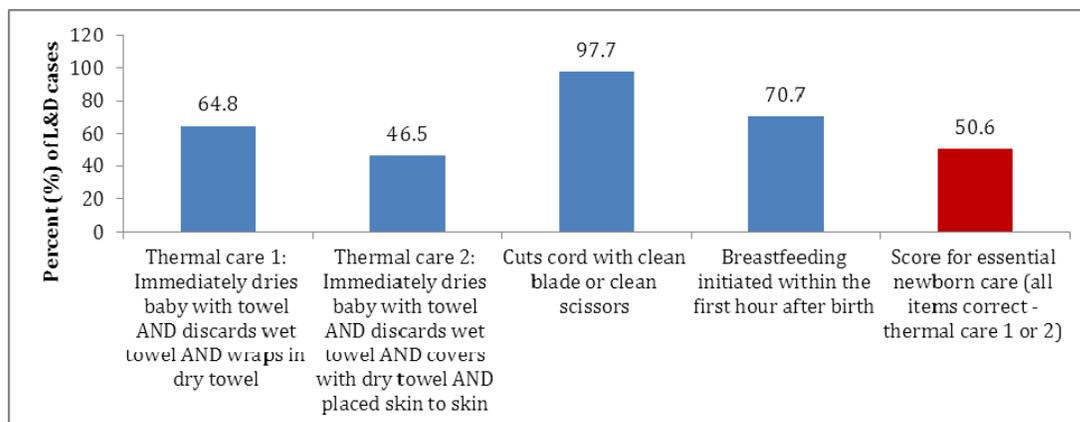


About half the tasks for the 4<sup>th</sup> stage of labour were performed correctly (MPS: 57.3%). Assessing for perineal and vaginal lacerations was universally performed (97.8%), followed by examination of the placenta (68%). The least performed tasks were both related to monitoring the woman after delivery; with 41.2% of health workers taking vital signs, and 21.3% palpating the uterus. In these cases, women can bleed without detection.

#### 5.3.4 Essential neonatal care in 4<sup>th</sup> stage of labour

The main tasks for essential newborn care are aimed at preventing common causes of neonatal mortality like hypothermia, hypoglycaemia, and sepsis. In the study, health workers were assessed against indicators for essential newborn care, which are consistent with the Helping babies Breathe practices for babies with no breathing problems. The assessment covered thermal care, early initiation of breast feeding, and aseptic techniques in cutting the umbilical cord. The findings are shown below.

**Figure 25: Percentage of Labour & Delivery cases in which each of the components of essential newborn care were performed (N=385)**



Half of the babies received all 3 items for essential newborn care. Clean cutting the cord was universal. Early initiation of breastfeeding was observed in over two third of the babies. The strict practices of thermal care were met in less than half the cases (46.5%).

### **5.3.5 *Creating an environment for safe births***

The observations for L&D also covered the extent to which the health workers adhered to evidence based principles of care that create an environment for safe births. Specifically the following components were assessed: Infection prevention and control practices; Interpersonal communication between the health worker(s) and the client(s); and avoidance of non-beneficial and un-indicated practices.

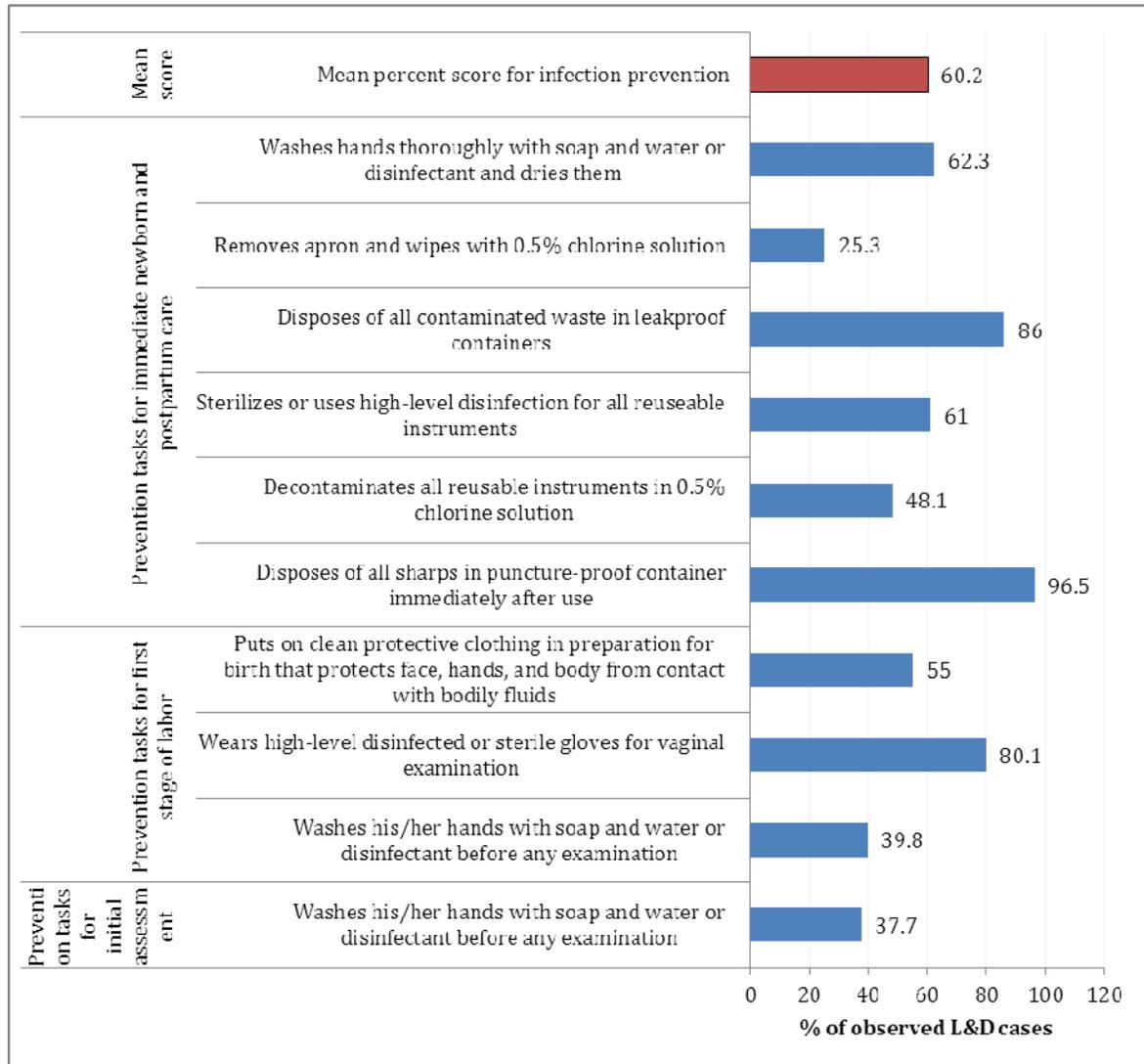
#### **a) *Infection prevention***

Sepsis is one of the top 3 causes of maternal mortality in Zimbabwe. Infection prevention and hygiene practices were assessed as important aspects of quality of care. These standard infection prevention practices are aimed at not only preventing maternal and neonatal infections, but also preventing infection of HWs and support staff. The health workers adherence to Infection prevention (IP) practices was assessed against the following set of standard precautions: scheduled hand washing; use of protective barriers; decontamination of reusable items in chlorine solution; and safe disposal of contaminated items.

Results on Infection prevention practices are summarised in Figure 26 below. The health workers were observed to adhere to 60.2% of IP standards during L&D. They performed very well in the use of protective barriers (80.1% for use of sterile gloves) and in safe disposal of medical waste (over 85%).

Health worker adherence to hand washing protocol did not satisfy quality standards in most of the cases (37.8% for initial hand washing before a procedure, and 62% for hand washing after delivery). Most facilities had chlorine solution but decontamination of reusable aprons was 25.3% and of instruments was 48.1%.

**Figure 26: Percentage of Labour & Delivery cases in which each of the tasks for Infection prevention was performed (N=338)**

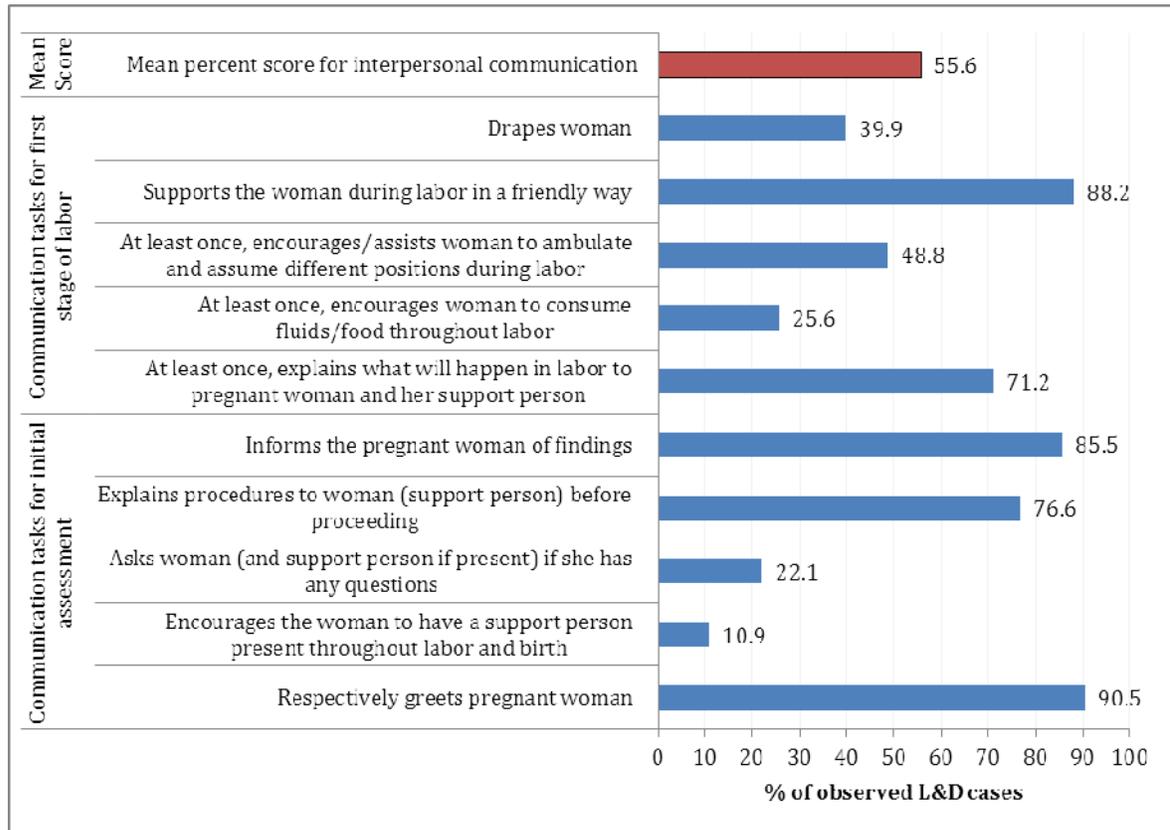


\*\*N=257 for initial assessment

**b) Interpersonal communication**

Measuring the quality of care a woman in labour receives goes beyond the technical aspects but also include aspects of ‘woman centered care’. Woman centered care refers to care that responds not only to the physical needs of a woman, but also to her emotional needs and right to privacy. Lack of respect for women, abusive care, and contempt of their birthing preferences, discourages women from delivering in facilities (Browser and Hill, 2010). These elements were assessed under interpersonal communication and support tasks during labour.

**Figure 27: Percentage of Labour & Delivery cases in which each of the components of interpersonal communication was performed (N=338)**



In the majority of cases health workers greeted the women and supported them in a friendly manner (over 88%). The content of the communication, however tended to be stronger in the technical aspects, like explaining what will happen in labour, explaining the procedure, and explaining the findings. The social aspects were often carried out less well, like ensuring privacy by draping the woman, encouraging a woman to have a support person in labour, encouraging a woman to take food or fluids, or encouraging a woman to walk around during labour. On average, about 50% of the tasks for interpersonal communication were satisfied.

**c) *Non-beneficial & un-indicated practices***

**Non-beneficial practices**

Non-beneficial practices are practices that are never indicated under any circumstances. Assessing the prevalence of these practices in L&D is a key component of measuring quality of care. The prevalence of eight non-beneficial practices was assessed and the results are presented in Table 16 below.

**Table 16: Percentage of Labour & Delivery cases in which each type of non-beneficial practice was observed (N=441)**

<b>Non-beneficial practices observed</b>	<b>Number of cases practice observed</b>	<b>Percent of cases practice observed</b>
Stretching of the perineum	38	9.2
Applying fundal pressure	23	5.6
Hold newborn upside down	20	4.8
Slap newborn	15	3.6
Shout, insult or threaten the woman	12	2.9
Milking the newborn's chest	4	1
Pubic shaving	3	0.7
Use of enema	1	0.2
Lavage of the uterus after delivery	1	0.2
Slap, hit or pinch the woman	1	0.2
<b><i>At least 1 non-beneficial practice observed</i></b>	<b><i>80</i></b>	<b><i>19.4</i></b>

At least one non-beneficial practice was observed being performed in 80 of the 414 women in L&D (19.4% of the cases). For the woman in L&D, the commonest non-beneficial practices were stretching the perineum (9.2%), applying fundal pressure (5.6%), and shouting/insulting the woman (2.9%). One woman was slapped. For the newborn, the commonest practices were holding baby upside down (4.8%), slapping the baby (3.6%), and milking the newborn's chest (1%). All eight non-beneficial practices were observed being practiced at least once.

### **Un-indicated practices**

Non-indicated practices are those practices that may be useful under some circumstances, but were not indicated in the context of the specific case under review. Four non-indicated practices were assessed: manual exploration of uterus after delivery, use of episiotomy, aspiration of newborn mouth and nose at birth, and restricting food and fluids in labour.

At least one non-indicated practice was observed being performed in 13% (54 out of the 414) of the L&Ds. Manual exploration of uterus and aspiration of newborn were not observed being practiced in any case. The most common non-indicated practice was restricting food and fluids (8.5%). Episiotomy was next at 4.6%.

**Table 17: Percentage of Labour & Delivery cases in which each un-indicated practice was observed (N=414)**

<b>Un-indicated practices observed</b>	<b>Number of cases practice observed</b>	<b>Percent of cases practice observed</b>
Manual exploration of the uterus after delivery	0	0
Use of episiotomy	19	4.6
Aspiration of newborn mouth and nose at birth	0	0
Restrict food and fluids in labour	35	8.5
<b>At least 1 un-indicated practices observed</b>	<b>54</b>	<b>13</b>

Overall, non-beneficial or un-indicated practices were observed in a quarter of the deliveries.

## **6 Routine Postnatal Care**

In 2008, the WHO noted that “the period soon after childbirth poses substantial risks for both mother and newborn infant. Yet the postpartum and postnatal period receives less attention from health care providers than pregnancy and child birth. The models of postpartum and postnatal care have changed little since first developed a century ago.”

The generation of evidence on effective interventions and care delivery models in PNC/PPC has been slow and lags behind other components of safe motherhood. In this study, the 2009 WHO Recommended Interventions for Improving Maternal and Newborn Health were used as the basis for assessing quality of routine essential PNC/PPC at facility level. The objectives of the essential routine PNC for the mother-baby dyad can be categorised into the following:

- Assessing the well-being of the mother and the baby
- Detection and prevention of complications
- Information and counselling to promote health
- Postnatal care planning and continuity of care

The three areas were assessed through direct observation of PNC consultations and the results are presented under the four objectives, first for the mother, then for the baby.

### **6.1 Characteristics of PNC cases observed**

A total of 429 mother-baby dyad PNC consultations were observed. 65% of these consults took place in a hospital level facility. Nearly all the consults were performed by a professional health worker (97%), with midwives accounting for 28.6% and PNCs seeing 23.5% of the cases.

The majority of the cases seen had delivered at a health facility (82.7%), and about two thirds (63.5%) were coming for the first PNC visit, while another third (30.8%) were returning for the 2<sup>nd</sup> PNC visit, mainly at a district hospital level (38.5%).

The following Table 18 shows the distribution of the PNC visit by number of days since delivery.

**Table 18: Distribution of PNC consults by timing (day) of PNC visit (N=298 PNC consults)**

Day of PNC Visit	Number of PNC Cases seen	% of PNC Cases
Day 1	17	4.3%
Day 2	3	0.8%
Day 3	35	8.8%
Day 4	10	2.5%
Day 5	6	1.5%
Day 6	10	2.5%
Day 7	105	26.4%
Day 10	32	8.0%
Day 14	22	5.5%
Day 28	1	0.3%
Day 42	157	39.4%
<b>All consults</b>	<b>398</b>	<b>100.0%</b>

13.9% of the PNC consults took place within the first 3 days of life. Day 7 and 6 weeks had the highest frequencies. The majority of mothers and their babies had no problems and went home. 17 mothers and 15 babies were diagnosed as sick and managed accordingly. There were no deaths.

## **6.2 Quality of PNC**

### **6.2.1 Communication in PNC**

The first task in a PNC consultation is to rapidly assess the well-being of the mother-baby pair and to get first impressions on the bonding that exists between the pair and support persons. In this study health workers were assessed on whether they greeted women with respect, established good communication with clients, and whether they asked about the general well-being of the clients.

In majority of cases (86.2%) health workers greeted clients in a friendly manner, but often failed to properly introduce themselves. They were very good at asking about the general well-being of the clients. These elements are the basis for long term provision of care beyond the postnatal period.

#### **a) Screening for health and social conditions during PNC**

Screening for health and social conditions with possible adverse impact on health outcomes for mother-baby dyad was assessed at three levels: checking for danger signs; obtaining history about L&D; and examining the mother and the baby.

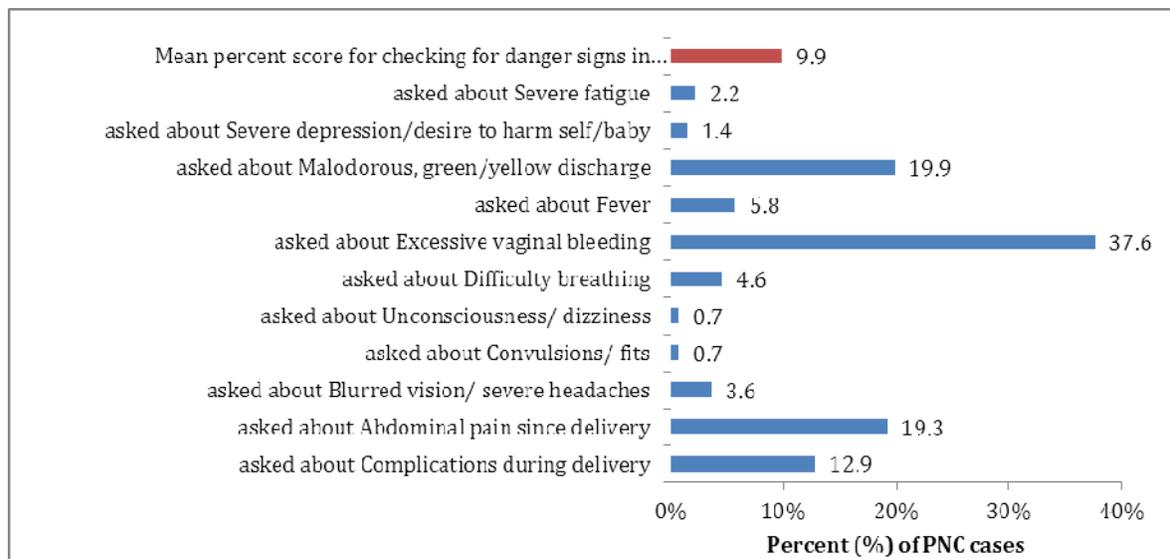
**b) Checking for danger signs**

Checking for danger signs aims at identifying women with signs of health problems suggestive of the presence of causes of morbidity and mortality in mothers and newborns.

**Checking for danger signs in mother**

Health workers were assessed on whether they checked on any of the twelve danger signs during an average consultation. The most commonly asked danger signs were vaginal bleeding (37.6%) and malodorous vaginal discharge (19.9%). In nearly all cases (over 99%), health workers did not ask about unconsciousness or dizziness, or take a history of fits or convulsions.

**Figure 28: Percentage of Postnatal Care cases where tasks for checking for danger signs in mothers were performed (N=421)**



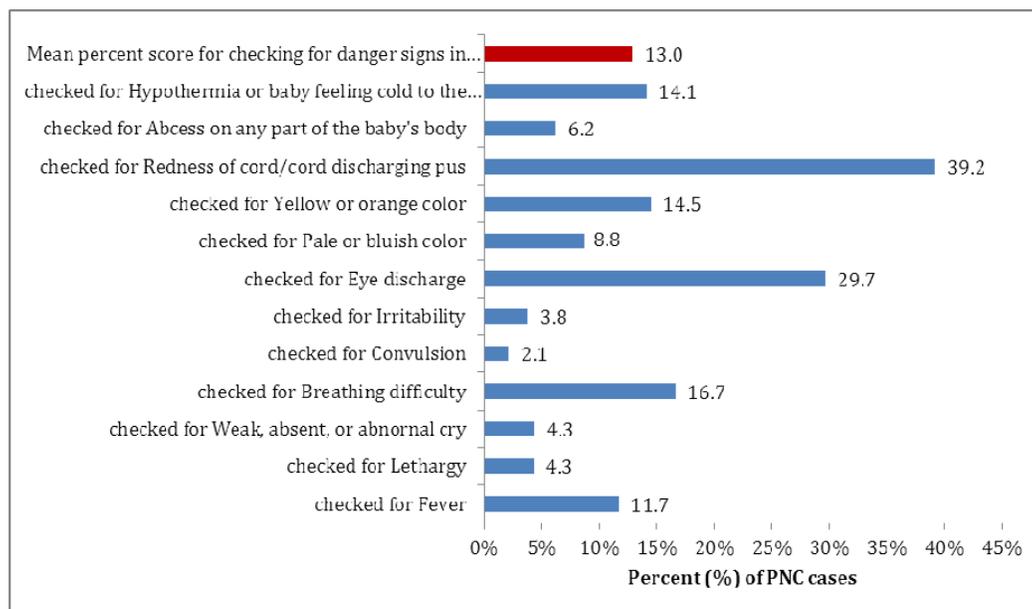
Health workers were observed asking about the twelve danger signs during an average consultation. The most commonly asked danger signs were vaginal bleeding (37.6%) and malodorous PV discharge (19.9%). In nearly all cases (over 99%) health workers did not ask about unconsciousness or dizziness, or take a history of past or present fits or convulsions.

Thirteen (13) mothers were identified as having at least one danger sign, and in all cases the HW ensured that they got urgent and priority attention, including referral where indicated.

**Checking for danger signs in babies**

PNC provides an important opportunity for the early detection of complications, including among babies who were delivered at home, yet if the enquiry is not focused, women and babies will continue to lose lives unnecessarily.

**Figure 29: Percentage of Postnatal Care cases where tasks for checking for danger signs in babies were performed (N=421)**



A similar trend to the results for the mother was noted in checking for danger signs in baby. Thirteen per cent of the tasks for checking for danger signs in the newborn were performed to standard during an average PNC consultation. Health workers mainly examined the eyes (39.2%) and the cord (29.7%). Like in the mother, signs of CNS irritation including irritability (3.8%) and convulsions (2.1%) were nearly always excluded.

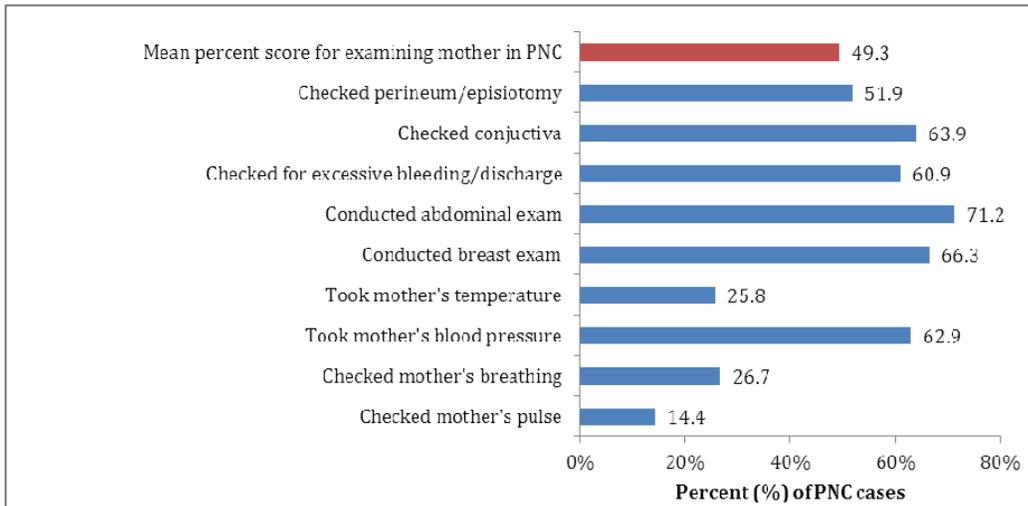
Fifteen babies were diagnosed as having at least one danger sign, and in all cases the Health worker ensured urgent and priority attention or referral for the baby.

### **6.2.2 Physical examination in PNC**

#### **a) Physical examination of the mother**

The health workers completed about 50% (49.3%) of the tasks for performing a physical examination during an average PNC consultation for the mother. These are summarised in Figure 30 below. Health Workers most often measured the BP, and examined the abdomen and perineum correctly (over 60%). However health workers often missed out on checking for possible sepsis (taking temperature 25.8%, measuring pulse 26.7%) despite sepsis being a leading cause of mortality in postnatal women.

**Figure 30: Percentage of Postnatal Care cases where tasks for physical examination of the mother were performed (N=421)**

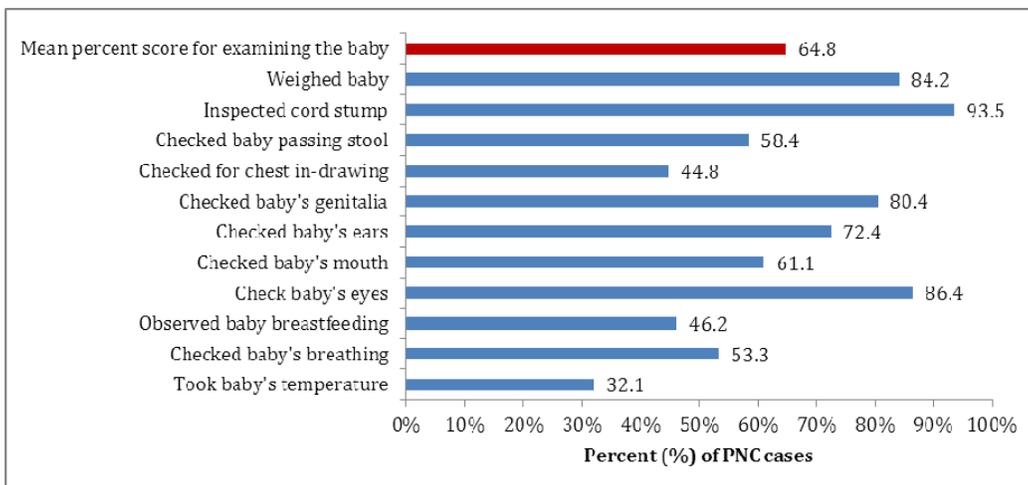


There were 19 sick mothers and HWs managed to diagnose 17 of them as being sick. Among those diagnosed as being sick, HWs correctly gave medications in 16 of them.

**b) Physical examination of the baby**

Health workers performed better in examining the baby compared to their performance in examining the mother. Nearly two thirds (64.8%) of the tasks for examining the baby were done during an average consultation.

**Figure 31: Percentage of Postnatal Care cases where tasks for physical examination of the baby were performed (N=417)**



A discernible trend from the analysis is that health workers often performed exceptionally well (over 80%) in carrying out the 'traditional' general PNC tasks like weighing baby, inspecting cord, examining genitalia and eyes. However their

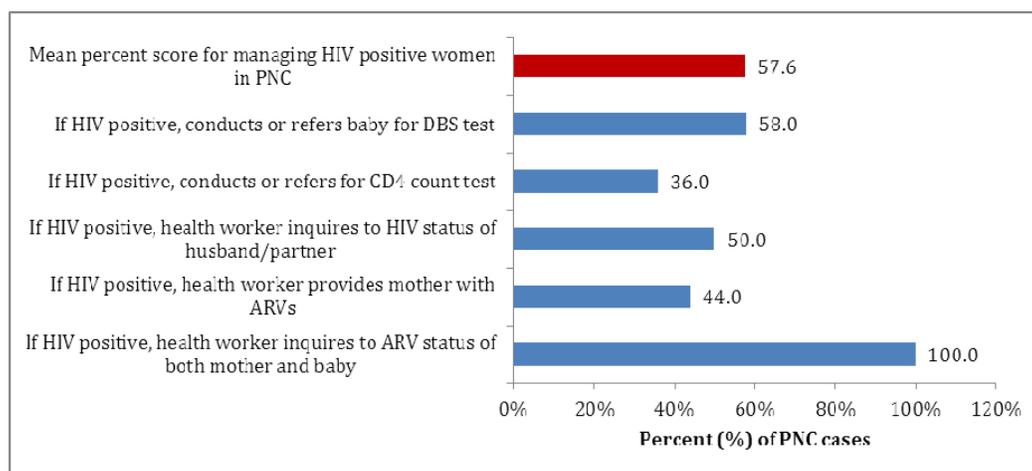
performance falls to less than 50% when eliciting specific signs that are focused and sensitive enough to identify main causes of mortality in newborns like taking baby’s temperature (32.1%), checking chest in-drawing (44.8%), or observing baby breastfeeding (46.2%).

There were 34 sick babies and health workers correctly diagnosed 31 of them as being sick. Medication was correctly prescribed to 22 of the cases, with correct counselling on how to take the medication as well as on potential side effects at 86% and 4% respectively.

### 6.2.3 Checking for HIV status in PNC

The last component under screening for health and social conditions in PNC was to assess the extent to which health workers checked for HIV status in PNC. The HIV status of the mother was checked in 71.7% of the 413 PNC cases seen. Among those found to be positive, health workers were assessed on how they managed HIV positive women and their exposed babies. The components of care assessed were: referring baby for DBS test; referring mother for CD4 count test; checking on partner status; and referring woman for ARVs. These are all summarised in Figure 32.

**Figure 32: Percentage of Postnatal Care cases where tasks for managing HIV positive mothers and exposed babies were performed (N=56)**



During an average PNC consultation with an HIV positive woman, staff would cover just two of the five tasks for managing a HIV positive woman and her baby. In all cases, HWs asked whether the mother and the baby were taking ARVs. The practices were mainly ‘baby focused’ as seen by the relatively larger proportion of babies referred for EID, compared with cases where HIV positive mothers were referred for CD4 count (36%) or were provided with ARVs (44%). However this could also be because mothers already had started ARVs so this data needs to be interpreted with care.

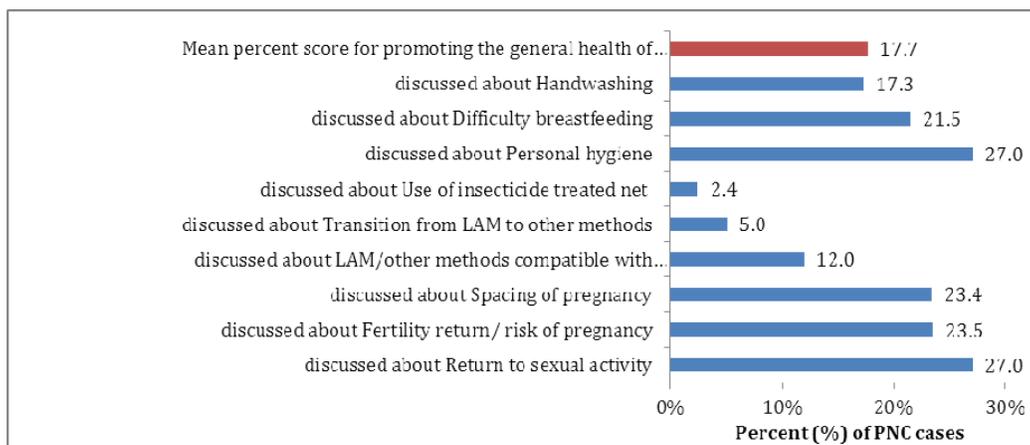
### 6.2.4 Promoting general health in PNC

Promoting general health of the mother and the baby comprises of giving information and advice of maintaining healthy well-being, recognising and dealing with common postnatal problems, and adopting behaviors and practices that promote health.

#### a) Promoting the general health of mothers in PNC

This was assessed by observing HWs giving health information and education on hygienic practices for the mother, postpartum family planning, breastfeeding, and common problems in the postnatal period and how to deal with them.

**Figure 33: Percentage of Postnatal Care cases where tasks for promoting general health of the mother were performed (N=421)**

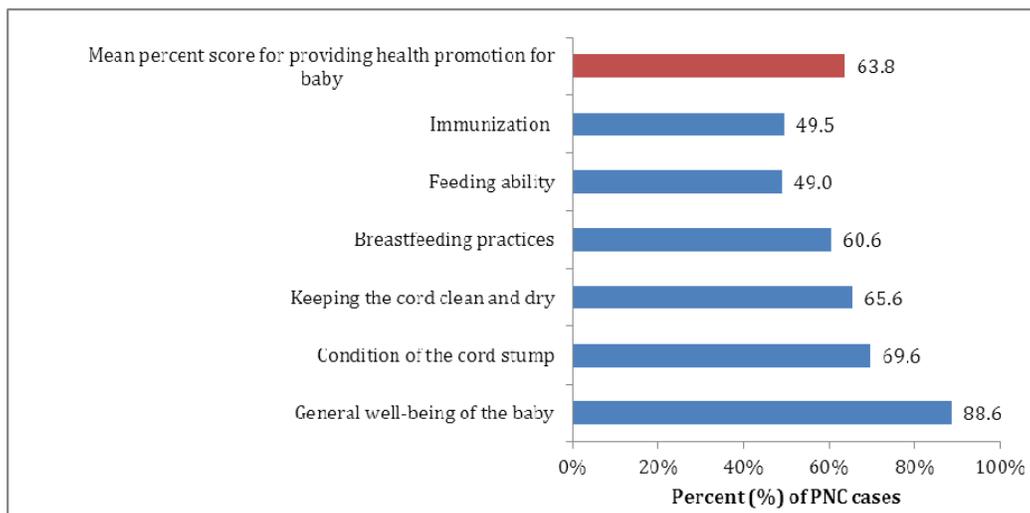


In most cases health workers did not provide adequate information on any of these key PNC health issues. About a fifth of the information and counselling needs of women in PNC were discussed during the PNC consultations. The percentages are low for all issues under consideration, with each issue being discussed only on average in 2-27% of the cases.

#### b) Promoting the general health of babies in PNC

Assessing the promotion of general health of babies in PNC included observing counselling on immunisation, care of the baby (bathing, feeding, cord care), and general well-being of the baby. These are summarised in Figure 34 below. Health workers generally performed very well in promoting the general health of the baby (MPS: 63.8%). Providing information and counselling on immunisation and feeding ability was observed in just under 50% of cases with all other elements being covered in over 60% of the consultations with mothers and babies.

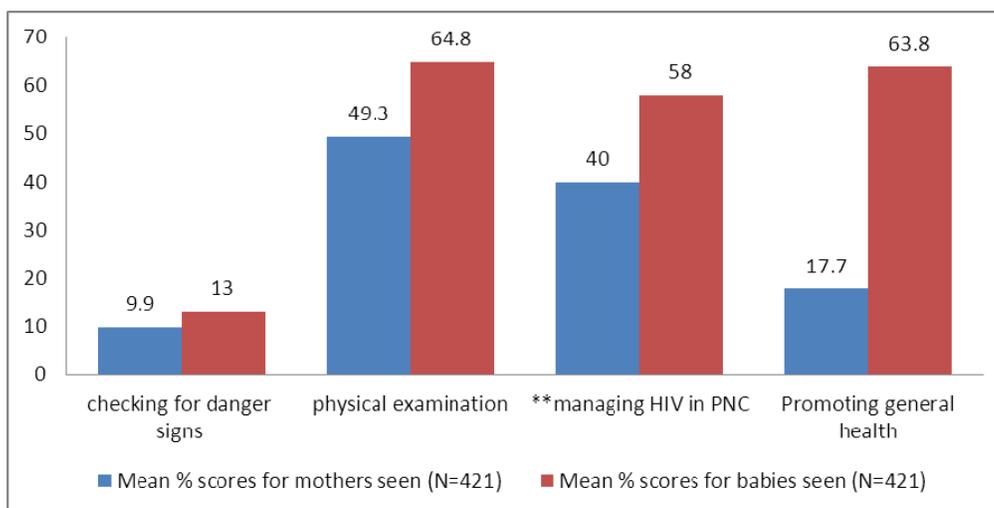
**Figure 34: Percentage of Postnatal Care cases where tasks for promoting general health of the baby were performed (N=421)**



### 6.2.5 Summary of Quality of PNC for mothers and babies

Figure 35 below summarises the aggregate scores for all components of PNC assessed.

**Figure 35: Mean percent scores of Postnatal Care cases where tasks for all components of PNC were performed (N=421)**



In summary, Health workers performed better in providing PNC to babies (about 60% for 3 items) compared to the care provided to mothers (below 40% for 3 items) across all areas assessed. In general, health workers satisfied more standards of care for both mother and babies in performing physical examinations and in managing HIV in PNC. The performance did not satisfy required standards for both mothers and babies in checking for danger signs.

## 7 Management of Major Maternal and Newborn Complications

The study sought to document and assesses the management of common maternal and newborn complications. Specifically, health workers were assessed on how they managed cases of neonatal birth asphyxia, severe PE/E, and postpartum haemorrhage, all of which are common causes of mortality.

### 7.1 Neonatal birth asphyxia

A total of 52 babies of the 393 deliveries observed (13%) were born not breathing or not crying and potentially were candidates for neonatal birth asphyxia. As shown in Table 19 below, 4 (1%) babies were fresh stillbirths, 5 (1.3%) were macerated stillbirths, and 43 (10.9%) needed resuscitation. Forty one of the 43 babies who needed resuscitation were observed being resuscitated. After resuscitation, 40 babies were alive, and 1 baby died after extensive and sustained resuscitation.

**Table 19: Summary of cases observed being managed for birth asphyxia**

Outcome status of baby	Number observed	Percent	Total number of babies
Baby not breathing/crying	52	13.2%	393
Baby fresh stillbirth	4	1.0%	393
Baby macerated stillbirth	5	1.3%	393
Baby needed resuscitation	43	10.9%	393
Resuscitation outcome of baby	Number observed	Percent	Total number of babies
Baby needing resuscitation resuscitated	41	95.3%	43
Baby alive after resuscitation	40	97.6%	41
Baby died after resuscitation	1	2.4%	41

### 7.2 Pre-eclampsia/Eclampsia

There were 20 cases observed with symptoms suggestive of severe pre-eclampsia. All the 20 cases had their blood pressure taken but only 4 (20%) had urine tested for protein. In total, 6 cases were diagnosed as severe pre-eclampsia of which 5 had a Diastolic BP of at least 110mm of mercury, and 1 was diagnosed as severe pre-eclampsia.

The standards for initial management of PE/E, which consisted of having BP taken, urine tested for protein, anti-hypertensive given for diastolic BP of at least 110, and

an initial dose of magnesium sulphate given, were satisfied in 2 of the 6 cases (33%). The one case diagnosed as having severe pre-eclampsia was delivered within 24 hours of diagnosis. There was no death observed.

**Table 20: Summary of cases observed being managed for PE/E (N=6)**

Immediate care observed	Number of cases where task performed	Percent of cases with PEE (n=6)
Blood pressure taken	6	100%
*Urine test for protein	4	67%
CORRECT: Magnesium sulphate and anti-hypertensive given only	2	33%
Magnesium sulphate given	3	50%
Diazepam given	4	67%
**Anti-hypertensive given	6	100%
WRONG: Magnesium sulphate, Diazepam and anti-hypertensive given	1	17%
WRONG: Anti-hypertensive AND diazepam only given	3	50%
Correct initial management of PEE (BP, urine protein, anti-hypertensive, and magnesium sulphate)	2	33%

\* 4/20 possible cases of PEE had urine test

\*\*14/5 cases with DBP >/110 given anti-hypertensive

### **7.3 Management of Postpartum haemorrhage**

Eighty cases out of 393 were observed for possible PPH. 18 cases were finally diagnosed as being PPH, of which 15 were caused by uterine atony, 2 from vaginal lacerations, and one case due to an incomplete expulsion of the placenta.

Two of the 15 cases with uterine atony were severe and required bimanual compression of the uterus and blood transfusion. The extent to which health workers adhered to standards for initial management of PPH is shown in Table 21 below.

**Table 21: Summary of cases observed being managed for PPH (N=18)**

<b>Immediate care</b>	<b>Number of cases task performed</b>	<b>% of cases (N =18)</b>
Uterine massage performed	17	94.4%
Additional oxytocin given	8	44.0%
Abdominal exam for uterine consistency and massage	16	88.9%
Examined vagina and perineum for tears	18	100.0%
Examined placenta for completeness	13	72.2%
IV fluids given	14	77.8%
<b>Mean per cent score for initial care in PPH</b>		<b>79.6%</b>

On average health workers satisfied 80% of the standards for the initial management of PPH. Examining the vagina and perineum for tears was performed in all the cases observed. Uterine massage was performed in all but one case. Examining the placenta for completeness and giving IV fluids was not done in 4 and 3 of the 18 cases respectively. The latter is worrisome since IV fluids administration forms the backbone of initial PPH management. The case of retained products of conception had mechanical uterine evacuation done. Two of the cases with uterine atony had severe PPH requiring bimanual uterine compression and blood transfusion. The lacerations were satisfactorily sutured. There was no death reported.

## **8 Summary of Key Issues and Recommendations for improved Maternal and Newborn Health**

### **8.1 Facility inventory**

**Issues:** The facility inventory data showed reasonable availability of uterotonics, HIV/PMTCT commodities, and a fairly adequate infrastructure to support MNH. However, commodities for infection prevention and control, essential obstetric and newborn care commodities, and capacity for sterilization need strengthening.

**Recommendation:** Prioritise Infection Prevention and Control as well as Emergency Obstetric and Newborn Care commodities in procurement plans. An opportunity exists to review the primary care kit and related supply chain mechanisms for targeting and streamlining procurements.

## **8.2 Health worker information and Knowledge**

**Issues:** All categories of health workers demonstrated a strong knowledge base for general issues related to routine Labour & Delivery. Most of them had had a supportive supervisory visit in the 3 months prior to the survey. However, health workers of all categories, scored very lowly in knowledge tests on the specific details of the routine L&D, and management of complications. Knowledge of the specifics is a pre-requisite in the acquisition and development of skills, and subsequently of competencies and the transfer of learning to service delivery areas - “If you do not know what to do you will not do it”.

**Recommendations:** The general and consistent knowledge gaps are highly suggestive of primary level weaknesses in knowledge transfer. More information is needed to review pre-service education on MNH for all cadres with the view of strengthening pre-service education curriculum and knowledge transfer approaches. These efforts should be complemented with in-service competency based approaches to transfer and maintain knowledge, including strengthened technical supportive supervision.

## **8.3 Management of obstetric and neonatal emergencies**

**Issues:** The signal function for parenteral uterotonic was high, though if you adjust the results specifically for oxytocin, this falls to below 20%. The overall performances for all the signal functions at facility level are below 10%. The availability of commodities, supplies, and human resources that support the performance of signal functions was very low. Low scores are also in part due to national policies that restrict the performance of certain functions at some levels, for example assisted instrument delivery is a BEmONC function but guidance from the MoHCW restricts it to hospitals only. Similarly low trends were shown in the knowledge levels on managing childbirth complications, and in the observed provider practices. Screening for danger signs, performing screening tests for main obstetric and newborn emergencies, and specific examinations to elicit signs of main ‘killers’ need strengthening - “if you don’t look for it you cannot find it, if you cannot find it you cannot manage it”.

**Recommendations:** 1) Prioritise strengthening the capacity of facilities to support the provision of the full range of signal functions consistently. It may be an opportunity to consider extending funding priorities beyond basic emergency obstetric and newborn care to include the huge needs to ensure facilities can manage the 9 signal functions required of CEmONC, especially the urgent need to improve the capacity to manage Caesarean sections. 2) The RH policy review should provide clear guidance on the package of signal functions to be provided at all levels of care and seriously consider task shifting to improve coverage for life saving interventions at lower levels of care. 3) The rarity of cases can easily lead to deterioration in competency levels so facility

based simulation of emergencies and the increased availability and use of anatomical models for on-the-job training is highly recommended.

#### **8.4 *Quality of Antenatal and Postnatal Care***

**Issues:** The adherence to performance standards of FANC and PNC had striking similarities. It was higher for components of a general nature like general history taking, general physical examination, and health education on general topics, compared to components that required identification and management of complications of pregnancy. The components in this later group included screening for danger signs, screening for PE/E in ANC, and providing targeted health education on issues such as danger signs and birth planning, and PFP. Consequently, the specific objectives and intended health benefits for women and babies are less likely to be met. The findings suggest, “If given a map, health workers would be able to follow directions, without a map they would wander about”.

**Recommendations:** It is strongly recommended that service delivery guidelines, job aides, and screening tools & checklists for FANC and PNC visits are updated and health workers oriented on these through on-the-job training. This could be included as part of regular supportive supervision.

#### **8.5 *Quality of Labour & Delivery care***

**Issues:** There were important strong areas observed in L&D, notably the high rate of use of the partograph and administration of oxytocin for AMTSL, and the obstetric examination of the clients. Areas that need strengthening include correct and real time use of the partograph, administering other components of AMTSL, screening for danger signs, infection prevention practices, and HIV/PMTCT in the context of L&D.

**Recommendations:** Consider reviewing pre-service (PSE) and in-service education to be more competency-based, including strengthening transfer and retention of learning through post training follow-up and technical supportive supervision. Whereas current training efforts have focused on hotel-based, time-bound group trainings targeting EmONC, the gaps demonstrated in assisting normal L&D requires that improved attention be given to PSE, as well as on-the-job training targeting management of normal births and Infection prevention.

# Quality of care to manage sick children using the Integrated Management of Childhood illnesses approach

## 1 Overview

The Integrated Management of Childhood Illness (IMCI) offers simple and cost effective methods to prevent and manage the leading causes of serious illness and deaths in children less than five years of age. Over 70% of these illnesses and deaths are due to: Neonatal problems; HIV/AIDS; acute respiratory infections; diarrhoeal diseases; malaria; measles; and malnutrition, often in combination. The IMCI approach is designed for use in an outpatient clinical settings with limited diagnostic tools, limited medications and limited opportunities to practice complicated clinical procedures. The focus is for IMCI to be scaled up at first level health facilities, where most of the sick children are seen each day, commonly with one or more of the above mentioned major causes of illness.

The IMCI case management method promotes evidence-based assessment and treatment, using a syndromic approach that supports the rational, effective and affordable use of drugs. Although, the first 7 days of life and especially the first 24 hours are particularly important in a young child's survival and development, deaths during this period contribute significantly to the high rates of infant mortality. Therefore and only recently, care of the newborn aged 0 to 7 days has now been incorporated into the IMCI strategy in Zimbabwe and the new guideline is now called the Integrated Management of Neonatal and Childhood Illnesses (IMNCI). These guidelines were however not finalised until after the NIHFA was underway. Therefore clinical observations of the assessment and management of early newborn problems in the first 7 days of life was not included as part of the E&QOC component.

In Zimbabwe, IMCI training was initiated in 2000 and by 2004, IMCI training was fully incorporated into the Nursing and Medical school training programmes. Since then around 800 Health workers have been trained. However the training programmes have never been formally evaluated in terms of whether the training has translated into good clinical practice. The NIHFA therefore provided a good opportunity to conduct an observational clinical assessment of health workers who manage sick children using the IMCI approach, to assess the quality of case management. The results should inform a way of improving the implementation of the IMCI approach.

In this E&QOC component of the NIHFA, health workers were assessed by experienced IMCI facilitators and clinical observers, who strictly followed the standard steps of assessment and management of a sick child used in the IMCI approach.

These include:

- Assess the sick child age 2 months up to 5 years
- Assess the sick young infant age 1 week up to 2 months
- Classify the illness
- Identify treatment and treat the child
- Counsel the mother and give follow up care

In conventional terms the steps called “assess the child” mean taking a history and carrying out a physical examination and “Classify the illness” means making a decision on the severity of illness that is then used to determine the course of treatment. Observing health workers carrying out these processes formed the focus of this part of the overall NIHFA assessment. References used to guide this component of the study can be found in Annex 12.

## 2 Methodology

The methodology and sampling framework for this component of the NIHFA has already been described in the previous section, as in essence a similar approach to that used for the Maternal and Newborn Quality of Care component was undertaken. Two tools were developed that focused specifically on: 1) the management of the sick child 2 months to 5 years of age; and 2) on the management of the sick young infant 1 week up to 2 months.

## 3 Findings from the Quality of care to manage sick children

A total of 441 health workers were observed while managing 555 sick young infants and children at 303 health facilities across the country, with 441 sick children being 2 months – 5 years of age and 114 being 1 week to 2 months of age. Whilst the number of sick children assessed by health workers fall short of the expected number of cases, the research team realised that given this kind of assessment had never been undertaken in Zimbabwe before, the assumptions about observing ‘sick children’ on a regular basis may have been overestimated.

**Table 1: Summary of the number of sick infants and children observed during the NIHFA QOC observations (N=555 observations of HW)**

Sample	Health facilities	Observations of Sick Young Infant 1 weeks – 2 months	Observations of Sick Child 2 months – 5 years
Planned sample	309	383	766
Actual sample	303	114	441
<b>Sample coverage (%)</b>	<b>95</b>	<b>30</b>	<b>58</b>

The majority of sick children aged 2 months to 5 years were managed by Registered General nurses (51%) and primary care nurses (40%) with the remaining being treated by other cadres of health workers. Sick young infants were also more likely to be managed by RGNs in 64% of cases with 27% of cases being seen by a PCN. Of those health workers managing sick young infants, 42% had been trained in IMCI compared to 57% of health workers observed in the management of the sick child.

### 3.1 Observing health worker's skills in assessing sick children age 2 months up to five years of age

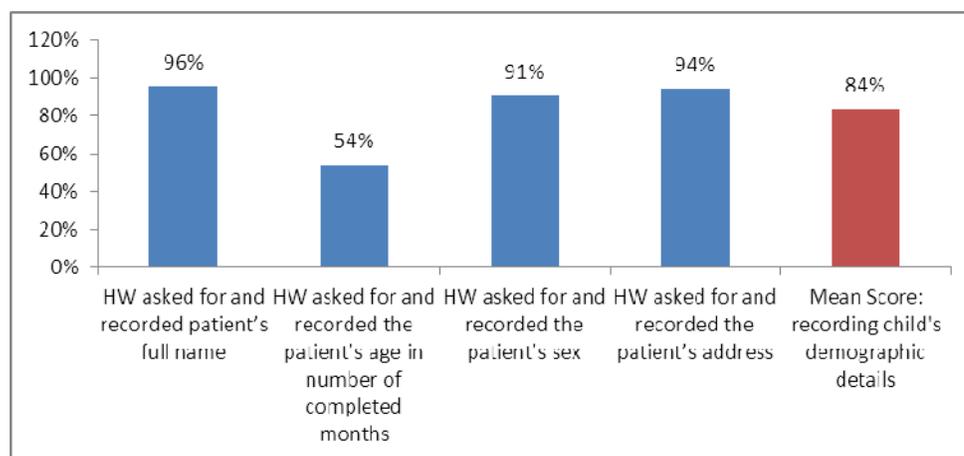
Although all health workers are expected to routinely use the national IMCI Chart booklet to properly classify and treat sick children, only 22% of health workers were observed using the IMCI chart booklet during their clinical practice.

#### 3.1.1 Initial assessment

A formal assessment of a sick child should start with greeting and receiving caregivers in a professional and sympathetic manner. 87% of the health workers were observed greeting and receiving all mothers and caregivers in a professional fashion.

Immediately, after greeting the caregiver, the assessment of a sick child starts with collecting details about the sick child from the mother or caregiver. More than 80% of health workers were able to record a sick child's identity details, however, only 54% of health workers correctly recorded the age of the child in the number of completed months.

**Figure 1: Percentage of Health workers correctly asking and recording basic patient details (N=441 observations of HW)**



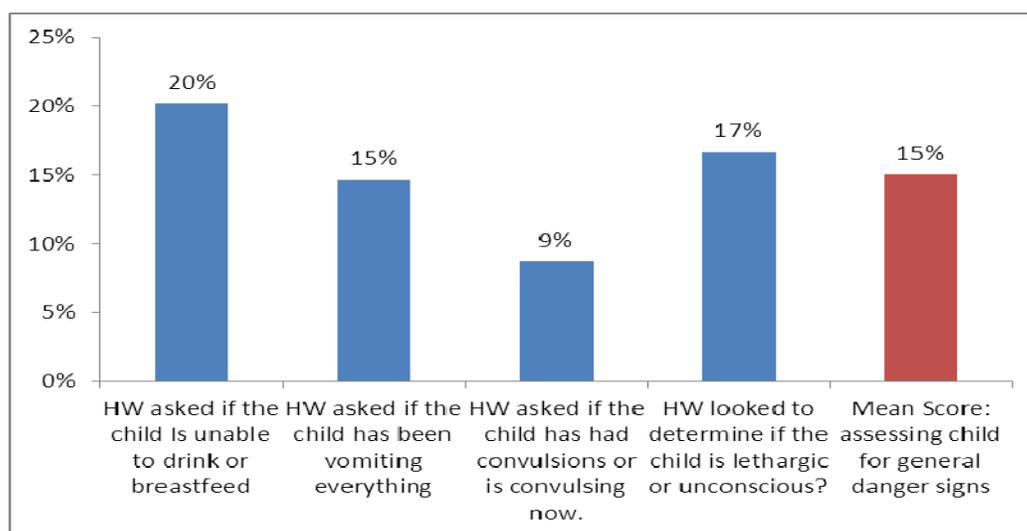
#### 3.1.2 Assessing and classifying sick children for General Danger Signs

As part of the IMCI approach, health workers should quickly check for any general danger signs and classify these accordingly. General danger signs are signs of a serious problem in a sick child. According to the IMCI approach a child is considered to have general danger signs, if a sick child is: unable to drink; vomits everything; has a history of convulsions or convulses during assessment; and if the child is lethargic

or unconscious. Most children with general danger sign(s) may quickly die if these signs are not detected early and urgent lifesaving treatment is not provided on time.

The observers found that on average only 15% of health workers asked and checked for general danger signs according to IMCI standards and even fewer, 6% of health workers correctly classified the sick child according to general danger signs. Health workers were least likely to take a history on convulsions as part of their initial assessment. These are summarised in Figure 2 below.

**Figure 2: Percentage of health workers assessing and classifying sick children for general danger signs (N=440 observations of HWs)**

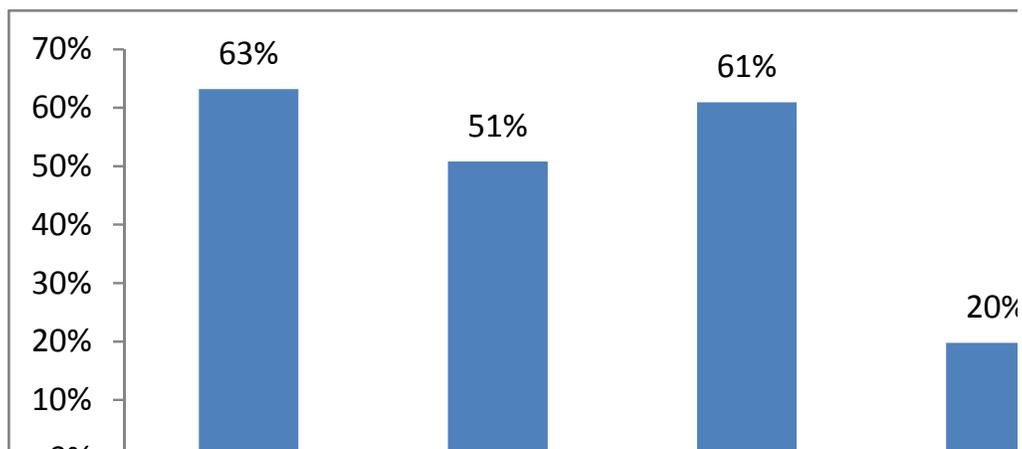


According to IMCI standards, after assessing and classifying a child for general danger signs, a health worker should assess a sick child for four main symptoms including:

- Cough or difficult breathing
- Diarrhoea
- Fever and
- Ear problems

While most health workers performed well in enquiring about cough (63%), fever (61%) and diarrhoea (51%), many health workers overlooked asking about ear problems (20%). On average just under half of all the health workers observed correctly assessed for the four main symptoms outlined in the IMCI approach as shown in Figure 3 below.

**Figure 3: Percentage of health workers enquiring about the four main symptoms during a sick child consultation (N=440 observations of HWs)**

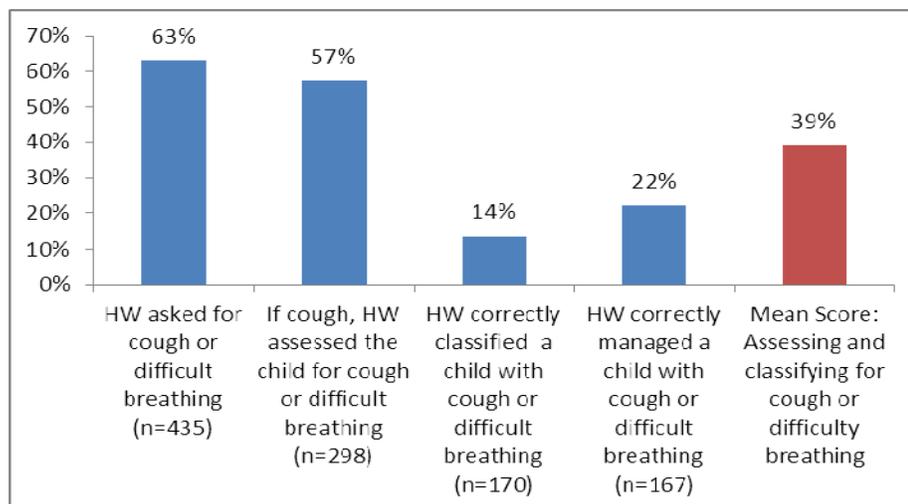


### 3.1.3 Assessing, classifying and treating sick children for Cough or difficult breathing

Pneumonia is the third leading cause of death in children less than five years of age in Zimbabwe, contributing to 14% of deaths. According to the IMCI approach, the first part of assessing a sick child for acute respiratory infection, is taking a history from the mother or caregiver to ascertain the main symptoms of cough or difficulties in breathing, thereafter examining for signs of respiratory distress.

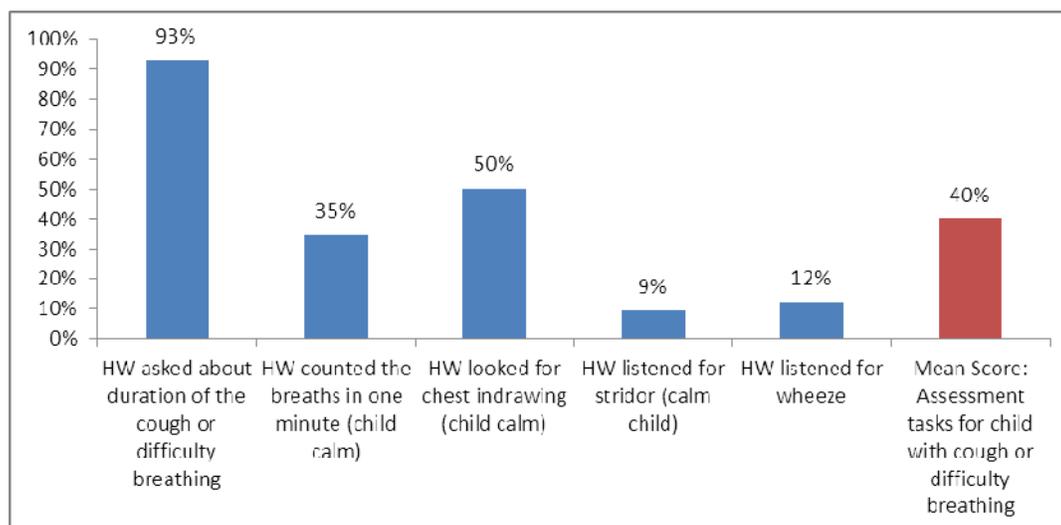
Overall 63% of health workers asked about symptoms of a cough or difficult breathing and 57% assessed the sick child correctly for signs of acute respiratory infection. Correct classification for the main symptom of cough or difficult breathing was made by only 14% of the health workers, with correct management provided in 22% of the cases.

**Figure 4: Percentage of health workers correctly assessing and classifying sick children for cough or difficult breathing (n=nos. of observations of HW)**



As shown in Figure 5, of those who were identified as having a cough or difficulty breathing, most health workers (93%) asked about the duration of a cough, few (35%) counted the respiratory rate and even fewer still listened for wheeze and stridor.

**Figure 5: Percentage of health workers performing specific tasks to assess a sick child with Cough or Difficulty Breathing (n=170 observations of HW)**



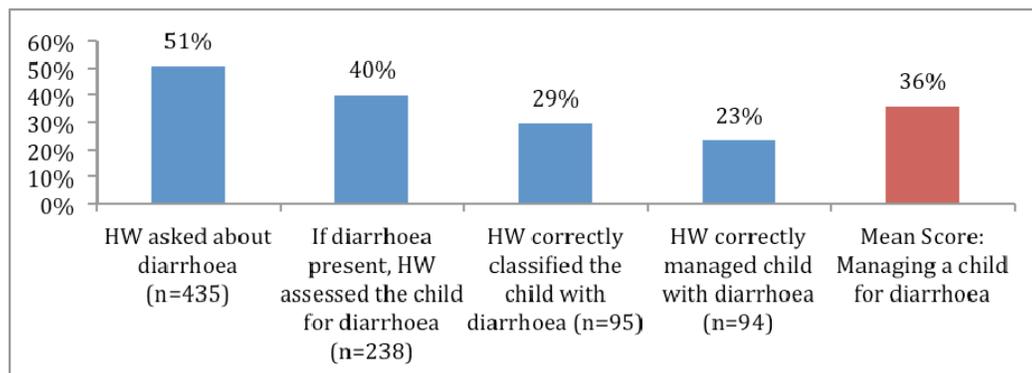
### **3.1.4 Assessing, classifying and managing sick children for diarrhoea**

Diarrhoea is the fourth leading cause of death in children less than five years of age in Zimbabwe, contributing to 9% of childhood deaths. For every sick child presenting to the clinic, mothers or caregivers should be asked if the child has diarrhoea and if present, asked about the duration of diarrhoea and if there is blood in the stool.

Of the 437 observations made of sick children, only 51% of health workers asked about symptoms of diarrhoea. In principle a child with diarrhoea should be assessed for the degree of dehydration, blood in the stool and based on the duration of illness, for persistent diarrhoea. The result for the combined assessment and classification using these three parameters was that 40% of the health workers were observed to correctly assess a sick child with diarrhoea, with only 29% correctly classifying the degree of diarrhoea.

This resulted in 23% of the health workers providing correct treatment for a sick child with diarrhoea according to IMCI protocols.

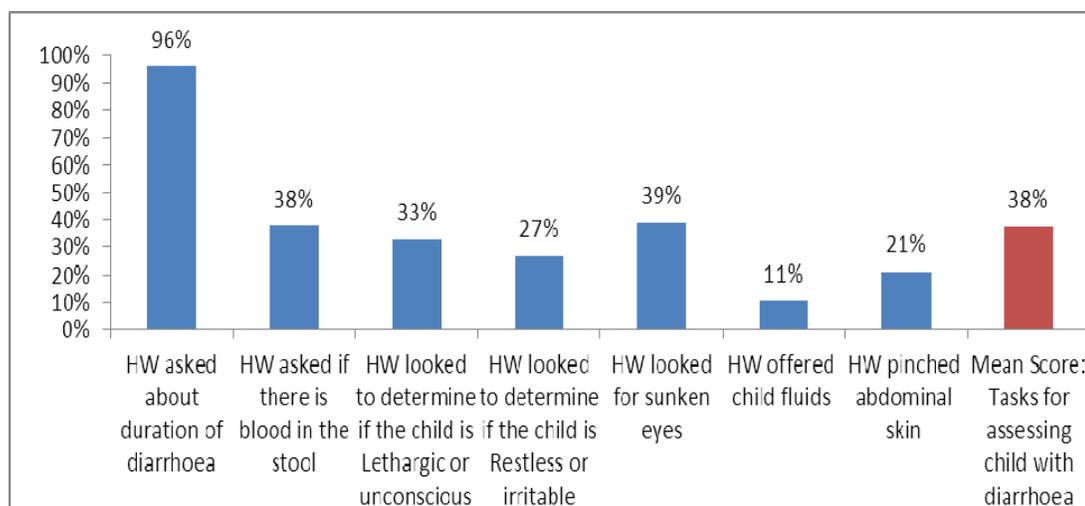
**Figure 6: Percentage of health workers correctly assessing, classifying and managing sick children for Diarrhoea (n= observations of HW)**



Breaking this analysis down further, of the 96 diarrhoea cases seen, the majority of health workers (96%) asked about the duration of diarrhoea, but only 38% asked if there was blood in the stool.

As shown in Figure 7 below, health workers performed poorly in assessing the level of dehydration of a sick child with only 39% looking for sunken eyes and only 21% pinching the abdominal skin to check for the skin turgor. Even fewer 11% of health workers offered the child fluid to drink to assess if the child was drinking normally, eagerly drinking or unable to drink, an important sign to classify the child for the degree of dehydration and to determine subsequent management and treatment.

**Figure 7: Percentage of health workers performing tasks to assess a sick child with diarrhoea (N=96 observations of HW)**



### 3.1.5 Assessing, classifying and managing sick children for fever

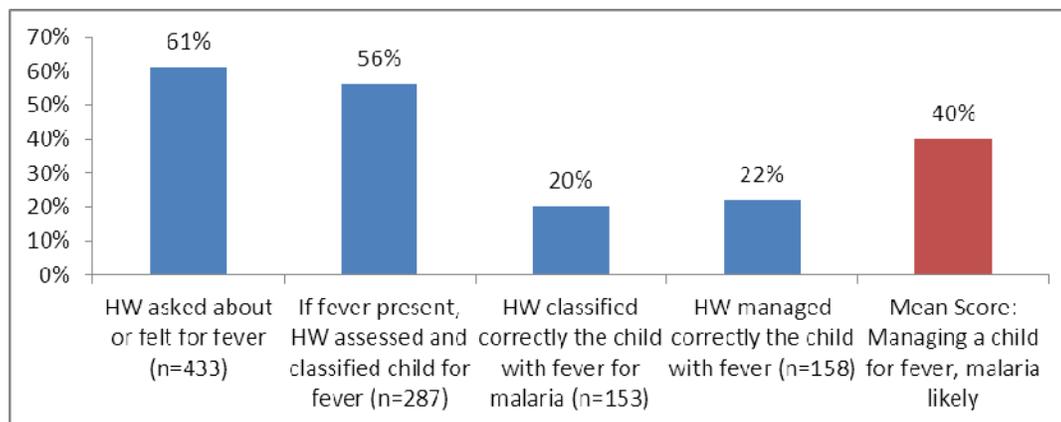
In Africa, symptoms of fever in a sick child are commonly due to malaria or measles, but can obviously also be due to other viral infections or other severe diseases. In Zimbabwe, malaria and measles account for 3% and 8% respectively of the overall

death burden of children less than five years of age. The classification of fever using the IMCI approach is focused on the identification and treatment of malaria and measles but also in identifying very sick children with other severe febrile illnesses so that these children can be urgently referred to hospitals.

In this assessment, health workers asked or checked for the presence of fever in 61% of cases. Of those with fever, 22% of health workers correctly classified children with malaria, but only 20% correctly provided appropriate management of the condition diagnosed.

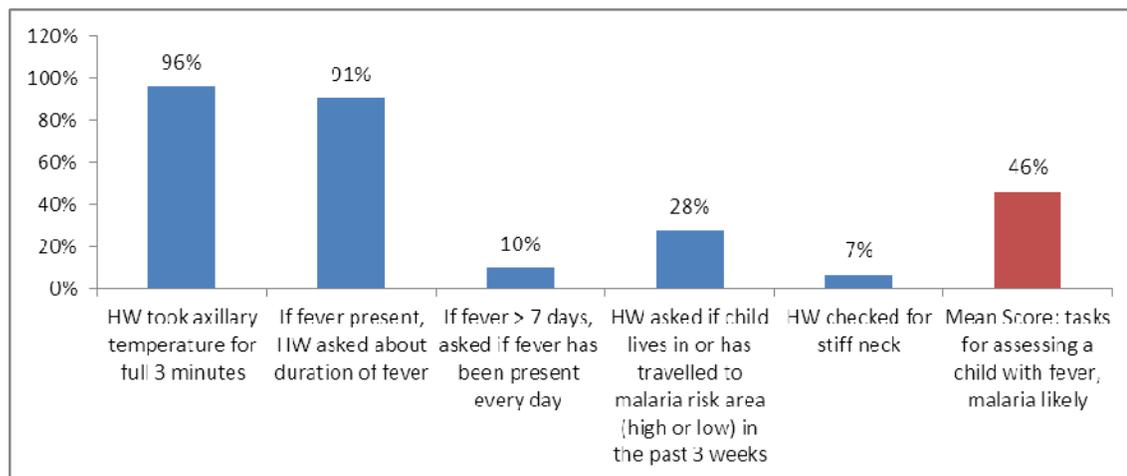
In addition, it is a standard practice to ask and check for measles in every sick child presenting with fever. The findings suggest that only 7% of health workers asked or checked for signs of measles. Whether health workers were adhering to the correct management of a measles case management could not be ascertained as no cases of measles or “measles with complication” were seen at any of the facilities sampled during the assessment period.

**Figure 8: Percentage of health workers correctly assessing, classifying and managing sick children with fever for Malaria (n= observations of HW)**



In addition to classifying malaria cases correctly, health workers are expected to ask specific questions related to malaria and always check for stiff neck to exclude signs of meningeal irritation. Practices observed following these IMCI standards are recorded in Figure 9 below. Of note, health workers performed particularly badly in checking for a stiff neck with only 7% observed carrying out this task.

**Figure 9: Percentage of health workers correctly carrying out tasks for assessing children with fever associated with malaria (N=162 observations of HW)**

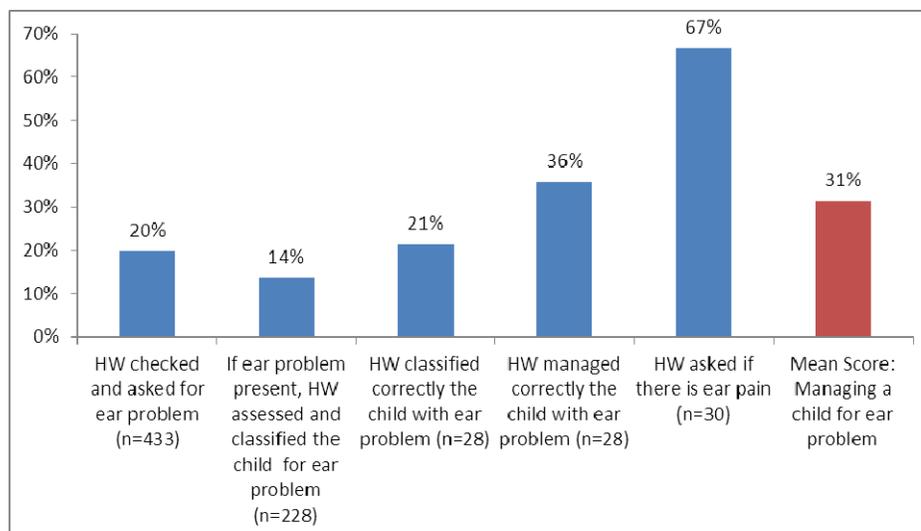


### 3.1.6 Assessing, classifying and managing sick children for Ear Problem

Ear problems are one of the major causes of morbidity in young children, causing repeated outpatient attendance and permanent disability. Ear infections are the main cause of preventable deafness in young children and in a few cases, an ear infection may also develop into a serious life-threatening complication known as mastoiditis.

Of the 436 cases observed, health workers only checked for ear problems in 20% of cases and only 14% of health workers correctly classified the child as having an ear condition.

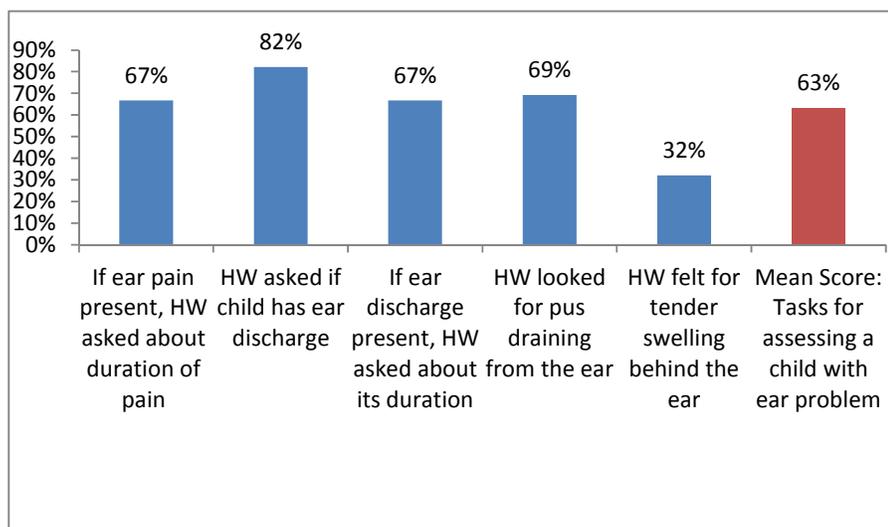
**Figure 10: Percentage of health workers correctly assessing, classifying and managing sick children with ear problems (n= observations of HW)**



Of the 31 sick children identified to have an ear problem, health workers only asked about ear pain in 67% of cases. Although a higher proportion (82%) asked about ear

discharge, only 69% of health workers examined for pus draining from the ear. Overall 63% of health workers correctly assessed a child for ear problems but only 36% correctly managed the problem.

**Figure 11: Percentage of health workers correctly assessing sick children for ear problems (N=31 observations of HW)**



### 3.1.7 Other common childhood illnesses and co-morbidities

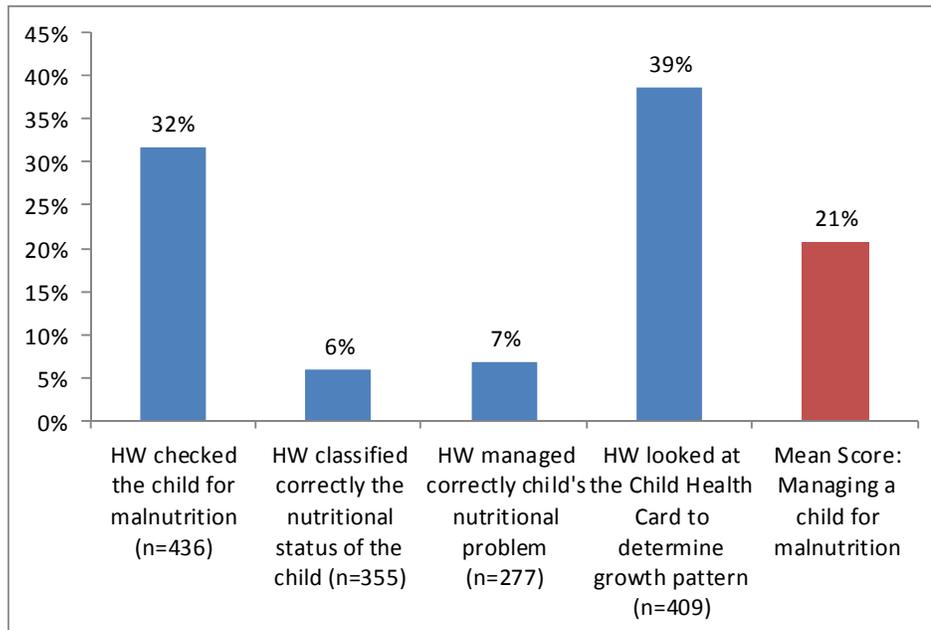
In the IMCI approach, health workers should in general ask every caregivers about the four main symptoms of cough, fever, diarrhoea and ear infections and enter these onto the assessment and classification box when that particular ‘main’ symptom is present. However, when it comes to the standard assessment and classification of a sick child, the immunisation, nutrition and HIV status should be assessed and classified for *every* child, regardless of the presence or absence of any problem related to these clinical entities.

#### a) Assessing and classifying sick children for Nutritional status

Malnutrition is a major underlying factor in child mortality. A child who is severely underweight is 8 times more likely to die from an infectious disease than a well-nourished child. Nationally 2.4% of children in Zimbabwe are wasted and 35% are stunted (MIMS, 2009). It is therefore routine practice in the IMCI approach to assess every sick child who is coming to the clinic on their nutritional status.

Just a third of health workers (31%) checked the nutritional status of the sick child seen and similar proportions used the child health card to determine trends in growth. As few as 7% of health workers correctly classified cases of malnutrition with appropriate management only provided by 6% of health workers according to IMCI standards. Of note, whilst 72% of health workers weighed a sick child, only 6% measured the height and 11% measured the mid upper arm circumference.

**Figure 12: Percentage of health workers correctly assessing, classifying and managing sick children for nutritional status (n= observations of HW)**



Similarly anaemia was poorly assessed with only 6% of health workers checking for signs of anaemia and only 4% correctly managing cases.

***b) Assessing sick children less than two years of age for Feeding Problem***

Assessing sick children less than 2 years of age for feeding problem is extremely important for the child's future growth and development. Routinely health workers should ask the mother about feeding difficulties and enquire about the diet. Health workers should also assess and check if an infant has any problems with breastfeeding including assessing for proper positioning and good attachment.

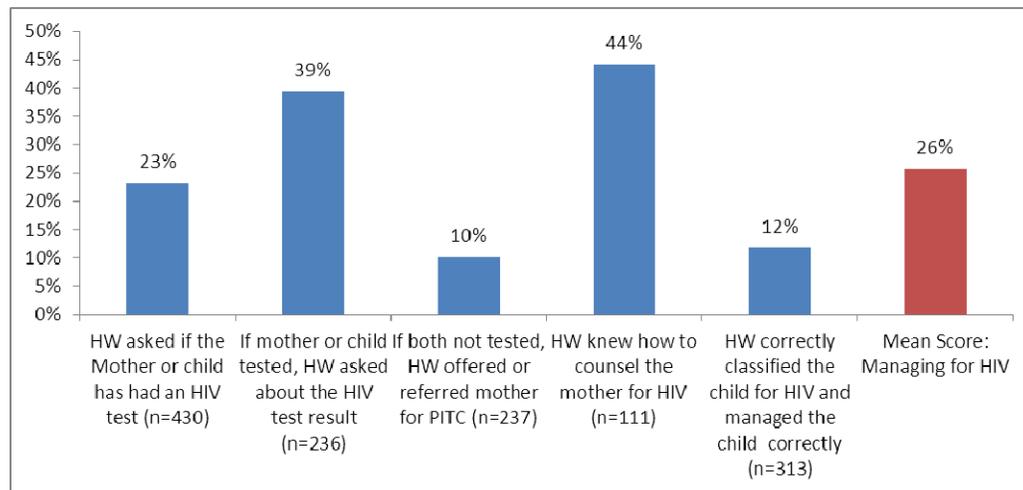
In this assessment, just over half (55%) of the health workers asked a mother or caregiver about feeding problems and of those with a feeding problem only 38% provided counselling.

***c) Assessing and classifying sick children for HIV/AIDS status***

More than 90% of HIV infected children acquire the infection from their mother, through vertical transmission. Despite progress made in improving access to PMTCT services, HIV/AIDS related conditions remain the second major cause of death in children less than five years of age in Zimbabwe. Therefore, a significant number of children presenting to first level health facilities may be exposed to HIV or have already acquired the HIV infection. Around 80% of HIV infected infants experience rapid disease progression before 12 months of age; with two thirds of them dying by their 2<sup>nd</sup> birthday. Therefore, every sick child presenting at a clinic should be checked and assessed for HIV infection for early detection and intervention.

During the consultation with a sick child, only 23% of the health workers asked whether the mother or child had taken an HIV test. In cases where both were not tested, only 10% of the health workers offered or referred the mother for PITC. This led to low rates of correct classification for HIV/AIDS which was only successfully made by 12% of the health workers.

**Figure 13: Percentage of health workers correctly assessing and classifying sick children for their HIV/AIDS status (n= observations of HW)**



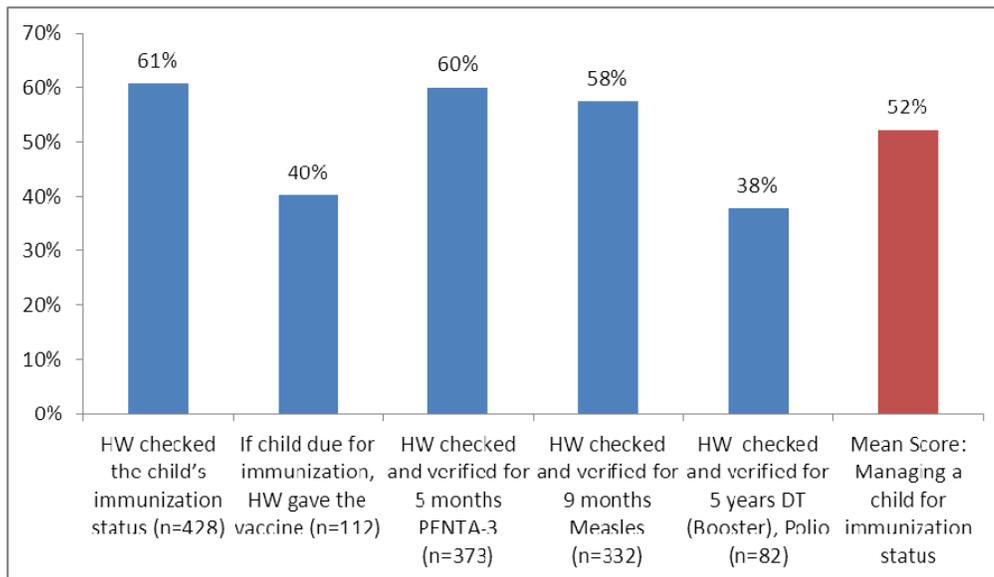
**d) Assessing and classifying sick children for immunisation status**

Immunisation of infants and young children has been recognised as one of the most powerful and cost-effective interventions to fight against commonly occurring and preventative childhood infections. Health workers are supposed to check the immunisation status of all sick children and decide if the child needs a vaccine on the day of the visit, as recommended by the national immunisation schedule.

The assessment found that 61% of health workers checked the immunisation status of every child seen, although only 40% gave the vaccine if the child was due this. These results are summarised in Figure 14 below.

Checking and verification for BCG (59%), Penta 3 (60%) and Measles (58%) was performed more often than checking for Vitamin A status which was only performed by 35% of health workers where the child was greater than six months.

**Figure 14: Percentage of health workers correctly assessing sick children on their immunisation status (n= observations of HW)**



### ***3.2 Observing health worker's skill in the assessment of sick young infants, aged 1 week up to 2 months***

While there are similarities in the management of sick young infants (aged 1 week up to 2 months) and sick children (aged 2 months up to 5 years), some clinical signs observed in young infants differ from those in older children. The steps that are normally followed in the IMCI approach to assess sick young infants include:

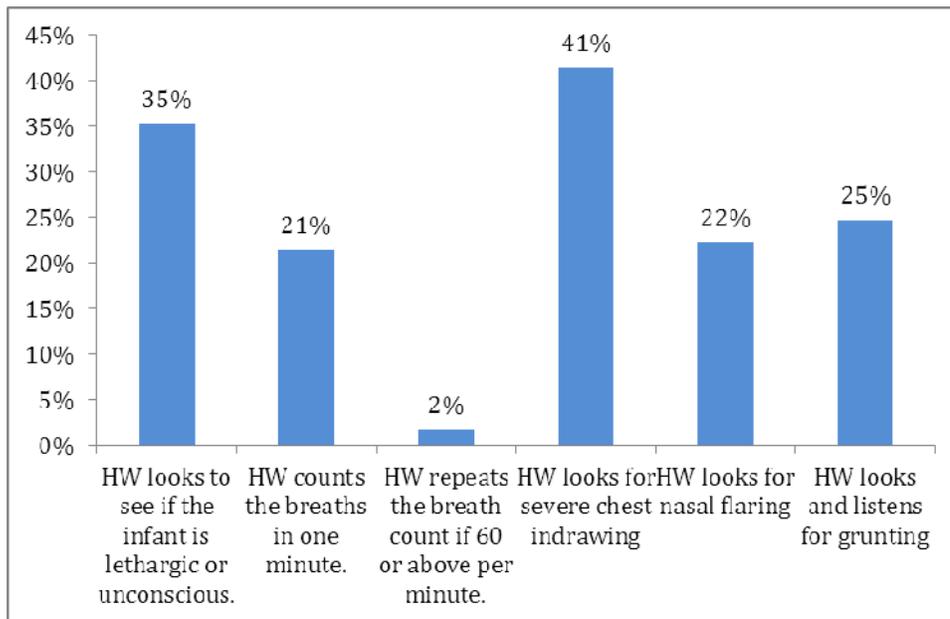
- Checking for severe disease and local bacterial infection
- Assessing if the young infant has diarrhoea
- Checking for feeding problems and/or low weight
- Checking immunisation and HIV status and assessing other problems

#### ***3.2.1 Initial assessment***

Of the 114 infants assessed between 1 week old and 2 months, almost all (99%) health workers solicited a history of the problem from the mother or caregiver. A further 88% of health workers went on to check the infant temperature and 80% weighed and recorded the weight of the sick infant being assessed. An early sign of illness in an infant is poor feeding and 67% of health workers asked for problems with feeding. Only a minority (9%) of health workers enquired whether the infant had any history of convulsions, which can be a sign of severe illness.

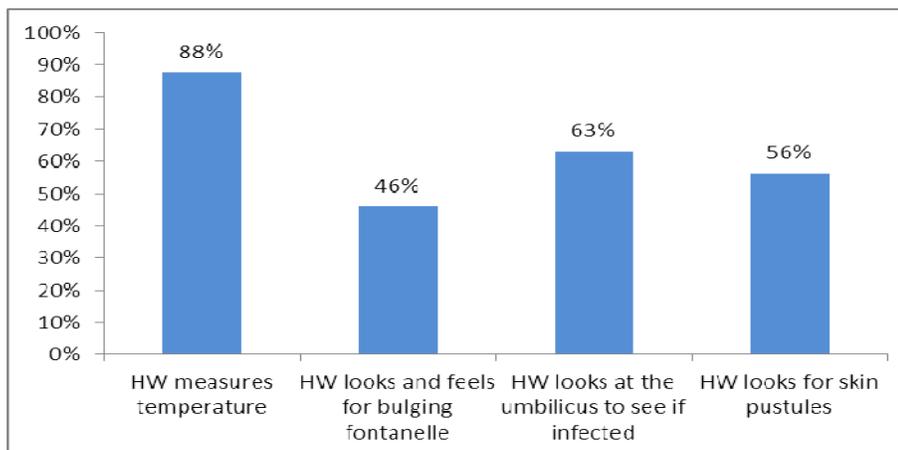
Observing the performance of health workers to correctly examine a sick infant, 21% of health workers correctly counted the respiratory rate and while 41% assessed the infant for signs of chest in-drawing, only 22% looked for nasal flaring, an important sign of respiratory distress.

**Figure 15: Proportion of Health workers who asked or checked for signs of very severe disease in sick young infants (N=113 observations of HW)**



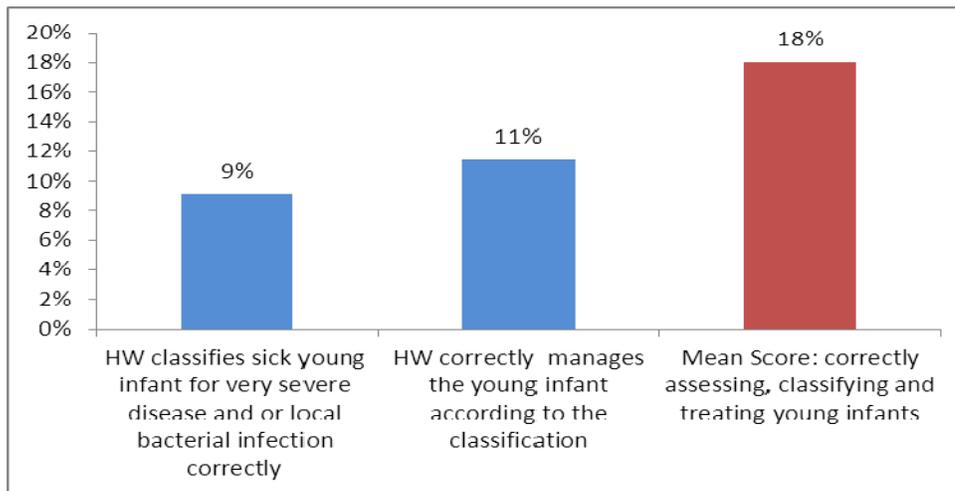
As shown in Figure 16, health workers performed better in checking for other signs of infections, with the umbilical cord checked in 63% of cases and the fontanelle examined to exclude signs of raised cerebral pressure in 46% of cases.

**Figure 16: Percentage of health workers assessing for signs of severe infection in infants aged 1 week to 2 months, (N=113 observations of HW)**



During the course of the assessment, only two infants presented with diarrhoea and were assessed. Of these only one was correctly assessed and managed according to the IMCI approach.

**Figure 17: Percentage of health workers correctly classifying and treating sick young infants (N=113 observations of HW)**



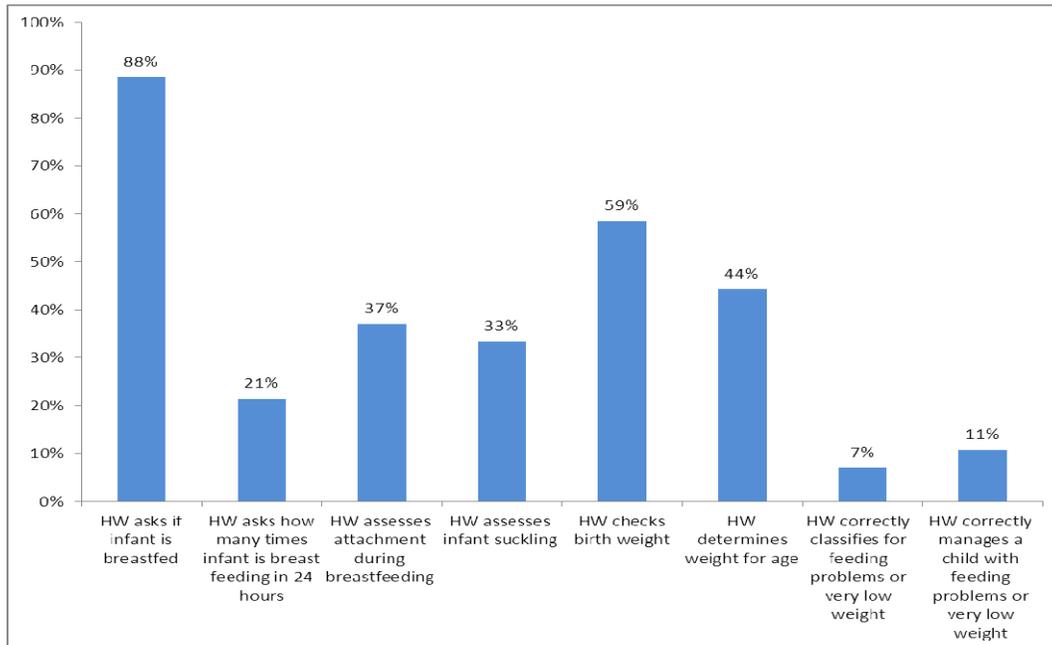
Overall only 8% of health workers correctly classified sick young infants for very severe disease and local bacterial infection and 11% correctly managed the sick young infant according to IMCI guidelines.

### ***3.2.2 Assessing, classifying and managing infant feeding problems***

Besides assessment and classification of a sick young infant for very severe disease and/or local bacterial infection, health workers are supposed to check optimal infant feeding practices and ensure there is proper positioning, good attachment and effective suckling of young infants during breastfeeding.

In this regard, 88% of health workers asked and assessed breastfeeding in a sick young infant. As shown in Figure 18, only 21% enquired about the frequency of breastfeeding, 33% checked for good attachment and effective suckling and as few as 11% correctly managed an infant with feeding problems or very low birth weight.

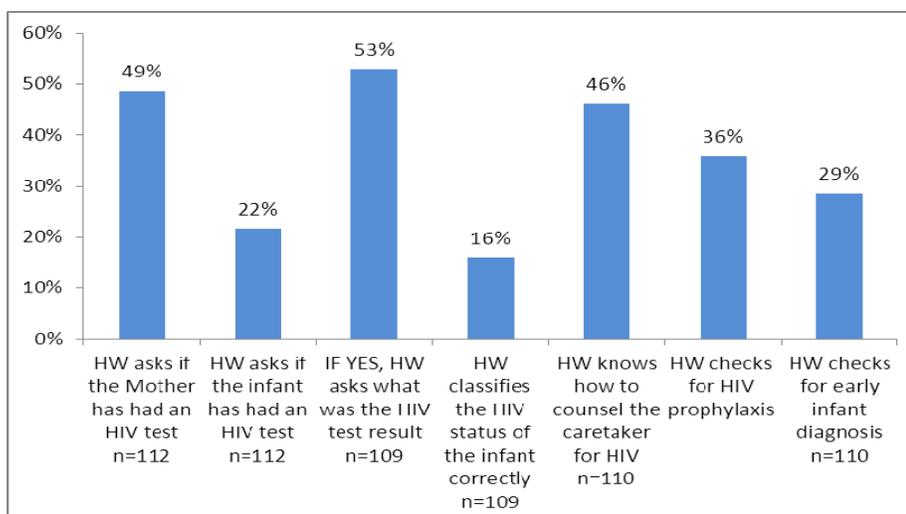
**Figure18: Percentage of health workers correctly assessing a sick young infant for appropriate breastfeeding practices (N=113 observations of HW)**



### 3.2.3 Assessing, classifying and managing HIV/AIDS

As already mentioned, identifying HIV-exposed and infected infants is critical to ensure that appropriate prophylaxis or treatment can be administered as soon as possible, in order to reduce morbidity and mortality. Less than half of health workers were observed enquiring about the HIV status of the mother and in only 36% of cases did a health worker ask whether HIV prophylaxis was being taken. Whilst early infant diagnosis has been scaled up significantly in Zimbabwe, only 29% of health workers enquired whether an infant had had an HIV test.

**Figure 19: Percentage of health workers assessing, classifying and managing HIV/AIDS in sick infants (n= observations of HW)**

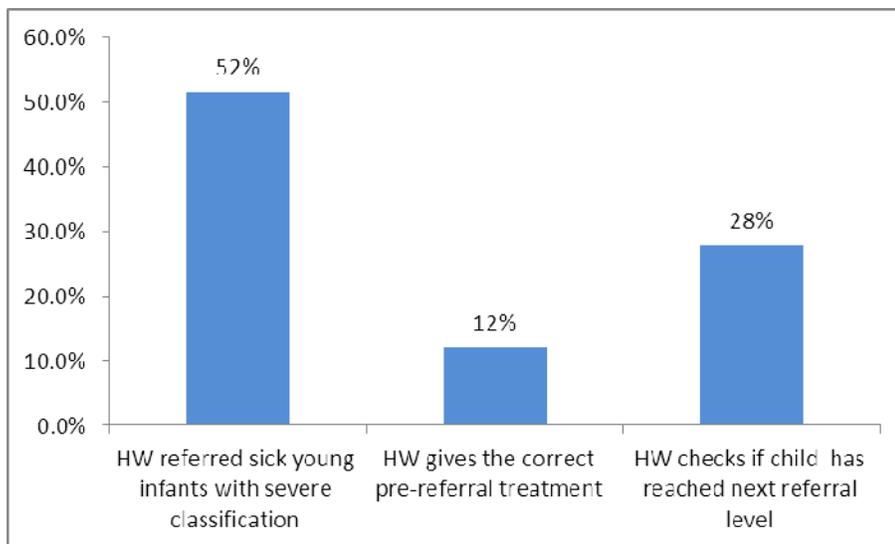


### 3.2.4 Counselling the mother, follow-up and referrals

For all sick infants, health workers are expected to counsel the mother on home treatment, infant feeding and ensure mothers are aware of the need for follow-up care. Some sick infants may need to return to a health facility to assess if the infant is improving or needs re-assessment.

The findings revealed that 53% of health workers taught caregivers how to give an antibiotic where this was indicated and almost half (48%) checked if caregivers knew when to come back to the clinic for follow-up. 77% of health workers educated mothers on when to come back for the next immunisation schedule.

**Figure 20: Percentage of health workers correctly classifying and managing referral of very sick infants**



As shown in the final Figure 20, 52% of health workers appropriately referred a sick young infant according to the IMCI protocols. However only 12% provided the correct pre-referral treatment and only 28% of health workers followed up to see if the child had reached the next level of care.

## Discussion and Key Summary points

The generic tool for the child health quality of care assessment component of the NIHFA was developed based on the IMCI follow-up after training tool. It was against this background that the MOHCW in collaboration with development partners has been able to design a survey to assess the quality of child health care using the IMCI standard assessment approach. This is first time this has been done in Zimbabwe and the results will be used to improve programme implementation and the possibility of reinitiating the IMNCI training at the national level.

### ***Assessing for General Danger signs***

Correctly identifying and managing general danger signs is an extremely important skill that every health worker should master, in order to provide appropriate treatment to reduce infant and childhood morbidity and mortality. The assessment findings suggest that health workers' skills in checking and classifying general danger signs in infants and children was alarmingly low. More than 80% of health workers were not well versed in asking and checking for the five cardinal danger signs, and only 6% correctly classified sick children with these symptoms. Taking into consideration that most health workers have been exposed to the IMCI approach during either pre-service or in-service training (57%), this is an alarmingly low result that was not anticipated.

### ***Assessment of the four main symptoms***

Although, more than half of the health workers asked about symptoms of cough or difficult breathing and made the right assessment, correct classification and management was provided only by 22% of health workers. Findings were similar in the correct classification and management of diarrhoea where only 23% provided the correct treatment. Failures in management and treatment of common childhood illnesses will contribute to the high morbidity and mortality rates in children less than five years of age experienced in Zimbabwe. Analysing the shortfalls in making a diagnosis and successfully treating children will help to improve and strengthen the IMCI approach.

The IMCI assessment and classification of sick children with fever essentially helps to target the identification of children with malaria and measles, as well as other children with severe infections. Sixty one percent of the health workers asked or checked for fever, but correct classification and management was made by only 22% and 20% respectively. More worryingly, checking for measles in sick children with fever is supposed to be a mandatory practice in the IMCI approach. However, only 7% of health workers fully enquired and checked for measles as a cause of fever. The recent measles campaign in 2010 and the recent increase in measles vaccine coverage, may have resulted in a significant reduction in measles cases coming into clinics, resulting in health workers paying less attention to this aspect of child health and suspecting less cases to occur.

Of similar concern was the correct classification and treatment of common ear problems. Although, two thirds of health workers asked about ear problems, the correct classification was only made by 21% with as few as 14% correctly treating a child with an ear problem.

### ***Assessing and classifying children for nutritional, HIV/AIDS and Immunisation status***

The findings for the assessment of the nutritional status of a sick child was another area of great concern that requires serious attention. All the nutritional assessment parameters such as determining the growth pattern was only correctly performed by a

third of health workers. Correct classification and management of malnutrition was only performed by 7 and 6% of the health workers respectively. Ensuring health workers have adequate skills to assess the nutritional status of children therefore needs to be urgently addressed, as malnutrition is a critical factor contributing as an underlying cause to high rates of infant and childhood morbidity and mortality.

The same holds true for the assessment and classification of sick children with HIV/AIDS. More than 77% of health workers did not ask about the HIV status of either the mother or the child. More alarmingly of those with unknown HIV status, only 10% of health workers offered or referred the mother/child for PITC, despite there being a national policy to support this. Major opportunities are therefore being missed to identify sick children who may be HIV-exposed or infected and offering them life-saving treatment.

More than 60% of health workers assessed a sick child's immunisation status, although only forty percent gave the vaccine if the child was due. This may have been because the health worker was worried about signs of severe infection which is a contraindication to administering some vaccines.

#### ***Assessment of a sick young infant age 1 week up to 2 months***

Most sick young infants with infection or neonatal metabolic problems, commonly present with feeding difficulty, fast breathing, convulsions and temperature instability. Interestingly most of the health workers (88%) checked and recorded the temperature of sick young infants seen and two thirds of them asked about difficulties in feeding. However, health workers examination of signs of respiratory distress was poorly performed by most of the health workers observed, as was the assessment of cerebral irritation. What was not clear from the analysis was whether these examinations were not done because health workers lack confidence in examining infants or whether they were not aware of the standard techniques required to fully assess a sick infant. This needs further exploration.

## **Conclusion**

In Zimbabwe, the demand for health care is considered to be relatively good, as evidenced by the high national ANC coverage (90%) and improved EPI coverage rate (measles coverage of 87%). However, from the findings it is clear that there are challenges in the availability of health workers with the right knowledge, skills and attitude to manage child health illnesses.

The findings suggest that many sick infants and children attending outpatient clinics are not receiving the standard and quality of care expected using the integrated case management approach.

Although significant knowledge and skills gaps were observed among all health workers in many areas of the assessment of a sick infant or child, skill deficiencies in

assessing and classifying sick infants and children for general danger signs, nutrition and HIV/AIDS were particularly high. This is despite their being additional vertical trainings in Nutrition and HIV/PMTCT. These significant gaps could be due to low numbers of health workers being refreshed on IMCI guidelines as there have been only a few in-service trainings undertaken since 2005. More focus needs to be given to 'skill based' integrated training. Lack of regular supportive supervision to regularly identify knowledge and skill gaps may also be a contributory factor to poor performance in some areas, as supervision is critical in strengthening the skills of health workers on the job at all levels.

## Recommendations

- Ensure the revised IMNCI training package is fully incorporated into all nursing and medical schools and ensure all tutors in these training institutions are trained on the updated IMNCI approach.
- Increase the number of health workers who receive in-service training in IMNCI, inclusive of clinical instructors. This training now needs to include the management of newborns in the first week of life, so for those health workers already trained in IMCI, updating on the new neonatal module is still required. All health workers who manage sick children and infants at all levels need to be included in these trainings.
- Customise the IMNCI follow-up training tool, so that it can be used to conduct regular supportive supervision to all health workers who manage sick children, to reinforce their skills through on-the-job training and refreshers.
- A regular supply of essential drugs and consumables used in the management and treatment of sick infants and children is required. The current logistics systems need to be strengthened to support this.
- The community health delivery systems need to be strengthened to promote greater health care seeking behavior in the community.

### Annex 1: Services Provided by Health workers interviewed by Facility Type

Services Provided in the Past 3 Months	Central Hospital	Prov. Hospital	District Hospital	Rural hospital	Urban Mun. Clinic	Rural Health Centre	Mission Hospital	Mission Clinic	Private Hospital
	n=12	n=10	n=67	n=45	n=56	n=312	n=39	n=19	n=7
Supervise CHW/VHW	25.0	0.0	43.3	77.8	39.3	85.3	64.1	78.9	28.6
Supervise TBA	0.0	0.0	17.9	42.2	14.3	37.8	30.8	5.3	0.0
Consultation for children	75.0	90.0	91.0	100.0	96.4	95.8	94.9	94.7	85.7
Consultation for adults	83.3	100.0	89.6	95.6	94.6	96.5	87.2	94.7	100.0
Family planning	75.0	70.0	91.0	95.6	89.3	96.8	84.6	89.5	85.7
ANC (Antenatal care)	66.7	80.0	91.0	97.8	82.1	92.0	79.5	94.7	71.4
PNC (Postnatal care)	66.7	70.0	89.6	97.8	80.4	92.6	82.1	94.7	57.1
Deliveries in facility	41.7	20.0	46.3	82.2	58.9	86.2	59.0	94.7	57.1
Tuberculosis (TB) Treatment/diagnosis	50.0	60.0	61.2	86.7	73.2	81.4	69.2	84.2	71.4
Vaccinations	66.7	70.0	86.6	95.6	82.1	84.6	87.2	84.2	100.0
Malaria treatment	58.3	90.0	86.6	95.6	89.3	87.8	89.7	89.5	85.7
Nutrition (all aspects)	75.0	80.0	92.5	82.2	89.3	87.8	94.9	94.7	85.7
CHW training	8.3	20.0	28.4	33.3	17.9	35.9	33.3	26.3	28.6
TBA training	0.0	0.0	13.4	26.7	8.9	17.6	15.4	5.3	0.0
Treatment of disability	33.3	20.0	43.3	48.9	32.1	37.8	48.7	52.6	71.4
HIV/AIDS treatment and care	91.7	70.0	88.1	91.1	85.7	82.7	89.7	84.2	71.4
Other	0.0	0.0	1.5	2.2	5.4	2.2	2.6	0.0	0.0

## Annex 2: Training Received by Facility Type

Training Area	Period Trained	Central Hospital	Provincial Hospital	District Hospital	Rural Hospital	Urban/Municipal Clinic	Rural Health Centre	Mission Hospital	Mission Clinic	Private Hospital	Total
		n=12	n=10	n=67	n=45	n=57	n=316	n=39	n=19	n=7	n=572
IMCI	Less than 1 year	16.7	10.0	17.9	11.1	14.0	11.4	5.1	10.5	14.3	12.1
	> 1 year ago	8.3	10.0	20.9	31.1	31.6	25.3	15.4	15.8	0.0	24.0
	Never	75.0	80.0	61.2	57.8	54.4	63.3	79.5	73.7	85.7	64.0
Malaria	Less than 1	0.0	10.0	20.9	28.9	15.8	31.0	35.9	36.8	28.6	27.6
	> 1 yr ago	25.0	70.0	40.3	37.8	43.9	48.1	38.5	31.6	28.6	44.4
	Never	75.0	20.0	38.8	33.3	40.4	20.9	25.6	31.6	42.9	28.0
TB	Less than 1	16.7	30.0	16.4	31.1	38.6	33.9	41.0	47.4	0.0	32.2
	>1 yr ago	8.3	20.0	19.4	11.1	21.1	22.2	10.3	26.3	14.3	19.8
	Never	75.0	50.0	64.2	57.8	40.4	44.0	48.7	26.3	85.7	48.1
Family Planning	Less than 1	0.0	10.0	6.0	6.7	12.3	5.1	7.7	5.3	0.0	6.1
	>1 yr ago	16.7	20.0	26.9	17.8	28.1	16.1	28.2	21.1	42.9	20.1
	Never	83.3	70.0	67.2	75.6	59.6	78.8	64.1	73.7	57.1	73.8
Labour and Delivery	Less than 1	16.7	20.0	13.4	22.2	14.0	18.4	25.6	5.3	14.3	17.7
	>1 yr ago	0.0	20.0	16.4	11.1	14.0	12.3	20.5	5.3	0.0	12.9
	Never	83.3	60.0	70.1	66.7	71.9	69.3	53.8	89.5	85.7	69.4
Mental Health	Less than 1	0.0	10.0	1.5	0.0	3.5	1.6	0.0	0.0	0.0	1.6
	>1 yr ago	8.3	10.0	3.0	6.7	5.3	4.7	7.7	0.0	0.0	4.9
	Never	91.7	80.0	95.5	93.3	91.2	93.7	92.3	100.0	100.0	93.5
Management Training	Less than 1	8.3	0.0	7.5	8.9	1.8	9.5	5.1	0.0	28.6	7.9
	>1 yr ago	8.3	10.0	9.0	6.7	14.0	8.5	12.8	5.3	14.3	9.3
	Never	83.3	90.0	83.6	84.4	84.2	82.0	82.1	94.7	57.1	82.9
Community Health	Less than 1	0.0	20.0	9.0	8.9	3.5	5.7	10.3	0.0	0.0	6.3
	>1 yr ago	0.0	0.0	1.5	2.2	10.5	7.3	7.7	0.0	0.0	5.9
	Never	100.0	80.0	89.6	88.9	86.0	87.0	82.1	100.0	100.0	87.8
Pre/post-natal Care	Less than 1	16.7	10.0	20.9	20.0	17.5	21.8	28.2	10.5	14.3	20.8
	>1 yr ago	0.0	30.0	16.4	13.3	15.8	13.3	23.1	5.3	14.3	14.3
	Never	83.3	60.0	62.7	66.7	66.7	64.9	48.7	84.2	71.4	64.9
HIV/AIDS Care and	Less than 1	33.3	40.0	50.7	40.0	49.1	46.5	61.5	31.6	28.6	46.7

<b>Management</b>	>1 yr ago	50.0	40.0	29.9	42.2	26.3	25.6	23.1	31.6	42.9	28.5
	Never	16.7	20.0	19.4	17.8	24.6	27.8	15.4	36.8	28.6	24.8
<b>Hypertension</b>	Less than 1	0.0	10.0	10.4	8.9	8.8	5.7	10.3	0.0	14.3	7.0
	1 yr ago	0.0	30.0	9.0	6.7	5.3	6.6	2.6	0.0	14.3	6.6
	Never	100.0	60.0	80.6	84.4	86.0	87.7	87.2	100.0	71.4	86.4
<b>Diabetes</b>	Less than 1	0.0	20.0	9.0	6.7	1.8	4.4	7.7	0.0	14.3	5.2
	>1 yr ago	0.0	20.0	6.0	6.7	3.5	6.6	10.3	0.0	14.3	6.5
	Never	100.0	60.0	85.1	86.7	94.7	88.9	82.1	100.0	71.4	88.3
<b>EmONC (Emergency Obstetric and Neonatal Care)</b>	Less than 1	8.3	10.0	13.4	20.0	24.6	13.3	10.3	0.0	0.0	14.0
	>1 yr ago	25.0	20.0	19.4	13.3	21.1	20.6	28.2	5.3	0.0	19.8
	Never	66.7	70.0	67.2	66.7	54.4	66.1	61.5	94.7	100.0	66.3
<b>HBB</b>	Less than 1 yr ago	25.0	10.0	17.9	17.8	19.3	17.7	7.7	0.0	0.0	16.4
	>1 yr ago	0.0	10.0	6.0	6.7	14.0	7.9	15.4	5.3	0.0	8.4
	Never	75.0	80.0	76.1	75.6	66.7	74.4	76.9	94.7	100.0	75.2
<b>LSS</b>	Less than 1	0.0	10.0	9.0	15.6	7.0	9.8	7.7	0.0	14.3	9.3
	>1 yr ago	8.3	10.0	4.5	6.7	14.0	5.7	12.8	5.3	28.6	7.3
	Never	91.7	80.0	86.6	77.8	78.9	84.5	79.5	94.7	57.1	83.4
<b>EPI (Expanded Programme of Immunisation)</b>	Less than 1	0.0	0.0	13.4	26.7	22.8	24.7	23.1	31.6	14.3	22.4
	>1 yr ago	16.7	50.0	28.4	17.8	15.8	23.4	23.1	21.1	14.3	22.9
	Never	83.3	50.0	58.2	55.6	61.4	51.9	53.8	47.4	71.4	54.7
<b>Infection Control</b>	Less than 1	33.3	10.0	16.4	17.8	19.3	18.7	33.3	15.8	14.3	19.4
	>1 yr ago	0.0	40.0	7.5	17.8	19.3	21.2	15.4	21.1	14.3	18.5
	Never	66.7	50.0	76.1	64.4	61.4	60.1	51.3	63.2	71.4	62.1

### Annex 3: Training Needs by Facility Level

Training Needs	Central Hospital	Provincial Hospital	District Hospital	Rural hospital	Urban/Municipal Clinic	Rural Health Centre	Mission Hospital	Mission Clinic	Private Hospital
	n=8	n=10	n=62	n=42	n=49	n=297	n=37	n=19	n=7
IMCI	100.0	60.0	53.2	88.1	55.1	57.9	56.8	47.4	0.0
Malaria	50.0	40.0	46.8	57.1	30.6	36.4	37.8	26.3	57.1
TB	37.5	50.0	54.8	59.5	38.8	48.5	56.8	36.8	14.3
Family Planning Methods	75.0	40.0	56.5	73.8	49.0	51.9	64.9	47.4	14.3
Labour and Delivery	75.0	60.0	56.5	64.3	55.1	55.2	67.6	52.6	28.6
Mental Health	37.5	50.0	58.1	73.8	46.9	48.8	51.4	47.4	0.0
Management Training	62.5	60.0	56.5	69.0	51.0	52.2	56.8	52.6	0.0
Community Health	62.5	60.0	54.8	71.4	49.0	47.5	64.9	47.4	0.0
Pre/post-natal Care	62.5	50.0	50.0	64.3	46.9	44.8	56.8	36.8	0.0
HIV/AIDS Care and Management	50.0	70.0	56.5	69.0	57.1	57.9	67.6	36.8	28.6
Hypertension	75.0	70.0	53.2	69.0	42.9	49.2	59.5	47.4	14.3
Diabetes	62.5	70.0	51.6	73.8	46.9	48.1	62.2	47.4	0.0
EmONC (Emergency Obstetric and Neonatal Care)	50.0	50.0	62.9	71.4	53.1	55.6	54.1	42.1	14.3
HBB	62.5	50.0	54.8	73.8	40.8	47.5	48.6	57.9	14.3
LSS	62.5	50.0	51.6	73.8	44.9	45.1	59.5	36.8	14.3
EPI (Expanded Programme of Immunisation)	62.5	20.0	50.0	73.8	44.9	45.8	51.4	36.8	28.6
Infection Control	62.5	30.0	51.6	69.0	51.0	46.1	54.1	52.6	42.9

### Annex 4: Training Needs by Province

Training Needs	Manical and	Mash East	Mash Central	Mash West	Midlands	Masvingo	Mat North	Mat South	Harare	Bulawayo
	n=58	n=74	n=68	n=55	n=69	n=81	n=63	n=49	n=12	n=2*
IMCI	15.5	77.0	13.2	100.0	76.8	86.4	9.5	81.6	100.0	100.0
Malaria	24.1	48.6	16.2	45.5	33.3	59.3	38.1	44.9	33.3	50.0
TB	37.9	59.5	35.3	69.1	43.5	58.0	33.3	55.1	41.7	100.0
Family Planning Methods	32.8	67.6	45.6	78.2	59.4	58.0	41.3	44.9	58.3	100.0
Labour and Delivery	34.5	64.9	60.3	72.7	69.6	56.8	36.5	55.1	58.3	100.0
Mental Health	31.0	58.1	44.1	76.4	56.5	58.0	23.8	61.2	41.7	100.0
Management Training	37.9	56.8	44.1	78.2	53.6	66.7	33.3	59.2	50.0	100.0
Community Health	34.5	56.8	42.6	78.2	49.3	61.7	34.9	51.0	50.0	100.0
Pre/post-natal Care	27.6	56.8	41.2	72.7	43.5	54.3	25.4	57.1	50.0	100.0
HIV/AIDS Care and Management	55.2	62.2	51.5	69.1	55.1	66.7	49.2	53.1	58.3	100.0
Hypertension	27.6	58.1	35.3	80.0	55.1	60.5	38.1	57.1	50.0	100.0
Diabetes	24.1	63.5	38.2	83.6	52.2	58.0	31.7	59.2	50.0	100.0
EmONC	36.2	73.0	45.6	78.2	50.7	63.0	33.3	71.4	41.7	100.0
HBB	22.4	60.8	38.2	70.9	55.1	63.0	25.4	61.2	50.0	100.0
LSS	24.1	58.1	39.7	74.5	46.4	60.5	28.6	55.1	50.0	100.0
EPI (Expanded Programme of Immunisation)	32.8	56.8	26.5	67.3	43.5	61.7	39.7	53.1	50.0	100.0
Infection Control	32.8	55.4	42.6	60.0	42.0	64.2	41.3	55.1	50.0	1550.0

## Annex 5: Child Health Knowledge by Cadre and Province

Province	State Registered Nurse Mean (SD)	State Certified Nurse Mean (SD)	Primary Care Nurse Mean (SD)	Nurse Midwife Mean (SD)	P-value
Manicaland (n=53)	56.1 (17.3)	48.3 (6.9)	51.9 (15.0)	64.3 (12.5)	0.216
Mashonaland East (n=70)	66.7 (10.2)	67.8 (15.5)	55.7 (16.6)	57.6 (16.9)	0.052
Mashonaland Central (n=69)	57.0 (10.6)	42.6 (18.4)	52.1 (21.2)	63.3 (9.5)	0.198
Mashonaland West (n=57)	59.8 (16.0)	66.7 (-)	47.7 (22.1)	47.2 (12.7)	0.119
Midlands (n=68)	50.0 (22.7)	44.4 (34.7)	16.7 (2.6)	57.1 (4.2)	0.223
Masvingo (n=75)	64.2 (14.2)	50.0 (0)	63.5 (16.6)	61.3 (16.3)	0.617
Matabeleland North (n=53)	64.7 (10.0)	58.3 (5.3)	59.3 (16.6)	50.0 (16.7)	0.092
Matabeleland South (n=53)	66.7 (8.9)	65.3 (17.8)	47.5 (23.1)	58.4 (11.8)	0.07
Harare (n=12)	59.4 (15.1)			70.8 (10.8)	0.209
Bulawayo (n=12)	72.2 (4.8)	69.4 (12.7)		70.8 (7.0)	0.918

\* Data insufficient for statistical analysis for other cadres

## Annex 6: Child Health Knowledge for Cadre and Facility Type

Facility type	State Registered Nurse Mean (SD)	State Certified Nurse Mean (SD)	Primary Care Nurse Mean (SD)	Nurse Midwife Mean (SD)	P-value
Central Hospital (n=12)	58.4 (16.7)	69.4 (12.7)		69.4 (9.6)	0.45
Provincial Hospital (n=10)	49.1 (15.8)			66.7 (n=1)	0.296
District Hospital (n=68)	63.8 (15.0)	55.0 (28.6)	56.7 (23.1)	58.9 (14.1)	0.107
Rural Hospital (n=45)	61.4 (15.9)	54.2 (5.7)	58.3 (18.4)	66.7 (11.8)	0.768
Urban Hospital (n=54)	63.2 (12.8)	59.7 (19.3)	51.7 (23.5)	66.0 (15.8)	0.066
Rural Health Centre (n=272)	61.8 (13.8)	53.8 (16.9)	52.9 (19.6)	63.9 (13.7)	<b>0.02</b>
Mission Hospital (n=37)	55.7 (16.9)		66.7 (11.8)	52.1 (8.6)	<b>0.042</b>
Mission Clinic (n=16)	66.7 (11.8)		51.4 (15.8)	58.3 (n=1)	0.624
Private Hospital (n=7)	70.9 (5.9)		41.7 (n=1)	43.8 (15.8)	0.176

\* Data insufficient for statistical analysis for other cadres

## Annex 7: Maternal Health Knowledge for Cadre and Province

Province	State Registered Nurse (SRN)	State Certified Nurse (SCN)	Nurse Midwife	P-value
<b>Manicaland (n=9)</b>	25.0 (-)	25.0 (-)	42.9 (38.9)	0.157
<b>Mashonaland East (n=18)</b>	50.0 (0.00)	46.9 (12.0)	55.7 (18.8)	<b>0.048</b>
<b>Mashonaland Central (n=11)</b>	50.0 (0.00)	50.0 (12.5)	50.0 (26.2)	1
<b>Mashonaland West (n=7)</b>	43.8 (8.8)	12.5 (-)	50.0 (12.5)	0.156
<b>Midlands (n=13)</b>	45.8 (7.2)	25.0 (-)	48.2 (15.2)	0.569
<b>Masvingo (n=24)</b>	50.0 (10.2)		51.9 (13.0)	0.789
<b>Matabeleland North (n=9)</b>	37.5 (0.00)	37.5 (21.7)	62.5 (35.4)	0.416
<b>Matabeleland South (n=6)</b>	50.0 (-)	41.7 (26.0)	62.5 (0.00)	0.614

\* Data insufficient for statistical analysis for Harare and Bulawayo

## Annex 8: Maternal Health Knowledge for Cadre and Facility Type

Facility type	State Registered Nurse (SRN)	State Certified Nurse (SCN)	Nurse Midwife	P-value
<b>Central Hospital (n=2)</b>	-	12.5 (n=1)	50.0 (n=1)	-
<b>Provincial Hospital (n=2)</b>	50.0 (n=1)	-	37.5 (n=1)	-
<b>District Hospital (n=26)</b>	47.9 (5.1)	25.0 (0.0)	53.9 (18.7)	0.123
<b>Rural Hospital (n=8)</b>	41.7 (19.1)	37.5 (n=1)	50.0 (10.2)	0.659
<b>Urban Hospital (n=12)</b>	50.0 (n=1)	62.5 (n=1)	45.0 (14.7)	0.535
<b>Rural Health Centre (n=35)</b>	40.6 (6.3)	43.2 (17.1)	52.8 (11.8)	<b>&lt;0.001</b>
<b>Mission Hospital (n=10)</b>	50.0 (0.00)	-	51.6 (19.4)	0.916

\* Data insufficient for statistical analysis for Mission Clinic and Private Hospital

## Annex 9: Reported Health Worker Satisfaction Mean Scores by Facility Type

Satisfaction Area	Central Hospital	Provincial Hospital	District Hospital	Rural Hospital	Urban/Municipal Hospital	Rural Health Centre	Mission Hospital	Mission Clinic	Private Hospital
	n=3	n=4	n=44	n=37	n=30	n=227	n=26	n=14	n=3
Working relationship with other facility staff	100.0	100.0	95.5	94.6	90.0	95.6	96.2	100.0	100.0
Working relationship with DHE/PHE	100.0	75.0	93.2	89.2	93.3	97.4	92.3	92.9	100.0
Availability of medicine in the health facility	66.7	75.0	45.5	67.6	96.7	87.7	57.7	78.6	100.0
Availability of equipment and supplies in the health facility	66.7	75.0	34.1	45.9	76.7	68.3	65.4	64.3	33.3
The physical condition of the health facility building	66.7	100.0	38.6	29.7	53.3	50.7	42.3	57.1	33.3
Your ability to provide high quality of care	33.3	100.0	93.2	94.6	90.0	91.6	80.8	92.9	100.0
Your training opportunities to upgrade your skills and knowledge	66.7	50.0	63.6	43.2	53.3	62.1	53.8	28.6	100.0
Your salary	33.3	25.0	4.5	21.6	40.0	25.6	11.5	14.3	33.3
Employment benefits (travel allowance, bonus etc.)			6.8	35.1	43.3	34.8	19.2	28.6	
Living accommodations for your family	33.3	50.0	36.4	43.2	66.7	57.3	61.5	57.1	66.7
Education for your children	33.3	25.0	45.5	43.2	70.0	54.2	80.8	35.7	66.7
Your opportunities for promotion	100.0	50.0	56.8	54.1	53.3	58.6	38.5	35.7	66.7
Overall, your satisfaction with your job	66.7	100.0	84.1	91.9	100.0	96.0	88.5	100.0	100.0

A mean score of 100 indicates the highest level of satisfaction

## Annex 10: Reported Health Worker Satisfaction Mean Scores by Province

	Manicaland	Mash East	Mash Central	Mash West	Midlands	Masvingo	Mat North	Mat South	Harare	Bulawayo
Satisfaction Area	n=46	n=59	n=60	n=47	n=43	n=65	n=41	n=22	n=12	n=12
<b>Working relationship with other facility staff</b>	97.8	96.6	95.0	93.6	97.7	98.5	90.2	86.4	100.0	100.0
<b>Working relationship with DHE/PHE</b>	89.1	100.0	93.3	93.6	93.0	93.8	100.0	100.0	75.0	75.0
<b>Availability of medicine in the health facility</b>	91.3	84.7	88.3	68.1	67.4	86.2	70.7	50.0	83.3	75.0
<b>Availability of equipment and supplies in the health facility</b>	69.6	69.5	86.7	57.4	44.2	56.9	51.2	36.4	58.3	75.0
<b>The physical condition of the health facility building</b>	56.5	62.7	66.7	44.7	37.2	32.3	26.8	36.4	41.7	66.7
<b>Your ability to provide high quality of care</b>	89.1	100.0	95.0	89.4	88.4	87.7	82.9	95.5	66.7	100.0
<b>Your training opportunities to upgrade your skills and knowledge</b>	58.7	67.8	65.0	44.7	37.2	66.2	51.2	68.2	41.7	91.7
<b>Your salary</b>	39.1	32.2	26.7	17.0	7.0	18.5	12.2	13.6	25.0	83.3
<b>Employment benefits (travel allowance, bonus etc.)</b>	47.8	45.8	40.0	36.2	18.6	23.1	2.4	9.1	16.7	33.3
<b>Living accommodations for your family</b>	58.7	61.0	60.0	51.1	30.2	55.4	46.3	72.7	25.0	83.3
<b>Education for your children</b>	63.0	50.8	65.0	36.2	41.9	60.0	39.0	81.8	16.7	50.0
<b>Your opportunities for promotion</b>	52.2	57.6	56.7	46.8	37.2	60.0	58.5	81.8	41.7	100.0
<b>Overall, your satisfaction with your job</b>	97.8	100.0	96.7	91.5	88.4	92.3	87.8	95.5	83.3	100.0

A mean score of 100 indicates the highest level of satisfaction

**Annex 11: Detailed breakdown of items assessed in the Maternal and Newborn QOC component of the NIHFA to analyse facility readiness to manage MNH services**

<b>Essential supplies for delivery</b>	<b>Per cent of Facilities with item</b>	<b>Number of facilities with item</b>	<b>Number of Facilities</b>
Sterile scissors or blade	75.0%	210	280
Disposable cord ties or clamps	85.4%	239	280
Suction apparatus for use with catheter	58.8%	164	279
Functioning incubator or other functioning heat for premature infant	18.6%	52	280
Towel or blanket to wrap baby	43.2%	120	278
Mean per cent score for essential supplies*	56.2%	-	
<b>Medicines and supplies for AMTSL</b>	<b>Per cent of Facilities with item</b>	<b>Number of facilities with item</b>	<b>Number of Facilities</b>
Syringes and needles	93.50%	261	279
Injectable oxytocic (oxytocin or ergometrine)	79.90%	223	279
Mean per cent score for AMTSL supplies	86.70%		
<b>Medicines for HIV/PMTCT</b>	<b>Per cent of Facilities with item</b>	<b>Number of facilities with item</b>	<b>Number of Facilities</b>
Zidovudine	95.00%	265	279
Lamivudine	93.90%	263	280
Nevirapine	96.80%	270	279
Mean per cent score for HIV/PMTCT medicines	95.23%		279
<b>Essential newborn care items</b>	<b>Per cent of Facilities</b>	<b>Number of Facilities with item</b>	<b>Total number of Facilities (N)</b>
Disposable cord ties or clamps	85.4%	239	280
Towel or blanket to wrap baby	43.2%	120	278
Sterile scissors or blade	75.0%	210	280
Mean per cent score essential newborn care	68.0%		280

## **Annex 12: References used in the Child Health QOC component for the assessment using the IMCI approach**

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