REPORT ON THE HEAD COUNT EXERCISE FOR CHILDREN BELOW THE AGE OF ONE YEAR IN CHIMANIMANI DISTRICT

Village Health Workers submitting head count results in Chimanimani District
Photo credit: G. Nyasulu, MCHIP/Zimbabwe

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MCHIP Maternal and Child Health Integrated Program

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ACRONYMS

CRDC	Chimanimani Rural District Council
DA	District Administrator
DEHO	District Environmental Health Officer
DHE	District Health Executive
DNO	District Nursing Officer
EPI	Expanded Programme on Immunization
HF	Health Facility
HIO	Health Information Officer
HIS	Health Information System
MCHIP	Maternal and Child Health Integrated Program
MOHCW	Ministry of Health and Child Welfare
PHE	Provincial Health Executive
PNO	Provincial Nursing Officer
RHC	Rural Health Center
SPSS	Statistical Package for Social Science
VHW	Village Health Worker
WHO	World Health Organisation
WHT	Ward Health Team
WASH	Water, Sanitation and Hygiene
ZIMSTAT	Zimbabwe National Statistics Agency

DEFINITION OF TERMS

Catchment area	A defined geographical area served by a health facility (HF).
Catchment area population	The population living within a catchment area and served by a particular health facility. The catchment area population does not necessarily live within the administrative area (i.e., district) in which the HF is located.
Coverage	The proportion of children reached for vaccination out of the total population of eligible children, over a specific period of time.
Distance from village to health facility	The distance between the furthest point in a village to the nearest health facility.
Fully vaccinated	A child who has completed all of the necessary vaccinations due, according to his/her age and the EPI schedule (e.g., a child at 8 weeks of age vaccinated with BCG, Penta1, OPV1, and PCV1 is fully vaccinated or "on track").[1]
Hard to reach area	A location that is not easily accessible by health workers due to geographic factors such as distance or difficult terrain or other factors.
Hard to reach populations	Populations which are difficult for health workers to access/supply with services due to particular community characteristics that make provision of services challenging (e.g., migrant populations, certain religious groups, etc.).
Head count	An exercise where all children below a certain age (e.g., under 1 year, under five years) are counted in a given area, in order to determine the actual number of individuals living there (and who require health services).
Never vaccinated/ unvaccinated child	A child who has not received ANY of the childhood vaccinations.
No parent	A child who has no living parents.
One parent	A child who has one living parent (either father or mother).
Outreach point	A station/site that is locally identified within the community where parents/caregivers of children living further than 8-10 kilometres from a health facility can go to get their children vaccinated.
Partially vaccinated	A child who has missed one or more doses of the vaccines due for his/her age or a child whose next doses are overdue.
Under 1 year	A child who has completed 0-11 months of age.
Underserved populations	Communities with limited access to immunization services for whatever reason.
Vaccination status	A term used to describe whether a child has been fully vaccinated, partially vaccinated, or never vaccinated.
Village	A local authority administrative area under one village head, consisting of 100 households.
Ward	A local authority administrative area under one councillor, usually consisting of six villages
Ward health team	An intersectoral committee at ward level which provides a link between the community and the health facility.

[1] Some of the terms that are used in this report are only applicable to this head count assessment and may not have the same meaning in other contexts. For example, the term "fully vaccinated child" normally refers to a child who has completed all of the primary traditional vaccinations according to the EPI schedule and is therefore protected from specific vaccine-preventable diseases. In this study however, the term "fully vaccinated" is used as meaning a child who had received all relevant immunisations due to him/her at the time of the head count, as dictated by the EPI schedule and the child's age. In other words, the term "fully vaccinated" as used in this report does not necessarily refer to a child who has completed the full course of vaccinations.

INTRODUCTION

Achieving high childhood immunization rates is widely recognised as being critical to a country's achievement of its Millennium Development Goals (MDGs). The WHO and UNICEF-developed Global Immunization Vision and Strategy (GIVS) which was launched in 2006 highlights the contribution of immunization to the achievement of MDG 4, saying that "a two-thirds or greater reduction in global childhood deaths and illness is possible if there is widespread immunization coverage of vaccine preventable diseases"[2]. In line with the GIVS, Zimbabwe's Expanded Programme on Immunization (ZEPI) seeks to reach every child below the age of one year with vaccination and to ensure that every child completes the primary course of vaccinations before his/her first birthday.

Since its inception in 1982, the ZEPI has attained high national immunization coverage and contributed toward significant gains in the reduction of childhood morbidity and mortality due to vaccine-preventable diseases. Even so, in recent years, national immunization coverage rates have been on the decline, with national coverage for "all basic vaccines"[3] lower for the period covered by the 2010/11 Zimbabwe Demographic and Health Survey (ZDHS) (64.5% of children age 12-23 months) than for periods covered by the 1994 and 1999 ZDHSs (80.1% and 74.8% of children age 12-23 months respectively)[4]. In addition to these declines nationally, variations in coverage rates exist at sub-national levels, with some provinces experiencing poorer coverage rates than others. For example, Manicaland province, Zimbabwe's most populated province, has been one of the poorest performing provinces for many years. According to the 2010/11 ZDHS, coverage of "all basic vaccinations" in Manicaland was 46.5%, compared to 64.5% nationally, with coverage of specific antigens as follows: 52.9% Pentavalent 3 coverage in Manicaland versus 72.9% nationally; 71.1% BCG coverage in Manicaland versus 86.9% nationally; and 65% measles coverage in Manicaland versus 79.1% nationally. Similarly, a 30-cluster coverage survey conducted by the Ministry of Health and Child Welfare (MOHCW) and partners in July 2010 found that only 47% of children in Manicaland had completed the primary course of immunizations at the time of the survey.

In contrast to the relatively low coverage figures coming out of periodic, population-based surveys like those mentioned above, coverage rates based on routine EPI data (which is collected through the national health information system and is calculated by dividing the number of children vaccinated by a population-based denominator) has consistently indicated immunization coverage rates much higher than those from periodic surveys. In Zimbabwe (as in other countries), the inconsistency between population survey-based coverage rates and HIS-based coverage rates has raised concerns about the quality of national routine EPI coverage data, and has led stakeholders to question whether routine EPI data is accurately depicting immunization-related realities on the ground.

In Zimbabwe, questions about data quality and accuracy of routine, HIS-based EPI coverage data have extended beyond national level to provincial and district levels as well. As of early 2010, one district in Manicaland

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[2] WHO, UNICEF, 2005. Global Immunization Vision and Strategy (GIVS) 2006-2015. WHO/IVB/05.05. Accessible at: http://whqlibdoc.who.int/ hq/2005/WHO- IVD-05.05.pdf.

[3] "All basic vaccinations" includes BCG, measles, and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth).

[4] Zimbabwe National Statistics Agency (ZIMSTAT) and ICF International. 2012.Zimbabwe Demographic and Health Survey 2010-11. Calverton, Maryland: ZIMSTAT and ICF International Inc.

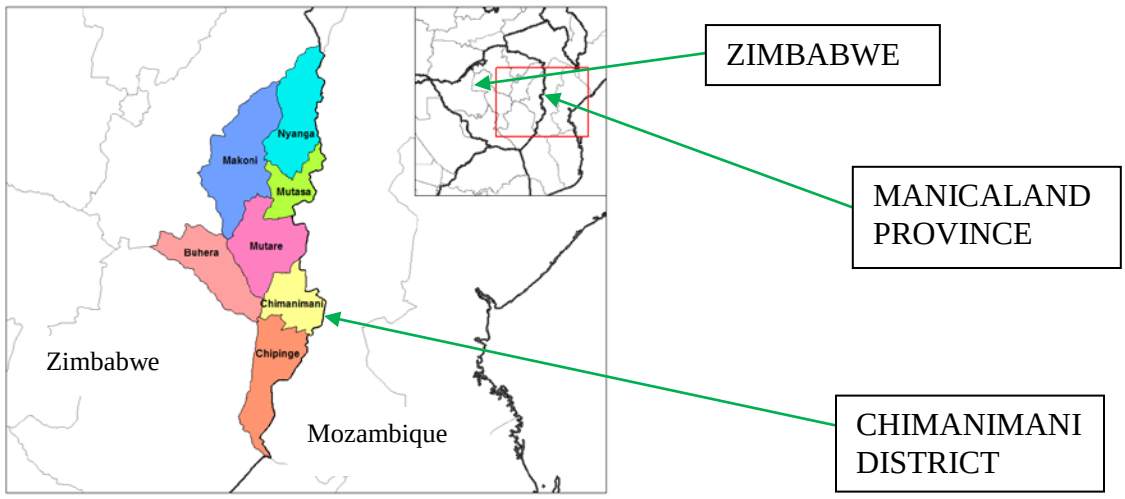
province in particular – Chimanimani district – had developed an interest in exploring the issue further, based on discrepancies it was seeing between high historical EPI coverage statistics and actual health outcomes at community level. Immunization coverage for Chimanimani district in previous years had been very high (above 100% in some years; described further below) while at the same time outbreaks of vaccine-preventable diseases had also occurred during this same period. Since outbreaks can only occur within pockets of unvaccinated children, the occurrence of outbreaks in Chimanimani district implied that coverage rates were not likely to actually be as high as HIS-based EPI coverage rates had indicated.

Given this, in early 2010, stakeholders from the Manicaland Provincial Health Executive (PHE), the Chimanimani District Health Executive (DHE), and MCHIP/Zimbabwe developed a plan to investigate the issue further. The team designed an activity focused on getting more accurate data on numbers of vaccine-eligible children living within the district (i.e., more accurate population or denominator data) as well as more accurate data on the numbers of children actually vaccinated within the district for a given time period (i.e., more accurate numerator data). It was envisioned that more accurate numerator and denominator data would enable the team to calculate a more "reality-based" EPI coverage rate for the district that could be compared to, and interpreted against, HIS-based coverage rates for the same period. Collectively, the activity was referred to as a "head count" activity.

BACKGROUND TO THE HEAD COUNT EXERCISE

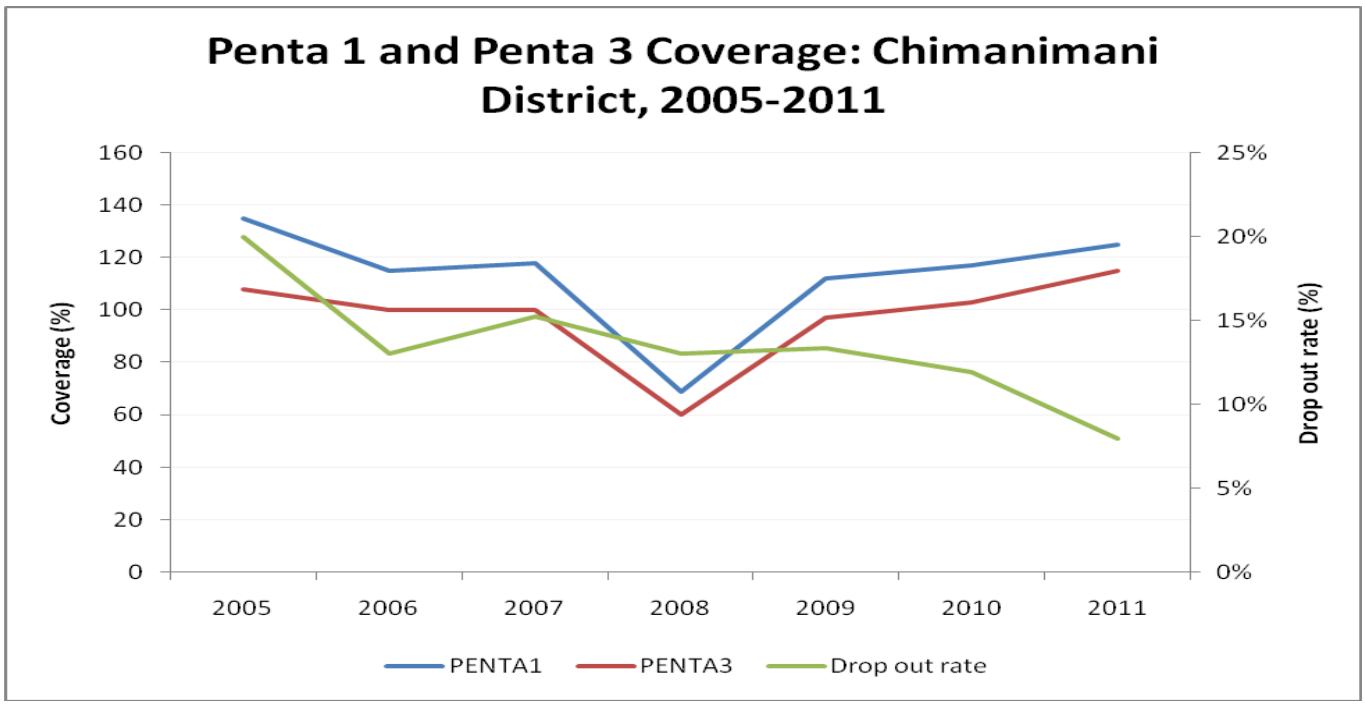
Chimanimani district is one of the seven districts of Manicaland province. The district covers an area of 3,353 square kilometres and shares borders with Mutare district to the north, Chipinge district to the south, Buhera district to the west, and Mozambique to the east (see Figure 1). According to the Zimbabwe National Statistics Agency (ZIMSTAT), Chimanimani's total projected population for 2012 was 136,055 people and total projected population of children under the age of five years was 25,306 (NB: both population figures are based on mathematical extrapolations of 2002 Census data). Chimanimani district is divided into 22 wards and has a total of 27 public health facilities (23 of which provide immunization services) and 55 immunization outreach points. The district's health facilities provide integrated maternal, newborn, and child health (MNCH) services within the context of primary health care.

Figure 1: Map of Manicaland province showing Chimanimani district and borders



As described in the introduction section above, Chimanimani district has reported high immunization coverage rates over the past several years. For example, district-wide coverage of Pentavalent 1 and 3 was high during the period 2005-2011, with coverage rates in most years at or exceeding 100% (Figure 2)[5]. However, despite high coverage rates for Penta 3 (which is often viewed as a reflection of overall immunization coverage) in Chimanimani and areas like it, outbreaks of vaccine preventable diseases still occurred during this period. Most notably, a major measles outbreak occurred in late 2009/2010 which killed more than 40 children nationwide, with an estimated 95% of those fatalities occurring in Manicaland province as of January 2010[6].

Figure 2: Annual Pentavalent 1 and 3 coverage rates and drop out rates for Chimanimani district, from 2005 to 2011 ***(Source: MOHCW Health Information System, Chimanimani district)***



One hypothesis to explain the presence of high HIS-based coverage rates on the one hand and outbreaks of vaccine preventable diseases on the other has been that the inputs for calculating coverage rates are inaccurate. In other words, that HIS-based numerator data and/or census-based denominator data are unreliable and therefore result in inaccurate and difficult-to-interpret coverage statistics.

Within the HIS/ZEPI system, numerator data is first recorded at health facility level in ZEPI registers and tally sheets which document numbers of children vaccinated. Each month, health facilities report data on vaccinated children to the district level; this data is then aggregated at district level and submitted to provincial level, which then repeats the process in submitting aggregated provincial data to the national level. At each level for any given time period, coverage rates are then calculated by dividing numerator data by census-based population

[5] The sharp decline in Penta 1 and 3 coverage rates in 2008 is generally thought to be due to the breakdown of health services that resulted from the then non-conducive political environment. The challenging political environment at the time contributed to economic declines as well as broad health worker and caregiver demotivation.

[6] Tropical Medical Bureau, 19 Jan 2010. "Update on Measles outbreak in Zimbabwe", available at: http://www.tmb.ie/destinations/news.asp?title=Update-on-Measles-outbreak-in-Zimbabwe&id=176186.

data for the relevant target population (in this case, the number of children 0-11 months old) and then multiplying by 100. The resulting figure is referred to as the "administrative" coverage rate.

Though this method of calculating coverage rates is sound conceptually, in recent years stakeholders have begun to question the accuracy of census-based population figures. Yearly population figures for the 2002-2012 period have been based on mathematical projections of 2002 census data and thus may not accurately reflect population movements that have taken place since 2002[7]. In addition, census-based population figures only include people living within prescribed geographic/administrative boundaries, and exclude people living in neighbouring areas who may still access health services within the geographic area of interest[8]. The affect these and other issues have on the accuracy of administrative coverage rates is not well understood, though concern exists that, over the years, use of inaccurate denominator data and/or mismatches between populations accounted for in numerator versus denominator data have resulted in inaccurate coverage statistics. In turn, inaccurate coverage statistics may have led to erroneous conclusions about high levels of herd immunity in districts like Chimanimani, when in fact some children may have remained unprotected in the district.

Given this background, in 2010, the Manicaland PHE in collaboration with the Chimanimani DHE requested MCHIP/Zimbabwe to support a district-wide head count exercise of all children below the age of five years living in Chimanimani district. It was envisaged that the findings of the exercise would reflect the "actual" population of children living within Chimanimani district, which could in turn be used to calculate more accurate EPI coverage rates. In addition to counting children, the exercise would also seek to determine children's immunization status.

BROAD OBJECTIVE OF THE STUDY

The main objective of the exercise was to obtain more accurate numerator and denominator data that could be used to calculate more realistic immunization coverage statistics for Chimanimani district. In this case, numerator data was comprised of the number of children 0-11 months within Chimanimani district who had received immunization services by the time of the assessment, and denominator data was comprised of the actual number of children below the age of one year living in Chimanimani district at the time of the assessment. More realistic EPI coverage statistics will enable district and other stakeholders to plan EPI activities more effectively as well as allocate EPI resources more accurately, thereby leading to improved quality of services.

SPECIFIC OBJECTIVES OF THE STUDY

Specific objectives of the head count exercise were to:

- Count and verify the actual numbers of children 0-11 months old in Chimanimani district at the time of the assessment (NB: at the time of data collection, data was actually collected on children both 0-11 months and 12-59 months old, as explained further in the methods section);

[7] A national census was conducted in August 2012, but as of early 2013, only a preliminary report of 2012 census data had been released.

[8] For instance, Chimanimani district has five health facilities located along the border with Mozambique (Cashel, Chikukwa, Mutsvangwa, Muchadziya, and Tilbury) and these provide immunization services to both local and Mozambican communities. In addition, five other Chimanimani health facilities border Chipinge, Buhera, and Mutare districts and serve residents of those communities.

- Compare results from the head count with official ZIMSTAT population statistics as well as health facility-based "catchment area population" figures[9], and identify discrepancies between statistics if any;
- Identify the immunization status (fully, partially, or not immunized) of all children 0-11 months in Chimanimani district at the time of the assessment;
- Calculate the EPI coverage rate for Chimanimani district (using Penta 3 coverage as a proxy indicator) using the information identified above;
- Identify the numbers of children 0-11 months in Chimanimani district who were unvaccinated at the time of the assessment and where they were located within the district;
- Assess factors that may influence people's uptake of immunization services, including children's parental status, religious affiliation, and distance between children's residences and the nearest health facility;
- Finally, to document lessons learned in conducting a head count exercise that can be applied to other districts in the country interested in replicating such an activity.

METHODOLOGY

The head count exercise followed a cross-sectional assessment design and was carried out 10-20 April 2012 in Chimanimani district. The design and implementation of the assessment was led by the Chimanimani DHE and implementation was carried out by a team which included the acting Manicaland Provincial EPI Officer, a Chimanimani Rural District Council (CRDC) official, Chimanimani Village Health Workers (VHWs), MCHIP/Zimbabwe staff, and others. Key steps in the planning process included:

- Development of data collection tools and guidelines for field work;
- Formation and orientation of field teams;
- Conducting of sensitisation meetings with target communities as well as among stakeholders from other government ministries and departments; and
- Mapping of Chimanimani villages and Chimanimani-based Village Health Workers[10].

DEVELOPMENT OF DATA COLLECTION TOOLS AND GUIDELINES FOR FIELD WORK

Two data collection tools were developed by the head count team for this activity. The first tool (Annex 1 was similar in format to an under-5 register and contained the following questions:

a) Name of ward, village, village head and VHW;
b) Name of EPI outreach point and distance from the outreach point to the furthest village or household in its catchment area;
c) Name of child, child's age in months (disagreggated by 0-11 months, 12-23 months, and 23-59 months)[11], child's religion, and child's parental status (both parents alive, one parent alive, no live parents);

[9] HF catchment area data is calculated by each HF and is based on each HF's EPI register data (i.e., historical service statistics). This data can reflect populations living both within and outside of a given geographic area, as people are free to access health services even if they live outside of a given HF's geographic/administrative area.

[10] Village Health Workers serve as a major link between communities and health facilities and provide substantial support in the delivery of community-based MNCH and EPI services.

[11] For the purposes of this EPI-related head count activity, the specific target group of interest was children 0-11 months of age. However, since EPI delivery is integrated with other child survival interventions such as vitamin A supplementation, infant and young child feeding programs, and distribution of insecticide-treated mosquito nets, district stakeholders

d) Child's vaccination status at the time of the assessment (fully vaccinated, partially vaccinated, or never vaccinated).

The second tool (Annex 2) was a summary sheet for use by the team in aggregating (at village level) all data collected in individual data collection sheets. Both tools were written in English. Unfortunately, neither data collection tool was able to be pretested prior to actual use in the field, due to a lack of adequate time available[12].

In addition to data collection tools, the team also developed a guideline describing how enumerators were to work with community members in data collection. The purpose of the guideline was to ensure systematic, standardized data collection techniques across enumerator teams. The guideline highlighted indicators to be collected by VHWs in the community, information to be collected by each assessment team, and how enumerators/VHWs should verify data collected using registers kept by Village Heads[13].

FORMATION OF FIELD TEAMS

Three teams of four enumerators each were formed to conduct this activity, comprised of individuals including: the Chimanimani District Nursing Officer, the Chimanimani Community Health Nurse, the Chimanimani District Health Information Officer, the Manicaland Provincial Nutritionist, the Manicaland Provincial EPI Officer, six MCHIP/Zimbabwe staff, and others. Each of the teams appointed a team chairperson, a secretary, and a community liaison (e.g., someone like the District Environmental Health Officer, Health Promotion Officer, or District Community Officer who is well known within the local communities and who could introduce his/her team members when in the field). Two enumerator teams were allocated seven wards each in which to collect data and one team was assigned eight wards. See Annex 3 for a list of enumerators and ward assignments.

MAPPING OF VILLAGES AND VILLAGE HEALTH WORKERS

A map of Chimanimani district was given to every team and names of the wards were marked on the map to ensure accurate identification and demarcation. Teams agreed to use names of villages that appeared at the District Administrator's office, though they were also encouraged to work with staff from Chimanimani health facilities during the village identification stage so that all villages, both official and unofficial, could be included. Teams were also provided with names of health facilities in each ward, names of the nurses in charge at each facility, and the nurses' cell phone numbers to facilitate communication and coordination in the field.

SENSITISATION MEETINGS FOR COMMUNITY LEADERS

The team held meetings with the District Authority Chief Executive Officer, the Zimbabwe Republic Police, and the President`s Office to sensitize them on the objectives of, and plans to conduct, the head count exercise. Local health facility staff helped to coordinate several community sensitization meetings which were held with relevant Village Heads, Village Secretaries, VHWs, and Councillors, depending on their availability and

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decided to extend the head count to all children below the age of five years in order to facilitate better planning for all child health interventions.

[12] The head count activity coincided with celebrations of a national event (Zimbabwe Independence Day, 18th April) and this negatively affected/constrained the timing of the team's planning, coordination, and implementation of this activity.

[13] Every Village Head maintains a register of all households in his village as part of his responsibilities as required by local government. Children are not disaggregated by age within this register.

convenience. At farms and estates, farm and estate managers were also included in sensitization meetings. All meetings were convened at places selected and agreed upon by community leaders, such as in schools, clinics, and/or other designated places. Meeting participants were oriented on the objectives of the head count, how data would be collected, and each participants' role in the exercise. In some wards, enumerator teams took advantage of Water, Sanitation and Hygiene (WASH) meetings that were being held on the days of their visits which had been organised by the International Rescue Committee.

DATA COLLECTION

The plan for data collection was to use a combination of enumerators and VHWs to collect data on all children under the age of five throughout the district, using one of several methods:

1. by meeting with Village Heads/Village Secretaries, referencing population data kept in their village registries, and cross-referencing these registers with VHW registers which contain EPI information – this was the most common method used; this process was sometimes assisted by facility health workers where available;
2. by meeting with farm/estate managers and farm health workers and referencing population data kept in farm registers – this method was used in all cases where the target area was a farm or estate; and/or
3. by visiting actual households as needed in order to count children and collect immunization information from children's health cards – this was the least common method employed but was generally used in areas which do not have active VHWs.

Upon reaching each area, enumerator teams generally met with a combination of village heads, VHWs, and sometimes facility health workers and farm health workers, as available. At these meetings, enumerators shared copies of the data collection tool with VHWs (or farm health workers) and gave them a brief orientation on completing the form. Data was collected by VHWs from their respective villages, with the help of their local leadership, while farm health workers were used to collect data from their respective estates and farms. In villages where there were no community health workers, counting was done by a combination of enumerators, caregivers, and/or Village Secretaries. In villages where Village Heads and Councillors had updated population data by age and village, this information was entered into the data collection tools. In villages where there was no updated population data in the Village Heads'/Councillors' registers, VHWs collected data by going house to house. Complete data collection forms were submitted to Team Leaders each day and used to fill out the data summary sheet. Data summary sheets were signed by each Team Leader to ensure completeness and validity of the information compiled.

DATA HARMONIZATION

Village Heads ensured that data collected by VHWs were harmonized with data kept in their registers to ensure that no households were omitted. Village Heads and Village Secretaries used Social Welfare registers of all children less than 18 years which had been updated in 2011 (maintenance of these registers is mandatory and registers should be updated every year). Human resources personnel at estates or farms verified accuracy of data collected using their estate/farm registers.

DATA ANALYSIS

Once all data was collected, DHE members entered it into MS Excel, with technical guidance from MCHIP/Zimbabwe staff. SPSS and Excel were used to analyze data at a three day workshop supported by MCHIP.

FINDINGS AND DISCUSSION

The number of villages identified in Chimanimani district during the head count exceeded the number provided by the Chimanimani Rural District Council (CRDC). Head count information was captured from 202 villages, whereas the District Administrator's (DA) office had only 123 villages recorded. The 79 villages not recorded by the DA's office were therefore not yet officially recognised, though they were functioning "on the ground".

Table 1 shows the total number of children counted in the head count exercise, broken down by health facility catchment area and age (0-11 months and 12-59 months of age). Enumerators recorded a total of 3,243 children 0-11 months old and 12,452 children 12-59 months of age in Chimanimani district. The number of children 0-11 months counted is comparable to the number of live births (3,340) recorded at both HF and community levels (home births) in 2011.

Table 1: Number of children counted in the head count, by age and health facility

Name of Health Facility	Number of children counted in head count, by age		Total # of children counted
	0-11 months	12-59 months	
Arda Rusitu	26	100	126
Biriwiri	311	1,238	1,549
Bumba	151	552	703
Chakohwa	241	934	1,175
Changazi	56	234	290
Charter	79	240	319
Chayamiti	37	195	232
Chikukwa	118	457	575
Chikwakwa	75	323	398
Chimanimani	124	544	668
Gudyanga	100	426	526
Gwendingwe	18	83	101
Muchadziya	230	841	1,071
Mutambara	168	688	856
Mutsvangwa	220	749	969
Ngorima	250	881	1,131
Nyabamba	26	120	146
Nyahode	406	1,665	2,071
Nyanyadzi	339	1,230	1,569
Roscommon	34	114	148
Rusitu	127	448	575
Shinja	51	214	265
Tilbury	56	176	232
Total	**3,243**	**12,452**	**15,695**

Table 2 compares the EPI "target population" of children 0-11 months by HF catchment area, according to three different data sources. Column (a) shows estimated number of children 0-11 months in each HF catchment area according to national ZIMSTAT projections for 2012[14]. Column (b) shows numbers of children 0-11 months by HF, according to calculations made by each HF based on historical EPI usage data[15]. Column (c) shows the number of children 0-11 months by HF, according to the head count exercise.

The ZIMSTAT projected figure for the entire district was 4,008 children, compared to 4,518 children according to HF catchment area figures, and 3,243 children according to the head count. These figures are consistent with the general assumption that ZIMSTAT figures are likely to be higher than actual population figures on the ground. That the HF catchment area figures are higher than the head count figure confirms that HFs in Chimanimani district are providing EPI services to children who are coming from outside of the Chimanimani administrative boundaries.

Table 2: Comparison of EPI "target population" figures (children 0-11 months) for Chimanimani HFs, according to different sources (ZIMSTAT projected figures, HF catchment area figures, and head count figures)

Health Facility (HF)	Children 0-11 months, according to ZIMSTAT projected figures (a)	Children 0-11 months, according to HF catchment area figures (b)	Children 0-11 months, according to head count (c)
Arda Rusitu	40	40	26
Biriwiri	259	259	311
Bumba	164	164	151
Chakohwa	267	341	241
Changazi	134	216	56
Charter	79	79	79
Chayamiti	90	90	37
Chikukwa	105	155	118
Chikwakwa	115	115	75
Chimanimani	270	270	124
Gudyanga	124	129	100
Gwendingwe	46	46	18
Muchadziya	239	321	230
Mutambara	426	486	168
Mutsvangwa	281	340	220
Ngorima	292	340	250
Nyabamba	29	29	26
Nyahode	298	298	406
Nyanyadzi	400	450	339
Roscommon	58	58	34
Rusitu	146	146	127

[14] ZIMSTAT figures are calculated each year based on mathematical projections of 2002 national census data and reflect populations living within specific geographic boundaries.

[15] HF catchment area data is calculated by each HF and is based on each HF's EPI register data. This data can reflect populations living both within and outside of a given geographic area, as people are free to access health services even if they live outside of a given HF's geographic/administrative area.

Shinja	49	49	51
Tilbury	97	97	56
Total	**4,008**	**4,518**	**3,243**

Table 3 shows head count data for the number of children 0-11 months living in Chimanimani district, broken down according to vaccination status as well as by HF. At the time of the head count, 2,637 children were fully vaccinated or were on track according to age, giving a fully vaccinated coverage rate of 82.8% (excluding cases of missing data). Three hundred ninety-three children (12.3%) were only partially immunized, meaning that they had not received all of the vaccinations that were due according to their age at the time of the head count. This translates to an immunization dropout rate of 12%, which is higher than the expected level of 10%. Nearly five percent of children (154) had never been vaccinated at the time of the head count. For 59 children, vaccination status could not be determined during the head count, either because these children's records were incomplete in VHW registers, the children were documented in Village Head/Secretary registers (which do not contain EPI information) but not within VHW registers, and/or the children's child health cards could not be located and referenced.

Table 3: Vaccination status of children 0-11 months in Chimanimani district according to the head count, by health facility and % EPI coverage in Chimanimani district

Health facility	Vaccination status of children 0-11 months in Chimanimani district, according to the head count				Total # children 0-11 months living in Chimanimani who are partially or fully immunized (c+d)	Total # children 0-11 months living in district, according to head count (e)	% EPI coverage in Chimanimani district, based on head count data (c+d/e)
	Unknown (a)	Never immunized (b)	Partially immunized (c)	Fully immunized according to age and schedule (d)			
Arda Rusitu	0	0	0	26	26	26	100
Biriwiri	17	15	15	264	279	311	90
Bumba	4	9	1	137	138	151	91
Chakohwa	4	19	41	177	218	241	90
Changazi	1	2	1	52	53	56	95
Charter	0	1	4	74	78	79	99
Chayamiti	0	0	0	37	37	37	100
Chikukwa	0	2	1	115	116	118	98
Chikwakwa	0	3	2	70	72	75	96
Chimanimani	0	6	23	95	118	124	95
Gudyanga	0	0	71	29	100	100	100
Gwendingwe	0	0	0	18	18	18	100
Muchadziya	2	6	21	201	222	230	97
Mutambara	2	9	15	142	157	168	93
Mutsvangwa	2	14	37	167	204	220	93
Ngorima	3	12	43	192	235	250	94
Nyabamba	0	1	0	25	25	26	96
Nyahode	6	16	61	323	384	406	95
Nyanyadzi	3	28	46	262	308	339	91

Roscommon	15	0	0	19	19	34	56
Rusitu	0	7	5	115	120	127	94
Shinja	0	4	4	43	47	51	92
Tilbury	0	0	2	54	56	56	100
Totals	**59**	**154**	**393**	**2,637**	**3,030**	**3,243**	**93%**

Adding together the number of children 0-11 months living in Chimanimani who were partially or fully immunized at the time of the head count results in a total of 3,030 children. Comparing this figure to the total number of children 0-11 months living in the district according to the head count (3,243; column e), it is possible to calculate the EPI coverage for children 0-11 months in Chimanimani district (column c+d/e). Based on this data, EPI coverage for children 0-11 months living in the district appears to be 93%.

Generally speaking, nearly all HFs were performing admirably in terms of EPI coverage. Of the five HFs with 100% coverage, four are located in commercial farming areas. High levels of coverage there reflect the fact that these communities are situated in well-defined geographic areas and each household is registered with farm management.

Overall, 7% of Chimanimani children 0-11 months had not been reached by vaccination services (or vaccination status was unknown) at the time of the head count. In the case of Roscommon clinic, low coverage can be explained by the nature of the Roscommon catchment area. Roscommon is a timber farming area which is mostly occupied by mobile, seasonal employees (mostly men, though the men's wives and children occasionally visit). There are no trained HWs at the Roscommon clinic, which mostly provides occupational health services with minimal provision of MCH services. Roscommon clinic does not currently provide routine immunization services.

Table 4 shows the number of fully/partially immunized children 0-11 months, who live *outside* of Chimanimani district but received EPI services in Chimanimani HFs (column c-b). Based on this data, it appears that an estimated 1,594 children who were served by Chimanimani HFs in the previous year (according to HF catchment area figures), were from areas outside of the district. Health workers from Muchadziya, Mutsvangwa, Ngorima and Chikukwa clinics report serving children from Mozambique; Chakohwa and Nyanyadzi facilities report serving children from Mutare district; Changazi reports serving children from Chipinge district; and Gudyanga reports serving children from Buhera district.

Table 4: Number of fully/partially immunized children 0-11 months, living *outside* of Chimanimani district but receiving services in Chimanimani HFs

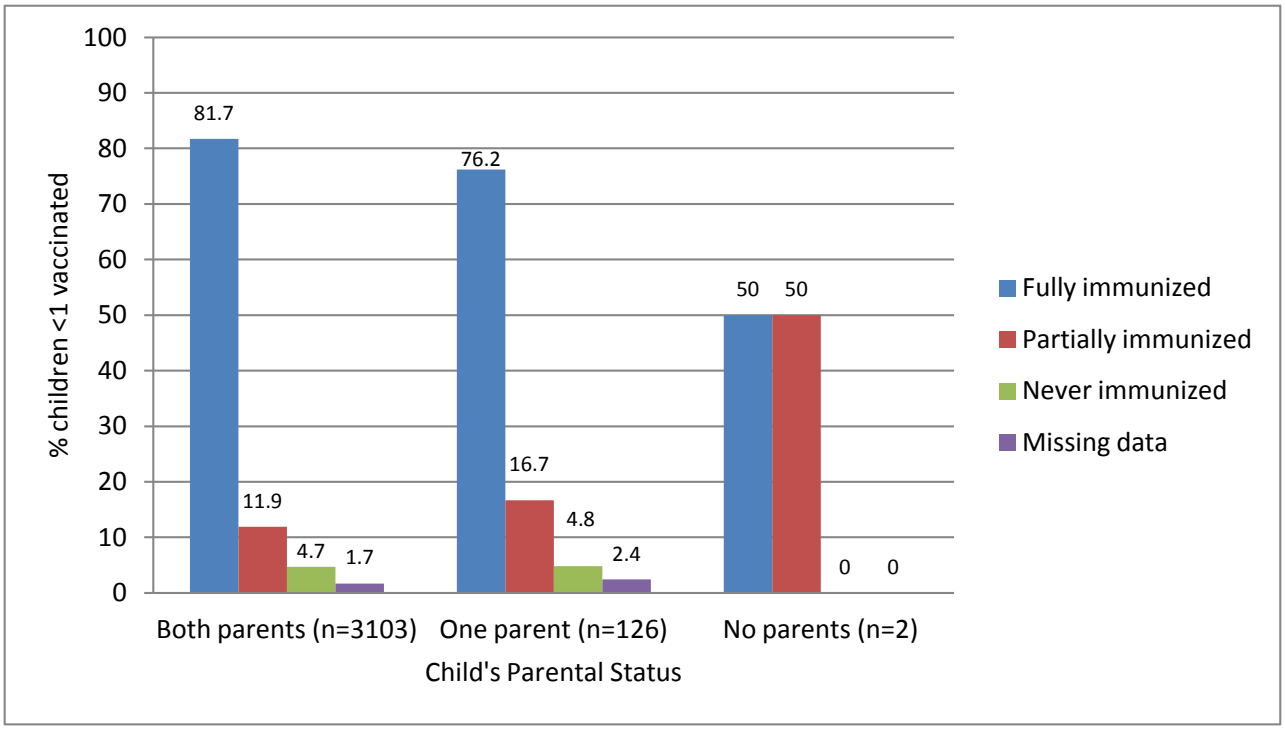
Health Facility (HF)	Children 0-11 months in Chimanimani, according to head count (a)	Total # children 0-11 months living in Chimanimani who are partially or fully immunized (b)	Fully/partially immunized children 0-11 months, according to HF catchment area figures (Chimanimani/other areas) (c)	Fully/partially immunized children 0-11 months, living outside of Chimanimani district (c-b)
Arda Rusitu	26	26	40	14
Biriwiri	311	279	259	--
Bumba	151	138	164	26
Chakohwa	241	218	341	123
Changazi	56	53	216	163
Charter	79	78	79	1

Chayamiti	37	37	90	53
Chikukwa	118	116	155	39
Chikwakwa	75	72	115	43
Chimanimani	124	118	270	152
Gudyanga	100	100	129	29
Gwendingwe	18	18	46	28
Muchadziya	230	222	321	99
Mutambara	168	157	486	329
Mutsvangwa	220	204	340	136
Ngorima	250	235	340	105
Nyabamba	26	25	29	4
Nyahode	406	384	298	--
Nyanyadzi	339	308	450	142
Roscommon	34	19	58	39
Rusitu	127	120	146	26
Shinja	51	47	49	2
Tilbury	56	56	97	41
Total	**3,243**	**3,030**	**4,518**	**1,594**

Non-Chimanimani-based patients receiving EPI services within Chimanimani helps explain why Chimanimani district persistently records high immunization coverage rates, and why EPI coverage rates are sometimes (legitimately) above 100% for the district. Unfortunately, this influx of people from outside Chimanimani tends to distort the "real picture" in terms immunization coverage *within* Chimanimani. In other words, high district coverage rates boosted by non-Chimanimani residents can obscure the existence of unvaccinated children within the district. If the number of unvaccinated children living within the district reaches high enough levels, outbreaks can occur in certain areas despite the appearance of high district EPI coverage rates.

In addition to understanding EPI coverage rates in Chimanimani, the head count exercise also sought to determine what factors might influence children's vaccination status in the district. Specific factors explored included children's parental status, children's religious affiliation, and distance between children's homes and the nearest health facility. Figure 3 shows vaccination status of children 0-11 months, broken down by parental status (i.e., having both, one, or no parents).

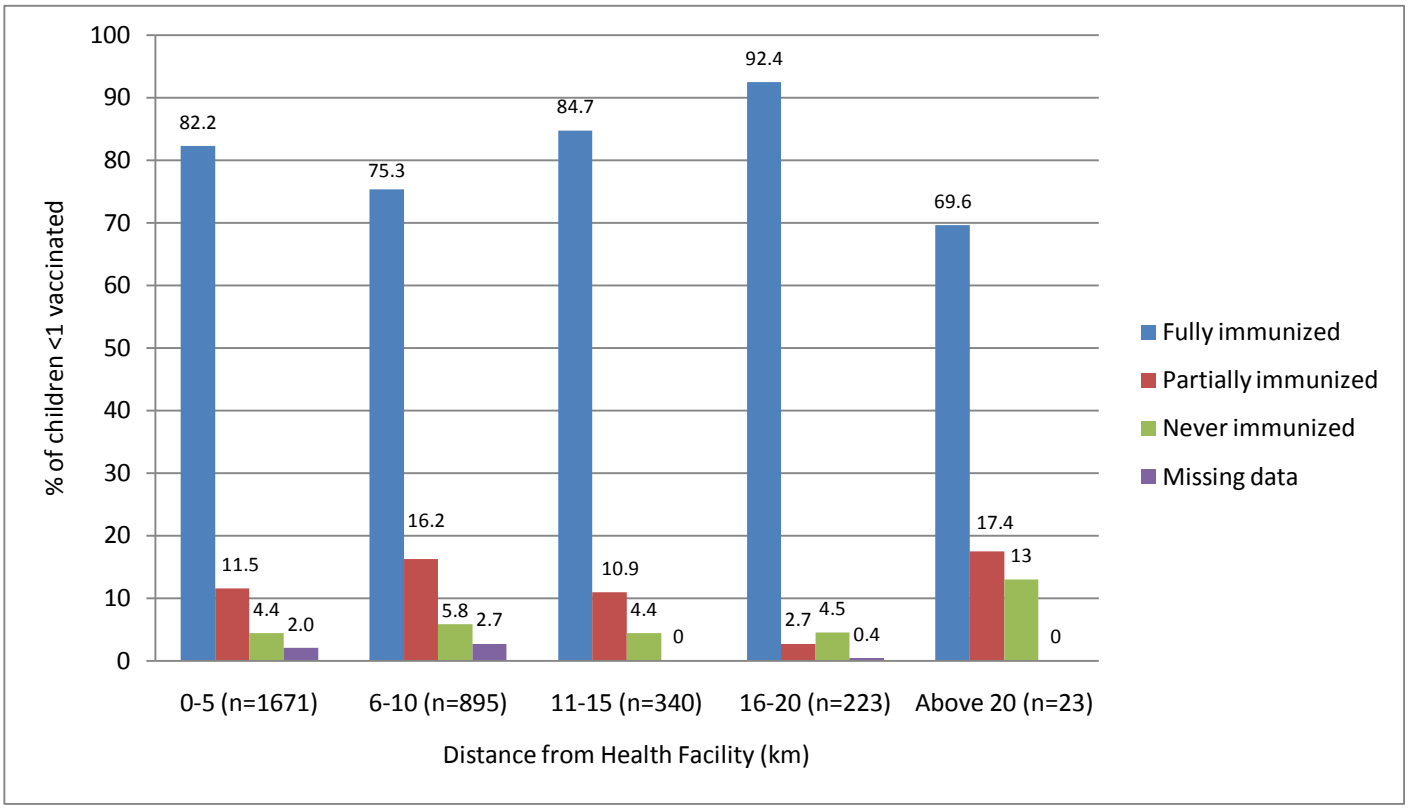
Figure 3: Percent of children <1 year fully/partially/never vaccinated, by parental status (N= 3,231; missing data on parental status in 12 cases)



Out of the 3,231 children identified in the head count whose parental status was known, 3,103 children (96%) had both parents alive, 126 children (4%) had one parent alive, and two children had no parents alive. Of those who have two living parents, 81.7% were fully immunized/on course with their immunizations, 11.9% were partially immunized, and 4.7% had never been immunized. Of those with one parent alive, 76.2% were fully immunized/on course with their immunizations, 16.7% were partially immunized, and 4.8% were never immunized. Of the two children with no live parents, one was on course with his/her immunizations and the other was partially immunized.

The population of children identified in this assessment with no living parents is too small to be able to draw any conclusions regarding immunization behaviours within that group. However among children identified having both versus one living parent, the relative proportions of children within these groups who are fully/partially/never immunized are relatively similar. Nearly 5% of children within both groups had never been immunized at the time of the head count.

Figure 4: Percent of children <1 year fully/partially/never vaccinated, by distance they live from the nearest health facility (N= 3,152; missing data on distance to the nearest HF in 91 cases)



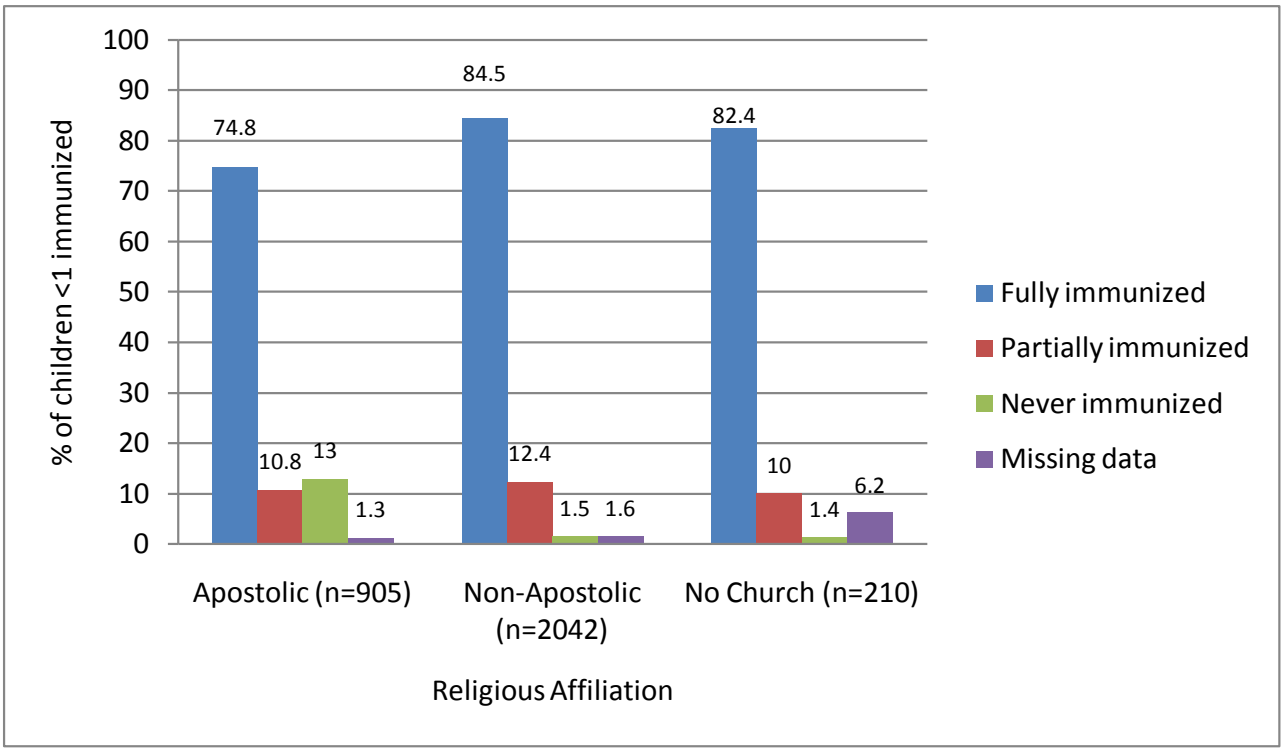
The head count also sought to assess whether distance between a child's home and the nearest health facility affects immunization coverage in Chimanimani district. Of the 3,152 children identified whose proximity from home to the nearest health facility was known, 1,671 children (52%) live within 5 km of the nearest HF, 895 children (27%) live between 6-10 km, 340 children (11%) live between 11-15 km, 223 children (7%) live between 16-20 km, and 23 children (0.7%) live more than 20 km away from their nearest HF (Figure 4).

The proportion of children who were never vaccinated at the time of the head count was similar for children living between 0-20 km from a health facility and ranged between 4.4% and 5.8%. However, for the few children (23) who live over 20 km away, 13.0% (3 children) had never been immunized at the time of the head count. The proportion of children who were fully vaccinated at the time of the head count ranged between 75% and 92% among children living between 0-20 km from a health facility. For children living over 20 km away, 70% were fully immunized at the time of the head count.

Relatively consistent levels of immunization coverage among children living 0-20 km from a HF are likely due to the availability of immunization outreach services in the district. For example, Mutambara Mission Hospital vaccinates children up to 20 km beyond its catchment area, providing services through 23 outreach sites. The Chimanimani District Office covers 32 outreach centers, with the furthest outreach point located 135 km from the District Office. In terms of communities located 20+ km from a health facility, although immunization outreach is supposed to be provided by the district team, challenges such as fuel shortages sometimes limit the availability of these services. Challenges servicing hard to reach communities may explain the higher proportion of "never immunized" children within this group.

Figure 5 shows a breakdown of immunization coverage rates within populations affiliated with different religious groups. Different religious groups have differing views on the acceptability of immunization, and the assessment sought to explore the importance of religious affiliation on immunization uptake within the district. For the purposes of this assessment, respondents were first classified into three broad categories: Apostolic, non-Apostolic, and those not affiliated with any religious denomination.

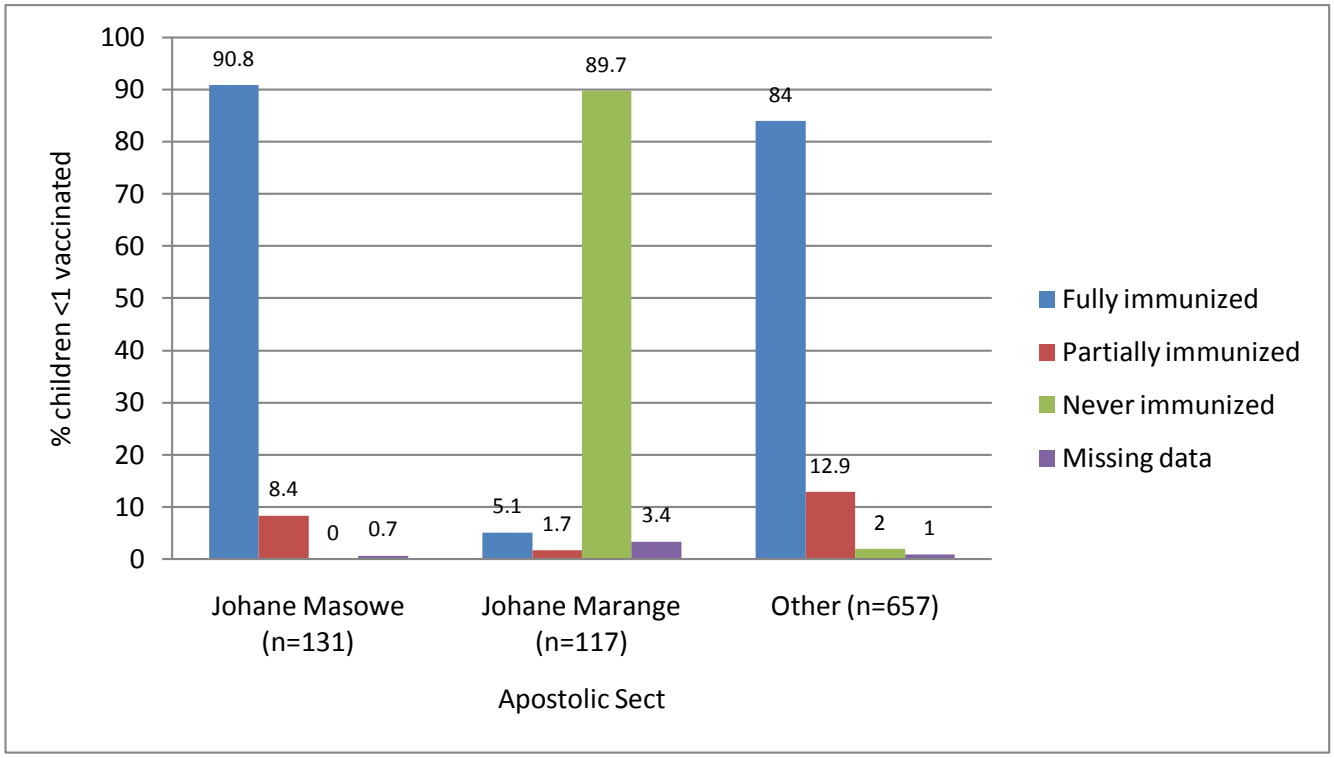
Figure 5: Percent of children <1 vaccinated, by religious affiliation (N=3,157; missing religious affiliation data in 86 cases)



Of the 3,157 individuals whose religious affiliation was known, 905 (29%) were affiliated with the Apostolic faith, 2,042 (65%) said they were affiliated with a non-Apostolic faith, and 210 (7%) classified themselves as having no religious affiliation. Among the three groups, the proportion of fully immunized children was lower in the Apostolic group than within the non-Apostolic and non-religious groups. In contrast, the proportion of never immunized children was substantially higher within the Apostolic faith group (13%, 118 children), compared to within the non-Apostolic (1.5%, 31 children) and non-religious groups (1.4%, 3 children). These findings are consistent with the general understanding that certain members of the Apostolic faith view immunization unfavourably.

The head count study further examined possible differences in immunization uptake *within* Apostolic faith groups. Figure 6 shows vaccination status of Apostolic children under 1 year, disaggregated according to three specific groups: members of the Johanne Masowe sect, members of the Johanne Marange sect, and members of "other Apostolic" sects.

Figure 6: Percent of Apostolic children <1 vaccinated, according to affiliation with specific Apostolic sects (N=905)



Of the 905 Apostolic faith respondents, 131 (14%) were affiliated with the Johane Masowe sect, 117 (13%) were affiliated with the Johane Marange sect, and 657 (73%) were affiliated with 54 different "other" Apostolic sects. As shown in Figure 6, immunization uptake among different Apostolic sect members is not uniform and not all Apostolic faith members are vaccine objectors. Over 90% of children under one year whose families are affiliated with the Johanne Masowe sect were fully immunized according to the head count, with an additional 8% of children under one partially immunized. Zero percent of children under one year who are members of the Johane Masowe sect were never immunized. Similarly, among children whose families are members of the 54 "other" Apostolic sects identified in the head count, 84% of children under one year were fully immunized, 13% were partially immunized, and only 2% were never immunized.

In stark contrast, nearly 90% of children under one year whose families are members of the Johanne Marange sect had never been immunized at the time of the head count, and less than 7% of children under one year were either fully or partially immunized. This finding is consistent with what is known about Johanne Marange sect members residing in other parts of Manicaland. For example, during the measles epidemic of 2009/2010, it was reported that "a large-scale measles outbreak has occurred among family members of the Johanne Marange Apostolic Church in the Nzvimbe area, about 70km from the city of Mutare, near the Mozambique border"[16]. According to this same United Nations news report, "30 people belonging to the religious group, mainly children, had died from measles, although the number could be higher because of Vapostori – the practice of "fast-tracking" burials"".

[16] IRIN, 22 February 2010. "Zimbabwe: Measles in nearly half of country's districts", available at: <http://www.irinnews.org/printreport.aspx?reportid=88199>

KEY CONCLUSIONS

- **There is a discrepancy between the Chimanimani Rural District Council's (CRDC) list of villages in Chimanimani district and what was found in the head count** – More villages were identified in Chimanimani district during the head count activity than were included in information provided by the CRDC. Head count information was captured from 202 villages, whereas the District Administrator's (DA) office had only 123 villages recorded. The 79 villages not recorded by the DA's office were therefore not yet officially recognised, though they were functioning "on the ground".

- **There are substantial differences between ZIMSTAT projections, health facility catchment area figures, and head count results for the number of children 0-11 months in Chimanimani district** – The ZIMSTAT projected figure for number of children 0-11 months in Chimanimani district for 2012 was 4,008 children, compared to 4,518 children according to health facility catchment area figures, and 3,243 children according to the head count. These figures are consistent with the general assumption that ZIMSTAT figures are likely to be higher than actual population figures on the ground. That the health facility catchment area figures are higher than the head count figure confirms that health facilities in Chimanimani district are providing EPI services to children who are coming from outside of the Chimanimani administrative boundaries.

- **The proportion of children 0-11 months in Chimanimani district who were fully immunized at the time of the head count is high** – At the time of the head count, 2,637 children were fully vaccinated or were on track according to age, giving a fully vaccinated coverage rate for Chimanimani district of 82.8% (excluding cases of missing data). Around 12% of children 0-11 months were only partially immunized at the time of the head count, which translates to an immunization dropout rate of 12%. Nearly 5% of children had never been vaccinated at the time of the head count.

- **EPI coverage for children 0-11 months in Chimanimani district is over 90%, though vaccine services are still not reaching all children** – Over 90% of children 0-11 months were fully or partially immunized at the time of the head count Adding together the number of children 0-11 months living in Chimanimani who were partially or fully immunized at the time of the head count results in a total of 3,030 children. Comparing this figure to the total number of children 0-11 months living in the district according to the head count (3,243), it is possible to calculate the EPI coverage for children 0-11 months in Chimanimani district. Based on this data, EPI coverage for children 0-11 months living in the district appears to be 93%. This means that overall, 7% of Chimanimani children 0-11 months had not been reached by vaccination services (or vaccination status was unknown) at the time of the head count.

- **Chimanimani health facilities are providing services to children who live outside of the Chimanimani administrative boundaries, but who are not accounted for properly when calculating district coverage rates** – It appears that an estimated 1,594 children who were served by Chimanimani HFs in the previous year (according to HF catchment area figures), were from areas outside of the district. Non-Chimanimani-based patients receiving EPI services within Chimanimani helps explain why Chimanimani district persistently records high immunization coverage rates, and why EPI coverage rates are sometimes (legitimately) above 100% for the district. Unfortunately, this influx of people from outside Chimanimani tends to distort the "real picture" in terms immunization coverage *within* Chimanimani. In other words, high district coverage rates boosted by non-Chimanimani residents can obscure the existence of unvaccinated children within the district.

- **Children's parental status does not appear to affect children's immunization status** – Among children identified having both versus one living parent, the relative proportions of children within these groups who are fully/partially/never immunized are relatively similar. Nearly 5% of children within both groups had never been immunized at the time of the head count. The number of children identified in this assessment with no living parents was too small to be able to draw any conclusions regarding immunization behaviours within that group.

- **The effect of moderate distances between children's homes and health facilities on immunization uptake is likely being mitigated by immunization outreach points** – The proportion of children who were never vaccinated at the time of the head count was similar for children living between 0-20 km from a health facility and ranged between 4.4% and 5.8%. However, for the few children who live over 20 km away, 13.0% had never been immunized at the time of the head count. The proportion of children who were fully vaccinated at the time of the head count ranged between 75% and 92% among children living between 0-20 km from a health facility. For children living over 20 km away, 70% were fully immunized at the time of the head count. Relatively consistent levels of immunization coverage among children living 0-20 km from a HF are likely due to the availability of immunization outreach services in the district. For communities located 20+ km from a health facility, although immunization outreach is supposed to be provided by the district team, challenges such as fuel shortages sometimes limit the availability of these services. Challenges servicing hard to reach communities may explain the higher proportion of "never immunized" children within this group.

- **Differences in immunization rates do exist between members of different religious groups** – Certain members of the Apostolic faith view immunization unfavourably.Of the 3,157 individuals whose religious affiliation was known, 29% were affiliated with the Apostolic faith, 65% said they were affiliated with a non-Apostolic faith, and 7% classified themselves as having no religious affiliation. Among the three groups, the proportion of fully immunized children was lower in the Apostolic group than within the non-Apostolic and non-religious groups. In contrast, the proportion of never immunized children was substantially higher within the Apostolic faith group (13% versus 1-2% in the other groups).

- **However, immunization uptake among different Apostolic sect members is not uniform and not all Apostolic faith members are vaccine objectors** – Rates of fully and partially immunized children were very high among children whose families are affiliated with the Johanne Masowe sect and the 54 "other" Apostolic sects identified in the head count. In contrast, nearly 90% of children under one year whose families are members of the Johanne Marange sect had never been immunized at the time of the head count, and less than 7% of children under one year were either fully or partially immunized.

LIMITATIONS OF THE STUDY

- Due to external and internal scheduling pressures and other issues arising at the time of the assessment, inadequate time was allotted by the team for assessment planning, coordination, preparation, and implementation. The rushed timeframe in which the assessment was completed negatively affected the exercise in ways including:
    - Data collectors (enumerators and VHWs) as well as other stakeholders supporting data collection (health workers, community leaders) received little orientation, training, and practice in using the data collection tools. VHWs were generally introduced to data collection tools for the first time on the actual day of data collection, and did not necessarily have access to

assistance if questions arose (for example questions about how to read the child health card accurately or how to interview caregivers). Lack of comprehensive orientation, training, and access to assistance among enumerators and VHWs may have affected resultant data quality.
    - An original part of the data collection plan was to compare data gathered by enumerators/VHWs with EPI register data collected at health facilities, and to identify potential issues through a triangulation process. This step was eliminated due to a lack of time.
- A variety of data collection methods were used in this assessment. While this offered flexibility to enumerators and an ability to adapt to local conditions during the data collection process, the lack of standardization among and between enumerator teams/VHWs may have negatively affected data reliability and quality.
- The period during which the head count was conducted was not optimal for implementing a community-based activity. Close proximity to a national holiday (National Independence Day) meant that communities being assessed were engaged in holiday preparations and holiday-related travel; this made data collection and data verification activities more difficult.
- Finally, the head count did not extend to villages situated outside of the official geographic boundary of Chimanimani district, which means that the assessment was unable to determine the true population being served in the district. Future head count-type activities should consider including villages surrounding the area of interest, if the area of interest is serving populations within those outlying villages.

LESSONS LEARNED AND RECOMMENDATIONS

PROCESS/METHODOLOGY

- Many "process-related" lessons were learned in the conducting of this head count activity. Based on experiences gained, the team recommends that greater time should have been allocated for the following steps in the assessment process:
    - Clear identification of assessment objectives – having clear, focused objectives which all key stakeholders agree on will make subsequent steps in the design, planning, implementation, and analysis easier and more targeted.
    - Study design – sufficient time and resources should be dedicated to designing all aspects of the study (tools, methods, sampling design, data quality and control, stakeholder roles and responsibilities, logistics, protocols, etc.) prior to any actual implementation. In this case, decisions about many of the "small details" were made in an ad hoc manner once data collection had begun and this may have ultimately affected data quality and reliability.
    - Data collection tool design and pretesting – having clear study objectives and research questions will aid in designing relevant, concise data collection tools. In this case, some questions that were included in data collection tools did not necessarily speak to the study objectives and could have been eliminated. In addition, the intent of some questions in the tool was not clear and enumerators/VHWs reported having challenges in completing these questions. Because the tools were not pretested prior to actual use in the field, there was no opportunity for problem questions to be identified and corrected.
    - Enumerator/VHW training – sufficient time and resources should be dedicated to enumerator/VHW training and practise collecting data. In this study, enumerators/VHWs were asked to fill out data collection tools using information collected through reviews of various types of registers, interviews with caregivers, and reviews of child health cards. Additional

training and time for practise would likely have enhanced standardization among data collectors and thus resultant data quality.

- Data analysis plan – it is critically important to design a data analysis plan at the initial study design phase, which includes a data cleaning and data entry plan as well as plans for dummy tables in which to present data/findings. Developing the data analysis plan will be made easier if the study objectives and research questions are clear. In the case of this assessment, insufficient thought was given to the data analysis plan in the early stages of the activity, and this resulted in substantial delays in analyzing the data and writing a report of the findings.
- Resource mobilization – finally, it is important to anticipate, budget for, and mobilize all of the resources needed before the start of data collection. For example, modest incentives (financial or non-financial) may be needed for enumerators, VHWs, and/or caregivers participating in the activity or transport allowances may be needed for Village Heads if they are being called to meet in a specific location.

- The length of time allotted for the field-based portion of this head count exercise was extremely ambitious given that sufficient sensitization of communities was required as well as data collection. Realistically, this exercise should be done over a month-long period or more, depending on the size of the area being assessed and the number of stakeholders involved.
- Adequate and timely involvement of a broad range of stakeholders[17] is required prior to carrying out a head count exercise. Stakeholders should be involved in the whole planning process from the beginning stages, as this encourages participation, cooperation, and ownership in future activities. In the case of this head count activity for example, earlier sensitization of key community leaders could have aided community mobilization efforts, as leaders could have notified community members about planned dates for data collection and ensured that community members were available to be counted.
- If data collection tools are to be used by VHWs, either ensure that all VHWs can confidently read/complete tools that are written in English. Otherwise, have tools translated into relevant local languages to ensure that VHWs can understand all items and how to respond to questions as intended.
- If collecting information on children's parental status, include a question on the gender of the surviving parent in one-parent households. Health-seeking behaviours in "mother-only" households may be different than those in "father-only" households.
- When conducting the data verification portion of the exercise, include as many community members as possible to ensure that all children (especially from hard to reach or "unrecorded" areas) are captured. In some instances during this head count activity, VHWs and Village Heads/Secretaries found discrepancies between their respective community registers, i.e., VHWs had records of some children that village leaders did not have and vice versa. Involvement of different community stakeholders in the data review increases the possibility that the final count of children will be accurate.
- Avoid conflicts with other planned community activities when planning community-based assessments. Consultation with district and community stakeholders about timing of the assessment will help ensure that the activity can take place as planned.

[17] Such as government officials from different Ministry offices; ZIMSTAT representatives; community leaders; local government officials like Ward Councilors and District Administrators; health workers and VHWs; NGO representatives; and community members.

IMMUNIZATION COVERAGE

Findings from this head count exercise indicate that problems do exist in the current way that immunization coverage rates are calculated. This problem is important because inaccuracies in coverage rates have the potential to mislead stakeholders (policy makers, program planners, health service providers, and others) into thinking immunization coverage is different from what it really is. Erroneous conclusions can in turn lead to inaccurate resource planning and allocation, inefficient health service provision, and poor health outcomes for communities. The following "program-related" recommendations are made within this context:

- Districts should conduct head counts regularly in order to obtain more accurate target population statistics. More realistic target population figures would aid in more realistic planning (including ordering of vaccines/vaccine supplies, planning of outreach services, etc.), budgeting, service provision, and monitoring/evaluation of EPI programs. At the community level, VHWs should be encouraged and supported to update community head counts on a quarterly basis and to communicate results back to health workers.
- In addition to regular head counts, there is a need for all health clinics to develop accurate maps of their catchment area that reflect where their clients are *actually* coming from, regardless of administrative boundary distinctions[18]. The DHE/PHE should lead health facilities in an exercise where health workers gather, develop catchment area maps for their facilities, compare resultant maps with neighbouring health facilities, and allot communities to one health facility or the other (but not to neither and not to both), regardless of where those communities are located relative to official administrative boundaries. If done comprehensively, population statistics arising from these catchment area maps would be more accurate and useful to health facilities/district executives than census-projected figures and could be used to calculate more accurate immunization coverage rates. (Note that catchment area maps should then be reviewed periodically and revised, but that maps would be official until superseded by revised versions. Note also that, in the case of Chimanimani district, a mapping activity like this would feature participation from not only neighbouring districts but also ideally a neighbouring country, which may or not be feasible.).
- Even after the official days of the head count are complete, data capturing forms should be left at health facilities for use by VHWs and caregivers. Any data that is received by stakeholders post-head count exercise should be noted and used to further refine district statistics.
- Finally, this head count activity revealed that there are vaccine objectors in Chimanimani district but that not all Apostolic faith members are vaccine objectors. Given this, policy makers/program managers/health workers should not assume that Apostolic faith perspectives on immunization are homogenous. Rather, for maximum effectiveness, stakeholders should tailor EPI programs and information, education, and communication messaging specifically for particular target populations of interest.

[18] Health workers in Chimanimani and neighboring districts have been trained in how to produce community maps during Reaching Every District training, and updating of maps is part of the annual updating of health facility micro-plans.

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ANNEXES

Annex 1: Chimanimani Head Count Data Collection Tool

Chimanimani Head Count Data Collection Tool (***Only applicable to this exercise***)								
Village Name_____		Ward_____			Name of Village Head_____			
Name of Village health worker_____					Distance of the furthest household from the outreach point_____			
Name of outreach point_____			Distance of village from the outreach point_____					
Name of Child	Age in Months	Religion	Parental Status			Vaccination Status		
			Both parents	One parent	No parent	Fully	Partially	Never
Signature of Village Head_____								

Annex 2: Chimanimani Head Count Field Summary Sheet

Date……..
Village…….. Village Health Worker Name……
Health Facility……..

1. Age

Children's ages	0 – 11 months	12 – 23 months	24 – 59 months
Total number of children			

2. Religion

Religion	Apostolic	Other Religion
Total number		

3. Parental Status

Parental Status	Both parents alive	One parent	No parent
Total number			

4. Vaccination Status

Vaccination Status	Never	Partially	Fully
Total number			

5. Ward Health Team

Ward Heath Team	Yes	No	Date of minutes of last meeting

6. Distance from village to health facility…… Outreach point……

7. Availability of outreach services

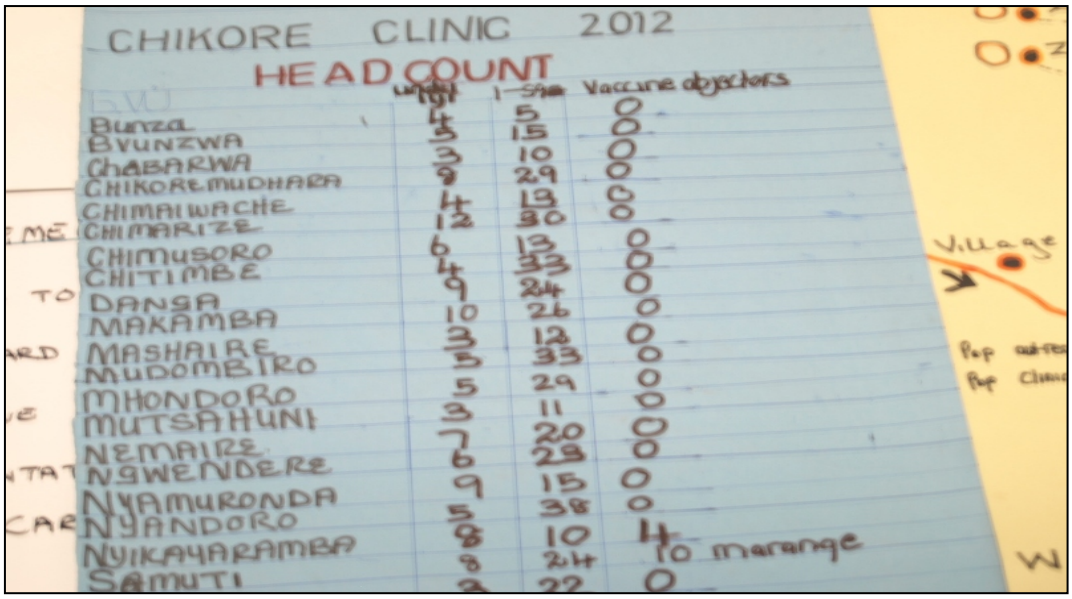
Availability of outreach services	Yes	No

Team Leader Signature_____

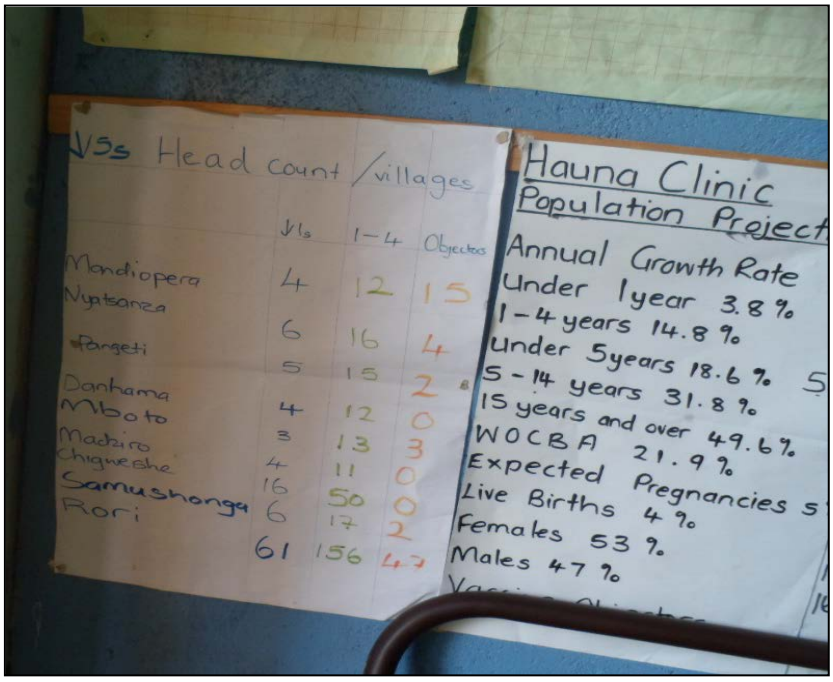
Annex 3: List of Enumerators, by Teams and Wards

S/N	Team #	Enumerator Name	Designation	Organisation	Wards Covered
1	1	Mrs Sibongile Sifovo	District Nursing Officer Chimanimani District	MOHCW Chimanimani District	1, 2, 3, 5, 21, 22, 23
2		Ms Adelaide Shearley	Child Health & Immunization Advisor	MCHIP Harare	
3		Mr Liberty Vhumisayi	A/Provincial Nutritionist	MOHCW Manicaland Province	
4		Mr Brian Muchinapo	District Community Officer	CRDC Chimanimani District	
5		Mr Grant Nyasulu	Provincial Immunization Officer	MCHIP Manicaland	
6	2	Mr George Muresherwa	District Health Information Officer	MOHCW Chimanimani District	16,18,19, 20,6,7, 4
7		Ms Margaret Zvirahwa	Provincial EPI Officer	MOHCW Manicaland Province	
8		Ms Leocadia Mangwanya	Child Health Officer	MCHIP Harare	
9		Ms Patience Panganai	Health Promotion Officer	MCHIP Harare	
10	3	Mr Trainos Mukwakwasha	District Environmental Health Officer	MOHCW Chimanimani District	8, 9, 10, 11,12, 13, 14,15
11		Ms Rosah Musika	Community Health Nurse	MOHCW Chimanimani District	
12		Mr Tendai Samushonga	District Health Promotion Officer	MOHCW Chimanimani District	
13		Mrs Florence Rondozai	District Child Health Officer	MCHIP Manicaland	
14		Ms Edhina Chiwawa	District Community Officer	MCHIP Manicaland	

Annex 4: Photos of Select HFs with Head Count Figures Per Village, Manicaland Province



Left: List of villages in Chikore RHC catchment area, showing head count figures of children 0-11 months and 12-59 months as well as the number of vaccine objectors per village. (Chikore RHC, Makoni District, Manicaland Province)



Left: List of villages in Hauna RHC catchment area, showing head count figures of children 0-11 months and 12-59 months as well as the number of vaccine objectors per village. (Hauna RHC, Mutasa District, Manicaland Province)