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**HEALTH FACILITY ASSESSMENT  
MARCH 15-APRIL 4, 1998**

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## ACRONYMS

ARI	acute respiratory infection
BASICS	Basic Support for Institutionalizing Child Survival Project
BCG	Bacillus of Calmette and Guerin (tuberculosis vaccine)
CAIDP	Central Asian Infectious Disease Program
CAR	Central Asian Republics
CDD	Control of Diarrhoeal Diseases
DD	diarrheal diseases
DPT	diphtheria, pertussis, and tetanus vaccine
DT	diphtheria and tetanus toxoid combination vaccine (for use in young children)
EPI	Expanded Programme on Immunization
FAP	feldsher (medical assistant) Accoucheur (midwife) Post
HW	health worker
IMCI	integrated management of childhood illnesses
MCH	maternal and child health
MOH	Ministry of Health
NID	national immunization days
NIS	Newly Independent States
NTO	national technical officer
ORS	oral rehydration salts or oral rehydration solution
ORT	oral rehydration therapy
RIHFA	rapid integrated health facility assessment
RPM	Rational Pharmaceutical Management Project
SUB	rural rayon (etrap) hospital, rural outpatient clinic
SVA	rural hospital, rural medical ambulatory clinic
SVP	rural health facility, replacing gradually FAPS and SUBS in Uzbekistan
Td	tetanus and diphtheria toxoid combination vaccine (for use in older children and adults)
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization

## **I INTRODUCTION**

Over the past year, the ministries of health of Kazakhstan, Kyrgyzstan, and Uzbekistan have implemented ARI and CDD clinical case management courses in pilot oblasts, based on the available WHO materials BASICS and the Rational Pharmaceutical Management Project (RPM) provided technical support through the USAID-sponsored Central Asian Infectious Disease Program (CAIDP) and UNICEF provided logistic support for the acquisition of essential drugs. Information obtained through routine supervision and spot-checking, as well as feedback from the different oblast health departments, suggested that the approach, new for this part of the world, was welcomed and readily adopted by most health workers. The end of CAIDP in June 1998 urged for a more formal evaluation of the obtained results and a rapid health facility assessment (HFA), a tool used in 1996 for a fact finding survey before the training started, was selected as the instrument.

The version of the health facility survey (HFA), last revised in Almaty in May 1997 for appropriateness in the Central Asian Republics (CAR) by BASICS/RPM consultant Paul Ickx and BASICS NTOs from Kazakhstan, Uzbekistan, and Kyrgyzstan, was circulated between BASICS, CDC, and RPM for final review in January 1998. Questionnaires and participant guidelines in English, as well as Epi-Info data entry screens, were adapted in February by Ickx, in Haiti. The few final modifications were integrated into the Russian version in February 1998 by BASICS consultant Eva Kudlova and BASICS NTO Aigul Kuttumuratova. These two individuals were responsible for the training of surveyors in each oblast in February 1998. Data collection took place early in March 1998, supervised by BASICS NTOs in Zhambul and Osh, and by the oblast chief pediatrician in Ferghana. Data entry and analysis was done from March 16 to April 4 in Almaty, with assistance from Ickx. He also extracted the necessary data for the pharmaceutical price analysis and transmitted the data to RPM in Washington for analysis through the Prescription Analysis Software System (PASS) by RPM Country Program Officer Thomas Moore. Separate reports were written in Russian for each oblast, with assistance from the respective oblast chief pediatricians or oblast chief trainers.

## **II OBJECTIVES**

The objectives of the health facility assessment were as follows:

- 1 To determine
  - a) current knowledge and practices of health workers at outpatient clinics regarding the assessment and management of sick children
  - b) the barriers to effective case management practices
  - c) the adequacy of the training and supervision of health workers

- 2 To use information obtained on case management practices, training, supervision, and barriers to public health practice to
  - a) compare knowledge and practice regarding ARI clinical case management between health workers that went through the CAIDP-sponsored ARI clinical case management course and health workers that did not
  - b) assess possible differences in caretakers' knowledge and practice between those caretakers whose children were seen by a health worker that went through the ARI clinical case management course and those whose children were seen by health workers that did not
  - c) make recommendations to improve the ongoing clinical case management courses
- 3 To further train national-, oblast-, and rayon-level personnel in survey techniques, collection and analysis of survey data, and the use of data to improve the quality of case management in outpatient health facilities

### **III METHODOLOGY**

#### **A Sampling**

Sampling was done in each oblast by the oblast health department, assisted by BASICS consultant Eva Kudlova and BASICS NTO Aigul Kuttumuratova

It was not possible to obtain an equal probability sample of all health facilities in each oblast

- All facilities that were not accessible during the eight to nine day data collection period were excluded, this interfered with the sampling more in Zhambul and in Osh than in Ferghana
- All facilities that had been identified from available reports as seeing fewer than four sick children a day were excluded from the sample
- The recent health reforms in Uzbekistan will lead to abolishment of FAP/FP over the next one to two year period Therefore, unlike examples found in the two other oblasts, ARI/DD training did not emphasize training of feldshers and only a few (5-6) feldshers from about 600 FAPs were trained It was decided to include only one FAP in each sample

The resulting sampling frame for each oblast was as follows

**Table 1 Sampling frame**  
(Health Facility Assessment CAIDP March 1998)

	Ferghana		Osh		Zhambul		Total	
	T	U	T	U	T	U	T	U
<b>Polyclinic</b>	4	8	17	0	15	0	36	8
<b>SVA</b>	27	76	16	23	25	41	68	140
<b>SUB</b>	9	21	50	92	74	46	133	159
<b>SVP</b>	4	16	NA	NA	NA	NA	4	16
<b>FAP</b>	2	1	50	92	74	46	126	139
<b>Total</b>	46	122	133	207	188	133	367	462

T=Trained, U=Untrained

The remaining health facilities (HFs) were divided between those with at least one health worker trained in ARI clinical case management and those without any health workers trained in ARI clinical case management, and a list of each type was established. The two categories were used as two separate sampling frames. The proportion of each category of health facility in each sample frame was calculated. Twenty HFs in each sample frame were randomly selected according to the proportion calculated, except for Ferghana, where only one FAP with a trained health worker and one FAP without a trained health worker (HW) was selected. Random numbers for selection were generated by a calculator.

For some of the lower tier HFs, no reliable data on their activity status was available. Therefore, if a selected HF proved to be inactive, an alternative HF could be selected according to the following criteria:

- 1) the geographically nearest HF of the same category
- 2) same sample frame as the original HF (with a trained or untrained HW)
- 3) HF sees a sufficient number of patients

With the given time and resources, it was not possible to identify HWs that were neither trained in ARI clinical case management nor in DD clinical case management and retain only those as "untrained." Thus, both the sample of untrained HWs and trained HWs contains some HWs that have been trained in DD clinical case management.

The resulting sample consisted of the following type of facilities

**Table 2 Survey sample**  
(Health Facility Assessment CAIDP March 1998)

	Ferghana		Osh		Zhambul		Total	
	T	U	T	U	T	U	T	U
<b>Polyclinic</b>	2	1	3	0	3	0	8	1
<b>SVA</b>	12	14	3	4	4	7	19	25
<b>SUB</b>	3	1	6	2	1	3	10	6
<b>SVP</b>	2	3	NA	NA	NA	NA	2	3
<b>FAP</b>	1	1	8	14	12	10	21	25
<b>Total</b>	20	20	20	20	20	20	60	60

In each facility, the sample consisted of all infants and children under-5-years of age presenting to a health facility during the period of observation whose caretaker described them as having **fever, cough/difficulty breathing/pneumonia, or diarrhea**. The total number of infants and children represents clusters brought to the sampled health facilities. The data obtained through observation of a larger number of children, or through interviews for a similar large number of caretakers, allow greater statistical precision than when health facilities or health workers are used as the unit of measurement. The habit of performing home visits combined with the absence of heating in many facilities urged the survey teams to make the survey vehicle available to bring children to the facility in several cases. In a few cases, the surveyor would accompany the health worker on a home visit.

## **B Survey Instruments**

The survey instruments were designed to obtain information on key aspects of the knowledge and practices of health care workers and of mothers leaving the health facility. In addition, information was gathered on the health facility, including the availability of materials and supplies. The survey was designed to assess important aspects of the case management of sick children, but did not require that all health workers had been trained in “standard case management” prior to the survey.

Four survey instruments were used at each outpatient health facility

- a) observation of how a health worker manages the sick child
- b) interview of health personnel regarding knowledge and practices of case management of sick children
- c) exit interview with the caretaker of the child as (s)he leaves the health facility
- d) assessment of facilities and supplies

Survey instruments had been translated into Russian, Kazakh, Kyrgyz, and Uzbek in 1996. An updated version (May '97, January '98) only exists in Russian. In Uzbekistan, both the new Russian version and the former Uzbek version were used to facilitate training. All questionnaires were administered in Russian. A back translation of the final Russian version is attached in Appendix A. A printed list of pharmaceuticals obtained through analysis of prescription practices in 1996 served as a basis for collecting prices of pharmaceuticals prescribed in the 1998 survey.

### **C Field Work**

Field work in each oblast was conducted by teams, each comprised of a supervisor and two surveyors. At each health facility, the supervisor was responsible for introducing the team and explaining the purpose of the visit. During the clinic visit, the supervisor identified children meeting the case definition for entry into the survey and gave an identification card to the caretakers of these children to ensure that they were followed in the clinic. In addition, the supervisor conducted the facility equipment and supply review section of the survey. One surveyor was stationed in the consulting room and conducted the health worker observation component of the survey; at the end of the clinic visit, this surveyor also conducted the health worker interview. The second surveyor conducted exit interviews with caretakers as they left the clinic with their child. The supervisor monitored the performance of the surveyors regularly to ensure that questionnaires were completed correctly; all errors and incomplete questionnaires were corrected in the health facility. At the end of the day, the supervisor reviewed all questionnaires for completeness and accuracy.

The data collectors were chosen from senior health staff of the oblast familiar with the visited facilities. Although sending supervisors to facilities they were supposed to routinely supervise was avoided, it is reasonable to assume that the data collectors knew which health workers were trained and which were not. This may have had some influence on the recorded answers in the survey, but, as we will see below, ample attention was given during training to obtain intra- and inter-surveyor reliability in the application of the questionnaires before starting data collection.

Training of survey teams was conducted by Kudlova and Kuttumuratova during February 10-15 in Taraz, and February 17-21 in Osh. Kuttumuratova continued alone in Ferghana during

February 23-27 Training included a review of survey methodology and objectives, implementation planning for field activities, and careful review of the survey instruments. Training involved group activities, role plays, and practice sessions at local outpatient health clinics. Inter-surveyor reliability was more than 90 percent for each of the questionnaires by the end of the training period, except for the health worker interview form in Osh, where it was more than 80. Data collection was carried out in each oblast from March 2-11, 1998, supervised by BASICS NTOs in Zhambul and Osh, and by the oblast chief pediatrician in Ferghana. A different health facility was visited on each of the eight to nine days available for the survey. At each health facility, survey teams attended the entire clinic session, which was usually conducted between 8:00 am and 2:00 pm.

While data collection took place, extensive lists of drugs, based on the actual prescriptions observed in the 1996 survey and completed with the drugs of the newly observed prescriptions, were compiled in each oblast. Since prices from the last government purchase for these drugs were not readily available, prices of the listed drugs were collected through market research by the oblast health department in each oblast, to allow for a reliable cost analysis.

#### **D Data Analysis**

Questionnaire data were coded and then entered into Epi-Info (version 6.04) software by computer-literate data entry staff supervised by BASICS NTOs and the Ferghana chief oblast pediatrician from March 17-25, assisted by Ickx in Almaty. Preliminary data analysis was conducted March 23-28 by Ickx, BASICS NTOs, and the Ferghana chief oblast pediatrician. Descriptive data analysis and key indicators were summarized and discussed with oblast representatives in Almaty, and condensed in a country report during March 30-April 1, 1998.

Prescription data were extracted from the Epi-Info databases and converted for use in the Prescription Analysis Software System (PASS) during data entry by Ickx and transmitted for further analysis in Washington by the RPM country program officer.

Preliminary results were discussed in Washington with BASICS and RPM staff, April 8 and 9, 1998, and topics for further analysis were identified.

#### **IV FINDINGS, DISCUSSIONS, AND RECOMMENDATIONS**

The design of the survey allows for assessment of whether certain actions were performed, certain questions asked, and certain topics discussed or mentioned in response to open-ended questions. It does not necessarily allow for qualitative evaluation of most of the individual findings. The combination of information obtained through several questions or questionnaires allows the assessment of the quality of case management of sick children.

Throughout the report, specific findings in each oblast are discussed in the text and shown in tables. Charts are added as illustration, showing aggregated results of the three oblasts for 1996, the 1998 untrained stratum, and the 1998 trained stratum. Although more extreme results in one oblast will be tempered by the results in the two others, any significant difference between the three samples will still stand out.

**In all tables and charts**, the following codes have been used to identify the three samples:

**“1996”** data from the three oblasts, collected in November 1996

**“U ‘98”** data from the three oblasts, collected in March 1998 at facilities where an “untrained” health worker was observed and interviewed

**“T ‘98”** data from the three oblasts, collected in March 1998 at facilities where a “trained” health worker was observed and interviewed

“Trained” and “untrained” refer only to the ARI clinical case management course. Both samples contain health workers trained and not trained in the DD clinical case management course and are, therefore, usually also compared with the 1996 sample. In the charts, data have been aggregated, combining data from the three oblasts.

## A General Descriptive Information

In total, children were seen by the following categories of health workers in each oblast:

**Table 3 Number of children observed by type of health worker**

(Health Facility Assessment CAIDP March 1998)

	Ferghana		Osh		Zhambul		Total	
	T	U	T	U	T	U	T	U
<b>Physician</b>	159	157	80	31	48	67	287	255
<b>Nurse</b>	-	-	7	-	14	20	21	20
<b>Midwife</b>	-	-	7	-	-	-	7	-
<b>Feldsher</b>	5	5	50	94	91	56	146	155
<b>Total</b>	164	162	144	125	153	143	461	430

While in Osh and Zhambul more than half the children were seen by feldshers, in Ferghana, almost all children were seen by physicians. This is due to the sampling in Ferghana, which excluded FAPs from proportional representation.

The sex ratio of the children is close to 1 in Ferghana (1.1 for trained, 0.9 for untrained) and Zhambul (1.1 for trained, 1.0 for untrained), but many more boys than girls were seen in Osh (1.6 for trained and 1.9 for untrained). While both in Ferghana and Zhambul less than 10 percent of the cases came from urban families, one-fourth of the cases seen by trained health workers in Osh came from urban families. More than 85 percent of the caretakers walked to the facility in all three blasts. More than 90 percent spent less than 30 minutes to come to the facility, and the average time to come to the facility was less than 14 minutes in all three oblasts. This gives the impression that health facilities are, in general, readily accessible. However, very remote and isolated health facilities had been excluded from the sample.

The reasons cited for visiting the health facility are described in Table 4.

**Table 4 Reasons for visiting the health facility**

	Ferghana		Osh		Zhambul	
	T n=164	U n=162	T n=144	U n=125	T n=153	U n=143
<b>Fever</b>	13%	5%	1%	5%	1%	1%
<b>ARI</b>	84%	88%	94%	85%	98%	98%
<b>Diarrhea</b>	3%	7%	4%	10%	1%	1%

The survey took place during the ARI season, which explains the predominance of this complaint. Under **Fever**, only those cases that had no other reason for coming to the health facility but fever were withheld (those that presented with fever and ARI were counted as ARI). With few exceptions, only ARI cases have been analyzed as a separate stratum.

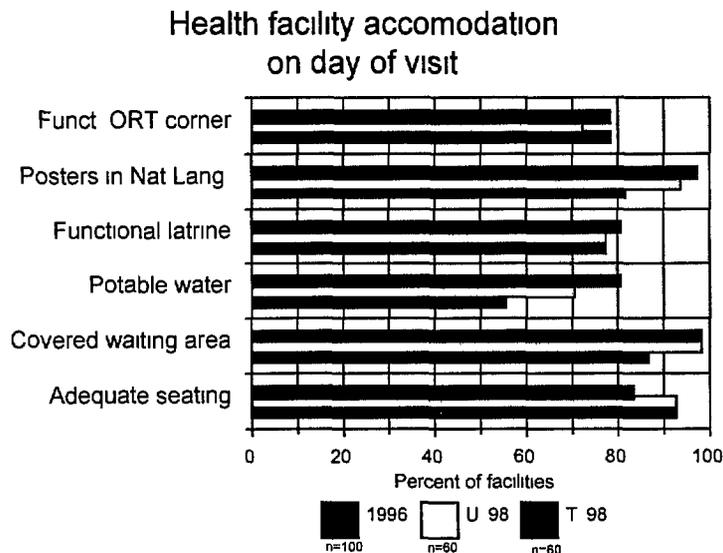
## **B Facilities, Equipment, and Supplies**

The general condition of the health facilities was no different from that of November 1996. Many of the facilities visited needed urgent maintenance and/or repair, but even those in poor condition gave a remarkable impression of cleanliness on the day of the visit. Virtually all facilities had a covered waiting area for patients, and adequate seating for the patient and health worker during the consultation. Lack of heating interfered with the normal functioning of the facilities in all three blasts; home visits are often preferred by the caretakers over a visit to an unheated facility. Lack of electricity for long stretches of time was a problem in Zhambul and Osh which interferes with adequate cold chain management for vaccines, as discussed in section IV J.

One would expect potable water and a functional latrine to be available at all health facilities (**Fig 1**), however, it seems to be a problem in at least Osh and Zhambul and could interfere with proper DD case management. Functional ORT corners were available in all facilities in Ferghana and in more than half of the facilities in Zhambul. For this survey, contrary to what was done in

the 1996 survey, fully equipped ORT corners that were closed during the winter (the non-diarrhea season) were counted as nonfunctional Posters with health messages in the national language were available in almost all facilities in the three oblasts, a big improvement for Kazakhstan

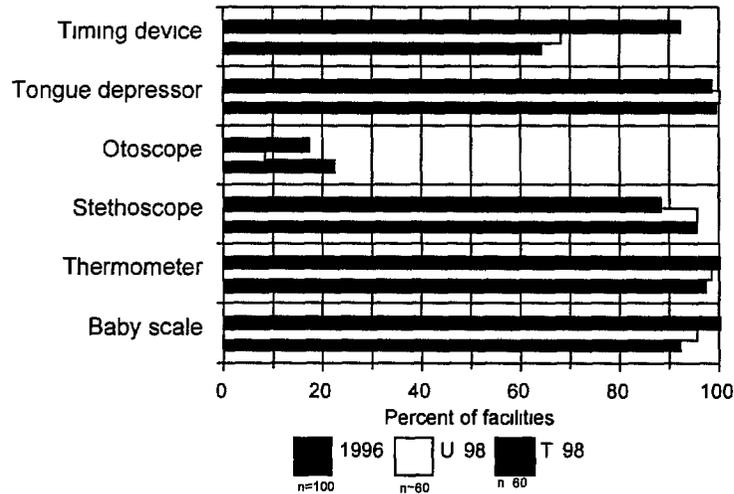
**Figure 1**  
(Health Facility Assessment CAIDP March 1998)



Thermometers, stethoscopes, and tongue depressors were available in almost all facilities. An adequate timing device (a watch indicating seconds or a special timer) was available in most of the facilities that have a trained health worker (**Fig 2**). Because a shipment of timing devices was delivered by WHO for distribution to all trained health workers, timers should have been available in all health facilities, but they were found to be available in only 60 percent of the facilities without trained health workers in Osh, and in 50 percent of those facilities in Zhambul. Flip charts have become available in more than 60 percent of the facilities with a trained health worker in all three oblasts. Counseling cards (original or adapted UNICEF/WHO case management cards for diarrhea and/or ORS) are available in at least 80 percent of the facilities in Ferghana and Osh, less in Zhambul. Adequate sterilizing equipment was not functional in many facilities, often due to lack of electricity.

**Figure 2**  
(Health Facility Assessment CAIDP March 1998)

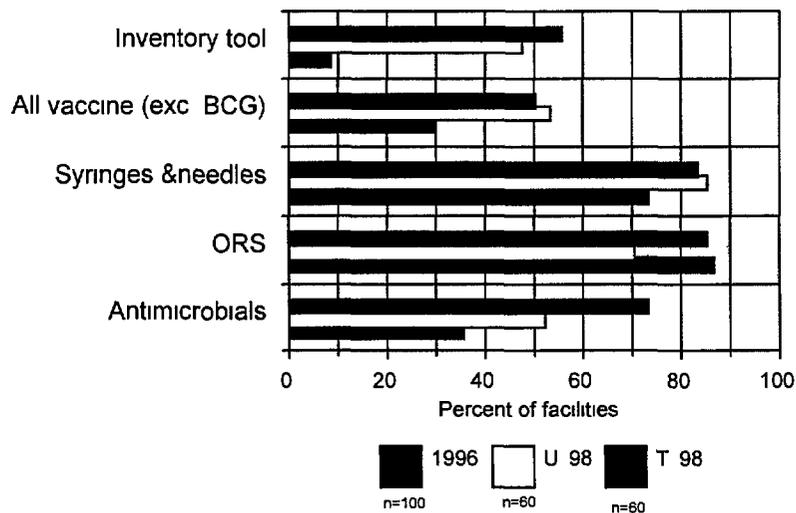
**Availability of key equipment  
in facilities on day of visit**



- *Problems with heating, potable water and functional latrines need to be addressed urgently where they exist. Even if all other equipment is available, these deficiencies are likely to interfere negatively with the availability of quality basic child health care at the visited facilities*
- *The absence of an adequate timing device observed in November 1996 has been mended in most of the facilities that have a trained health worker, through distribution of UNICEF/WHO timers for counting respiratory rates. Care should be taken to continue to provide such devices during all training sessions in the future*
- *If posters or handouts with health messages are to be understood properly, they should contain messages in the local language of the target group. All three oblasts have systematically translated all DD and ARI material targeted at caretakers into the local language*
- *A functional ORT corner should be available in all facilities*

**Figure 3**  
Health Facility Assessment CAIDP March 1998)

**Availability of Key Supplies  
in facilities on the day of the visit**



Availability of key drugs (Fig 3) recommended as first-line drugs in the treatment of DD and ARI seems less problematic than in November 1996, but is still largely dependent on “humanitarian” supplies. In none of the three oblasts were antimicrobial pharmaceuticals, indicated for first-line treatment of pneumonia (cotrimoxazole, ampicillin, or amoxicillin) found in all facilities that had a trained health worker on the day of the survey. Availability of essential drugs was lower in facilities without a trained health worker. A more sensitive measure of availability is the absence of stock-outs in the month (or three or six months) prior to the visit. Ninety percent or more of all visited facilities reported stock-outs for vaccines, ORS, syringes and needles, cotrimoxazole, and/or necessary registration and reporting forms during the month previous to the visit. Although measures seem to have been taken in Ferghana and Osh to mend the absence of an adequate inventory tool (observed in November 1996), this does not occur in Zhambul.

Although “humanitarian” drugs are scrupulously monitored in most facilities in all three oblasts, drugs of other origin are less systematically monitored. In many facilities there was no record showing a number that adequately reflects the real availability of essential drugs in the facility. It should be noted that while anaemia is a widespread problem in the region, few facilities had iron tablets available on the day of the visit.

In Ferghana, the facilities relied solely on a governmental distribution system for drugs and supplies. This is to be compared with Osh and Zhambul, where facilities rely on governmental sources, on direct supply by humanitarian aid, and on private sources, and most health workers have to pick up the drugs from a designated distribution point. In all three oblasts, less than one-

fourth of the facilities had a functioning vehicle available on the day of the visit, which makes the reliability of the systems in Osh and Zhambul questionable

Health workers blamed the poor availability of essential supplies almost exclusively on economic factors lack of financial resources, fuel, and transport The lack of supplies and essential medicine was listed most frequently in the three oblasts as the main problem interfering with the normal functioning of the facility

- *Without the availability of essential drugs, little impact on childhood mortality/morbidity can be expected, even when case management by the health worker is flawless The present social and economic transition, with a drive toward privatization that is different in the three countries, makes it difficult to formulate tailored answers to the problem In the short run, the agreement between UNICEF and the respective MOH to ensure a necessary supply of key drugs (ORS and cotrimoxazole) to the CAIDP oblasts should be followed up to ensure sufficient supply in the target oblasts for the coming year*
- *In the long run, the present distribution systems, largely unchanged since the Soviet era, should be evaluated and adapted to the changing pharmaceutical market In the oblasts where health workers have to pick up their supplies, it should be taken into account that only a minority of them has access to a functioning vehicle*
- *Oblast health authorities should try to identify the reason why between 20 to 50 percent of the facilities with trained health workers did not have cotrimoxazole in stock, while this drug had been provided by UNICEF as a contribution to the CAIDP program Anecdotal reports suggest a bottleneck in the pipeline at the rayon center level, most probably due to lack of adequate transportation even at facilities at this level, and maybe aggravated by poor communication of availability at that level to some facilities*
- *Given the present economic constraints and limited availability of funds in the public sector, which makes improvement of public system distribution systems unlikely, it will pay to investigate schemes where the population of the catchment areas of health facilities participates in the financing of a system to ensure adequate supply of essential drugs*
- *Even when essential drugs are readily available, an inventory tool that accurately reflects the stock level of each drug regardless of its origin is needed in order to enable health staff to monitor the total quantities in stock and place an order (from the different available sources) before stock-outs occur Supervision tally sheets introduced through the CAIDP-supported clinical case management course draw attention to the importance of tracing the regular availability of essential drugs for ARI and DD and seem to have led to the presence of a reliable inventory tool in some facilities*

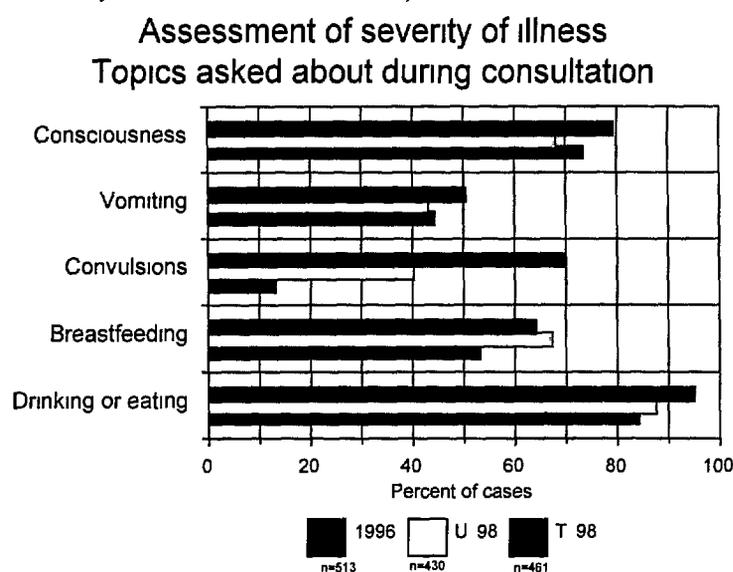
## C Assessment of Illness

The average consultation time per case was 14 minutes in Ferghana and Osh, and 12 minutes in Zhambul, with a minimum of 5 minutes and maximum of up to 30 minutes

- *While 20 minutes would be a more comfortable average for the management of new cases of sick children, a lower limit of 15 minutes per case could be acceptable to implement all aspects of adequate case management (assess, classify, treat, communicate) if health workers are thoroughly trained and have acquired good familiarity with the case management algorithm. The present consultation times are unlikely to reflect an optimal situation for accurate case management. The issue of rather short average consultation times should be addressed on a case-by-case basis during individual supervision visits.*
- *In Kazakhstan, a health insurance system is being implemented where insurance companies reimburse physicians according to number of patients seen. Local health staff claimed that a minimum of six patients per hour is required for the physician to earn the equivalent of his present salary. This would in practice result in an even lower average consultation time than the present 12 minutes, which is already too low to ensure adequate case management in many cases.*

As in November 1996, the complaint presented by the caretaker as the reason for the visit to the health facility was addressed during the visit in almost all cases, and adequately so in most cases. The systematic assessment of severity of illness has improved dramatically for the trained health workers in Ferghana, but stays weak for all other health workers (Fig 4). There is one significant difference in favor of the trained health workers in the three oblasts: health workers checked more systematically whether the child had convulsions in 1998 than in 1996, and more so in the “trained” sample than in the “untrained”

**Figure 4**  
(Health Facility Assessment CAIDP March 1998)



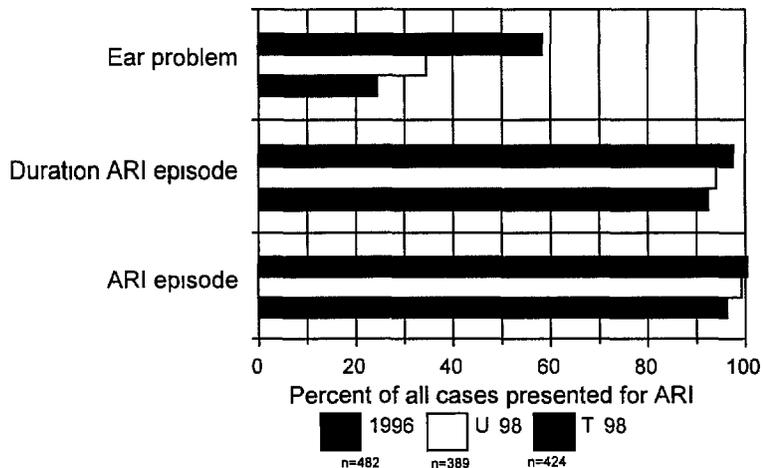
All cases were asked at least one question to assess the severity of illness, but in all three oblasts, very few cases were asked all the questions recommended in the IMCI guidelines to assess severity of disease

In addition to assessing the severity of illness, HWs should quickly examine any sick child for possible concurrent illnesses by asking four questions relating to the four most common childhood illnesses. In Ferghana, all key history questions (history of ARI, diarrhea, fever, or ear problems) were addressed in more than 80 percent of the cases by health workers, both trained and untrained. A low percentage of cases were asked all four key history questions in the two other oblasts, again with the difference in favor of the trained health workers. Treatment prior to the visit, traditional or western, was not systematically assessed.

Specifically for the ARI cases (**Fig 5**), almost all health workers asked some history questions about the illness, most often trying to assess the duration of the spell of illness. Ear problems were neglected by untrained health workers in the three oblasts and also by trained health workers in Osh and Zhambul, even though the module on ear problems was included in the ARI case management training.

**Figure 5**  
(Health Facility Assessment CAIDP March 1998)

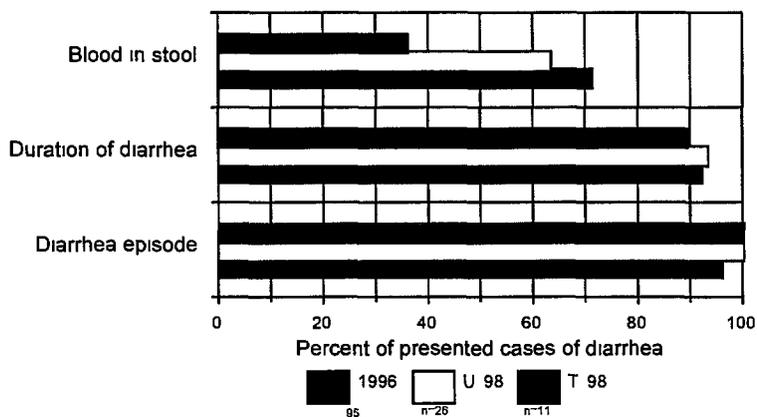
History questions asked of caretaker of child presented with ARI



For the few diarrhea cases that presented (**Fig 6**), history and duration of the diarrhea episode were well addressed, but the presence of blood in the stool was not assessed for all cases. However, the total number of diarrhea cases was too small to see these results as representative.

**Figure 6**  
(Health Facility Assessment, CAIDP March 1998)

History questions asked of caretaker of child presented with diarrhea



- *Topics specifically addressed in the ARI and DD clinical case management training have improved significantly in all three oblasts*
- *As could be expected, focusing on DD and ARI alone does not necessarily lead to more integrated case management. Systematic assessment of severity of disease in young children seems better than in 1996, but is far from perfect. Likewise, the exclusion of concurrent common childhood illnesses is not systematically done. With the introduction of case management according to the IMCI algorithm, more improvement on these topics may be expected. Care should be taken that the integrated approach is incorporated into the curriculum of the family practitioners to be trained.*
- *Treatment prior to the visit should be assessed systematically, since it has consequences for further treatment.*

The personnel of the health facilities visited have both curative and preventive duties. One of their preventive tasks is immunization and its promotion, including both the primary immunization of infants and children, as well as the diphtheria immunization of older children and adults due to the recent diphtheria outbreaks in the region. Table 5 summarizes findings regarding the observed attitudes and actions of the HWs related to immunization.

**Table 5 Screening of vaccination status of the child**

(Health Facility Assessment CAIDP March 1998)

	Ferghana n=162			Osh n=160			Zhambul n=191		
	1996 n=162	T n=164	U n=162	1996 n=160	T n=144	U n=125	1996 n=191	T n=153	U n=143
<b>Percent of all children that had their vaccination status checked</b>	85%	95%	96%	41%	36%	12%	27%	29%	23%
<b>Number of children found not up-to-date according to vaccination record</b>	47	2	8	32	19	20	43	26	23
<b>Number of not up-to-date children had their vaccination status checked</b>	43	1	8	10	4	2	12	6	3
<b>Number of not up-to-date children vaccinated or referred for vaccination</b>	28	0	2	3	2	1	3	2	1
<b>Percent of all caretakers that had their vaccination status checked</b>	29%	30%	38%	0%	1%	1%	33%	<1%	<1%

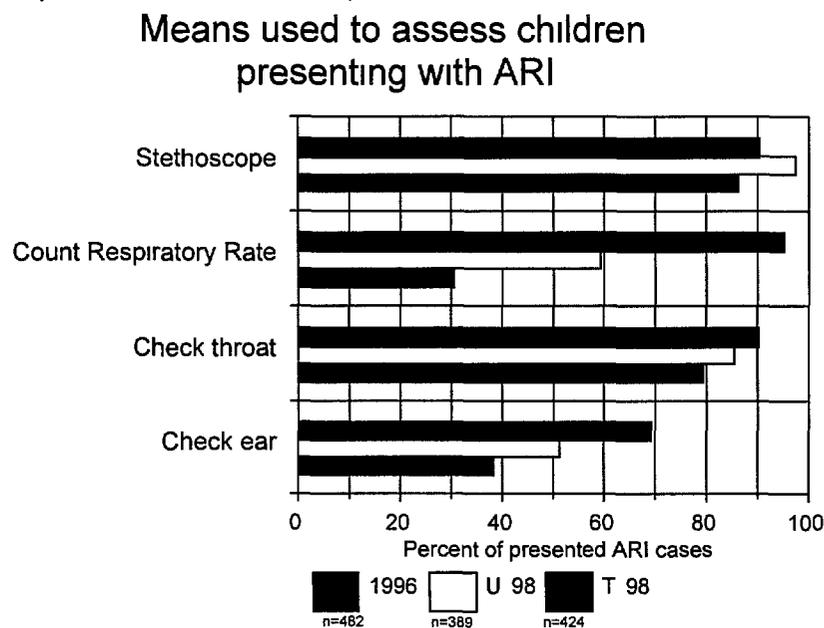
While the child's vaccination status was checked in the majority of cases in Ferghana, less attention was given to the caretaker's diphtheria vaccination status. In both of the other oblasts, neither the child's nor the caretaker's vaccination status was systematically addressed. It also seems that when a child is found to be not up-to-date, few are vaccinated or referred for

vaccination This suggests that missed opportunities for vaccination are occurring in all three oblasts that could be avoided

- *Systematically assessing the child's immunization status shows the same pattern as in 1996, the ARI case management course did not change it Introduction of IMCI could offer an opportunity to mend this, however, changing the attitude of clinical health workers towards vaccination has proven to be difficult in many countries*

In all three oblasts, trained health workers use counting the respiratory rate (RR) as a diagnostic means significantly more than untrained health workers, or than the health workers observed in November 1996 (Fig 7) Although one would like to see the ears checked more systematically for children with ARI seen by a trained HW, it is done significantly more frequently by the trained HW than by the untrained and than by the HW observed in 1996

**Figure 7**  
(Health Facility Assessment, CAIDP March 1998)



- *The counting of the respiratory rate as diagnostic means for pneumonia seems to have been well integrated into the practice of health workers of all levels in all three oblasts Even in Zhambul where the theoretical concept of using RR was known through ARI program courses before the clinical ARI training was implemented trained health workers show a significant higher application rate than untrained health workers*
- *Even untrained health workers seem to have changed their clinical practice to adhere more closely to the recommended algorithm Several factors can play a role here In all three oblasts wall charts displaying the WHO algorithm have been distributed to all*

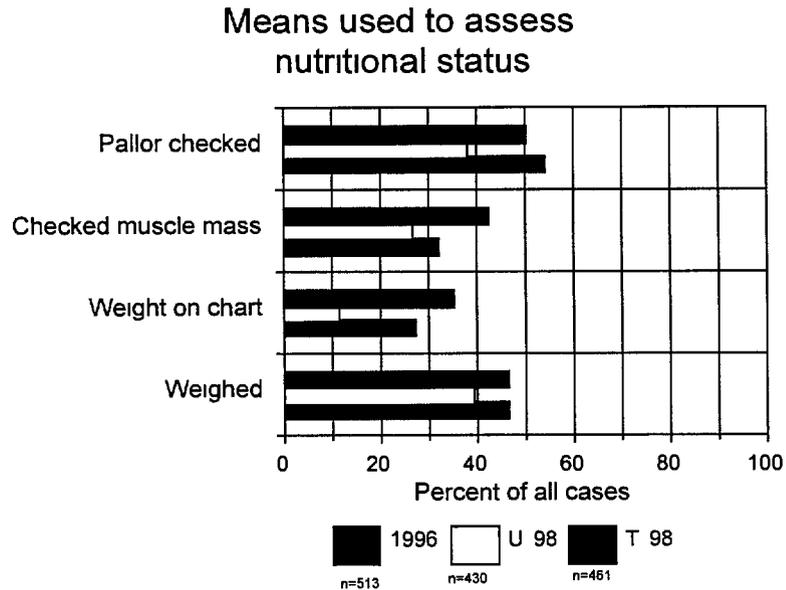
*facilities, which made at least the theoretical concept available to all health workers. We would be hesitant to conclude that distributing the theoretical information alone would provoke this change. It did not in Zhambul, where the same information was available (though not always in the local language) prior to the implementation of the clinical case management course. Particularly physicians, and to a lesser degree all other health workers, attend monthly seminars with colleagues at rayon and/or oblast level. These seminars are a good opportunity to exchange new experiences, which could explain improved performance in untrained health workers. Also supervisors trained in clinical case management supervise both trained and untrained HW and will consciously or unconsciously, introduce the new concepts during supervision visits. This, in combination with the general availability of the wall charts, may explain some of the differences in performance between 1996 and 1998 for untrained HWs. The recommended first-line drug for treatment of pneumonia was more frequently available in facilities than in 1996. The fact that the treatment recommended in the algorithm was actually available may enhance adherence to the algorithm. Whenever a new concept is introduced, one always has a pool of individuals that will accept and promote it, even if they were not formally introduced to the concept.*

Very few diarrhea cases were seen and we do not know whether the HWs that saw them followed the diarrheal disease clinical course management. Of the few cases seen, not all cases had their hydration status checked, nor were all cases assessed for blood in the stools.

- *The number of diarrhea cases included in the survey was too small to draw conclusions. However, findings may indicate that case management may be improved by extending clinical case management to all health workers, and by adequate supervision of the trained health workers.*
- *The drawbacks of the vertical approach—separate training for separate disease clusters—will be aggravated in settings with clear cut seasonality of the diseases, as is the case in the CAR for ARI and DD. Introduction of the IMCI algorithm could counter at least partly the tendency to disregard adequate DD management during the ARI season (e.g., the “closed” ORT corners).*

Regular assessment of the nutritional status is important for all children, but certainly so for those living in countries that are in the process of economic transition. A sick child visit should be an opportunity to assess the child's general nutritional status, as well as to assess possible micro-nutrient deficiencies known to exist in the country, i.e., anemia for the CAR.

**Figure 8**  
(Health Facility Assessment CAIDP March 1998)



Not all children were weighed (**Fig 8**) and, except for Ferghana, only a minority of the children had their weight plotted on a growth chart. Also except for Ferghana, pallor as a sign of anaemia was not systematically assessed, nor was the general nutritional status systematically assessed (muscle mass checked)

- *Systematic assessment of nutritional status should be included in all training concerned with sick children. Reports show that while wasting (acute under-nutrition) is not a major problem in the region, stunting (growth retardation) probably is, as are deficiencies in several micronutrients (iron, vitamin C, iodine, etc.)*

#### **D Classification of Illness**

National treatment guidelines do not exist as independent references, but are included in *prikazi* (policy guidelines), often as annexes. During the Soviet era, these *prikazi* were mostly uniform in the countries, although not always in line with the WHO recommendations. Since the emergence of the NIS, many *prikazi* have been amended, often to bring them closer to WHO recommendations. A seminar with national- and oblast-level authorities in 1997 addressed the perceived divergence of existing *prikazi* from the WHO guidelines. This seminar concluded that

policies and guidelines were consistent enough with international standards to allow the distribution of the WHO algorithms for ARI and DD standard case management<sup>1</sup>

Most health facilities had a copy of some of the *prikazi*, though these were often locked away for safe keeping. Copies of all necessary *prikazi* were available as reference to the clinical personnel in only a minority of the cases. With exception of the untrained HW in Osh, almost all HWs had the UNICEF-WHO standard case management wall charts for ARI and DD exhibited in the consultation room. These wall charts were distributed to all facilities in Ferghana and Zhambul, but only to the facilities with a trained health worker in Osh.

Although the original intention was to include validation of the HWs diagnosis by a trained supervisor (revised questionnaires and participant guidelines), this validation was not carried out during the data collection. Because of this, the quality of case management could not be assessed. HWs using the recommended techniques for screening, assessment, and clinical examination could still misinterpret their findings and classify children incorrectly. Although other indicators (application of recommended techniques, adherence to recommended standard treatment, adherence to recommended messages for home care to the caretaker) may indirectly suggest improvement of the quality of case management, absence of the validation by the surveyor leaves us without direct evaluation of the change in quality of case management.

- *The supervision tools introduced through CAIDP (see Appendix C) require validation of a HW's diagnosis as part of the routine supervision of case management. Supervisory reports containing details of case management practices were only available at the rayon or lower level, which made it impossible to collect them and include them as an additional indicator of change in quality of case management within the time limits of the survey. It is highly recommended that these reports be consulted and this information abstracted. If funding permits, BASICS NTOs should consider this activity as a priority before close-out.*

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<sup>1</sup> BASICS report N18 Salgado, Rene 1997 *Recommendations of a Workshop on the Implementation of Diarrheal Disease and Acute Respiratory Infections Programs in the Central Asian Republics* 000-KZ-02-014

## **E Treatment<sup>2</sup>**

### **1 Rationale of obtained information<sup>3</sup>**

#### **Average number of drugs prescribed per curative outpatient encounter**

Both too high and too low an average number prescribed can indicate poor prescribing practices. The poor practices can be explained by lack of pharmaceutical information and education or by chronic lack of supplies that force health workers to prescribe what is available. Too high an average number prescribed can interfere with patient compliance if drugs have to be bought, only some of them may be bought. Too many drugs in one prescription may confuse the patient, who may decide not to buy the most needed/effective drug or not remember how to administer the most important drug.

#### **Percentage of drugs prescribed by the generic name**

It is easier to control drug costs in the health care system if health workers prescribe by generic names instead of brand names. Brand name products are in general more expensive than generic products (we counted as generic, drugs listed under the product name in Mashkovski's reference work<sup>4</sup>). Generic substitution, an issue in many countries and an additional burden for dispensers, is avoided if health workers prescribe by generic names. In tightly and centrally controlled health systems, generic prescribing is usually adhered to. An undesired side-effect of increased privatization of pharmaceutical outlets and increased accessibility to the world market may be a corresponding decrease in generic prescribing.

#### **Percentage of encounters prescribed injections**

The increasing importance of AIDS and hepatitis B as public health problems provides a good reason to assess the extent of injectable therapies and promote their rational use. Injections are essential for some therapies, but overuse, which is common, wastes scarce resources, since injections are in general more expensive than their oral equivalents and expose patients to risks for adverse reactions and disease. Both of these outcomes are less likely with oral therapies.

#### **Percentage of encounters that result in prescribed antibiotics**

Antibiotics, like injections, are costly therapies and are frequently overused. Antibiotics have precise indications where epidemiological or laboratory evidence suggest a bacterial infectious agent. In absence of this evidence, use of antibiotics is not only ineffective and a waste of resources, but it can also result in resistance of commonly prevalent bacteria. Health care staff

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<sup>2</sup> Detailed tables obtained through PASS software of the prescription practices of trained and untrained health workers in each of the three oblasts is given in Appendix A.

<sup>3</sup> Adapted from *Rapid Pharmaceutical Management Assessment: An Indicator-based Approach*, Rational Pharmaceutical Management, Arlington & Latin American and Caribbean Health and Nutrition Sustainability Project, Bethesda, 1995.

<sup>4</sup> Mashkovski, MD. *Pharmaceutical remedies: a manual for physicians*. Moscow, Russia, 1994.

and those that dispense and/or sell antibiotics should be aware of the detrimental consequences of unjustified use of antibiotics. In countries where policies regulate the sale of antibiotics with a prescription, compliance should be enforced. Antibiotic resistance of common infections has rendered formerly useful drugs ineffective. This is partly caused by indiscriminate, empirical and uninformed prescribing practices and other forms of overuse. This is especially serious when national capacity for laboratory monitoring of antimicrobial sensitivity is limited or nonexistent.

## 2 Prescription practices

Table 6 summarizes the findings of the survey regarding prescribed treatments. The collected data contained all recommended treatments, including pharmaceuticals, as well as different home- or traditional treatments. We include the latter in the table under the “**average number of items**”. The more treatments prescribed, the more difficult for the caretaker to remember how to apply each one correctly. Only items for sale in pharmacies or drugstores are included under “**average number of drugs**”. The average number of items prescribed is generally higher than in 1996. This has been attributed to a great extent to the more experienced data collectors used for the 1998 survey. Except for Zhambul, where the 1996 survey showed a relatively acceptable average number of drugs, the average number of drugs is lower both for trained and untrained. Even the unchanged figures for Zhambul may reflect improved prescription practices, if the oral information claiming increased availability of drugs in the oblast proves correct.

More than half of all drugs were prescribed under their generic name<sup>5</sup>. Both in Zhambul and Ferghana a smaller proportion of drugs were prescribed under their generic name than in 1996. This may be due to the reportedly increased availability of different brands on the local private market. Osh was the only oblast where many drugs were readily available in 1996.

In Ferghana and Zhambul the number of cases that had an antibiotic prescribed matches closely with the number that probably needed an antibiotic, if we accept the diagnosis of the health worker as exact. This is less true in Osh, although the proportion of children that had an antibiotic prescribed was far lower than in 1996.

There is a clear increase in rational prescribing for children diagnosed with non-pneumonia ARI, as is reflected in Table 7, overuse of antibiotics for upper respiratory tract infections was reduced in the three oblasts. Still, in Osh and Zhambul, more than 10 percent of the trained health workers gave antibiotics to children with simple ARI, and not all children with pneumonia received an antibiotic. Children with pneumonia were sometimes not given antibiotics because they were referred immediately to the hospital.

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<sup>5</sup> Generic name= name under which it is listed in Mashkowski's reference work

**Table 6 Prescription practices—all cases**

(Health Facility Assessment CAIDP March 1998)

	Ferghana			Osh			Zhambul			Total		
	1996 n=162	T n=164	U n=162	1996 n=160	T n=144	U n=125	1996 n=191	T n=153	U n=143	1996 n=513	T n=461	U n=430
Average number of items prescribed per case*	3.7	5.5	6.8	2.3	4.6	3.6	1.9	4.0	4.6	2.59	4.72	5.14
Average number of drugs prescribed per case	3.5	1.5	2.6	2.1	1.8	1.5	1.8	1.7	1.8	2.3	1.7	2.0
% of drugs prescribed under generic name**	81%	71%	63%	61%	76%	69%	78%	56%	55%	74%	68%	62%
% of patients that had an injection prescribed	28%	9%	16%	20%	3%	13%	10%	13%	11%	19%	8%	13%
% of patients that had an antibiotic prescribed	66%	16%	10%	69%	33%	35%	55%	32%	32%	63%	27%	25%
% of patients that could need antibiotic***	-	15%	6%	-	22%	12%	-	31%	31%	-	23%	16%

\* Several treatments contained 'home treatments' which could not be included in the pharmaceutical cost analysis

\*\* Refers to total number of drugs (pharmaceuticals) prescribed for all problems that are also included in the cost analysis

\*\*\* According to the diagnosis made by the health worker

**Table 7 Children diagnosed with ARI who had an antibiotic prescribed  
(percent of diagnosed cases)**

(Health Facility Assessment, CAIDP March 1998)

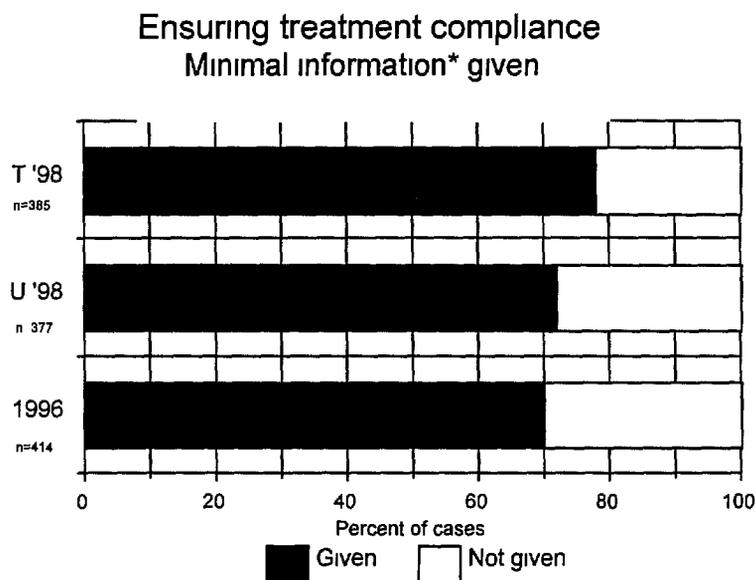
	Ferghana			Osh			Zhambul			Total		
	1996 n=130	T n=156	U n=160	1996 n=134	T n=136	U n=110	1996 n=159	T n=142	U n=134	1996 n=423	T n=328	U n=349
Non-pneumonia	66	1	6	73	16	24	59	16	22	66	11	16
Pneumonia	17	100	83	50	80	66	63	88	88	66	90	80

- *In all three oblasts prescription of drugs was remarkably and consistently more rational than in November 1996 a little less so in Osh than in the other two oblast but we found less drugs per case, less unnecessary antibiotics, and less injections in the prescriptions*

Compliance with the recommended treatment becomes very difficult if the minimal information to ensure a full course of treatment is not given to the caretaker. This minimal information includes four topics: what drug to give (including whether it is oral, injectable, topical), the amount to give per dose, how many times a day to give the dose, and for how many days the treatment should be continued.

This minimal treatment information (Fig 9) was given in more than two thirds of the medications prescribed in all three oblasts in 1996. Minimal treatment information was given a little more frequently in 1998 by trained health workers than by untrained health workers, particularly in Osh. In most cases, the missing information was the length of treatment.

**Figure 9**  
(Health Facility Assessment CAIDP March 1998)



## F Cost of the Visits

Assessing the actual total cost of a visit is difficult

- the individual patient may pay directly some costs, the health system may pay other costs
- the data sources are often difficultly accessible and not always reliable
- data are often available in compounded form (e.g., different types of visits mixed)

- amounts paid on one day may partly cover future visits (e.g., cost of patient record book)
- some costs are difficult to estimate (e.g., cost of time of caretaker coming with the child)

More than 50 percent of the health workers in Ferghana and Osh claim that patients have to pay something for sick child visits, while in Zhambul, less than 20 percent of patients have to pay. The most frequently mentioned cost is for forms and registers. Whether the HWs' answers reflect reality is questionable. If they make patients pay for services that are supposed to be free of charge, they will be unlikely to mention this in a survey conducted by health officials.

Caretakers claimed they actually paid or expected to pay something for the visit much less often than in 1996 (Table 8). In all three oblasts, the main expected cost mentioned by the caretakers was for the recommended medicine—close to half of the caretakers in Osh and Zhambul and up to a third of the caretakers in Ferghana.

Cost of treatment depends mainly on the actual cost of the available drugs and the cost of the prescribed drugs for an episode. The actual cost of available drugs depends largely on government procurement rules and regulations, import regulations, foreign exchange regulations, and price regulations (i.e., ease of access to the world market for those that import/produce pharmaceuticals). The actual cost of a prescription depends also on the adherence to rational prescription principles of individual health workers and dispensers. Clinical case management courses may promote adherence to standard treatment and consequently to approximating the optimal cost per treatment.

#### **Listing of the most costly drugs prescribed**

Even when a large number of different drugs are prescribed, a relative few of these drugs account for 90 percent or more of the total value of all prescribed drugs in a sample, either due to a very high unit cost or to the large quantities prescribed or to a combination of both. In general, if prescribing practices are rational, only very important and essential drugs should be found among the most costly drugs. If specific health problems are studied, only drugs with proven therapeutic value for the problem should be found. Table 9 summarizes the findings related to this indicator and shows potential savings if HWs prescribe antibiotics rationally. Some savings could be made through abstaining from prescribing unnecessary drugs in all three oblasts, but considerable savings could be made in Ferghana for both trained and untrained HWs and in Zhambul for trained HWs.

**Table 8 Cost of visits as cited by caretakers—all cases\***

(Health Facility Assessment CAIDP March 1998)

	Ferghana			Osh			Zhambul		
	1996 n=162	T n=165	U n=161	1996 n=160	T n=130	U n=135	1996 n=191	T n=153	U n=143
<b>Caretaker claimed to pay something</b>	100%	7%	34%	96%	13%	45%	94%	42%	52%
<b>% of caretakers that claimed to pay for transport</b>	1%	1%	2%	4%	4%	1%	3%	3%	3%
<b>% of caretakers that claimed to pay for service</b>	-	-	-	-	1%	-	-	1%	1%
<b>% of caretakers that claimed to pay for drugs</b>	81%	6%	32%	65%	55%	45%	63%	41%	49%
<b>Average (USD) paid for drugs by those who paid</b>	-	1 12	1 05	-	71	1 05	-	2 31	2 85

\* More detailed information by oblast in Appendix I

**Table 9 Most Costly Drugs Prescribed—all cases\***

(Health Facility Assessment CAIDP March 1998)

	Ferghana			Osh			Zhambul		
	1996 n=162	T n=164	U n=162	1996 n=160	T n=144	U n=125	1996 n=191	T n=153	U n=143
<b>Number of drugs within the Most Costly Drugs</b>	31	13	21	10	11	7	18	14	12
<b>% of injectables</b>	29%	19%	19%	4%	4%	1%	3%	3%	3%
<b>% of antibiotics</b>	32%	38%	14%	-	1%	-	-	1%	1%
<b>% prescribed for non-pneumonia ARI or diarrhea</b>	64%	82%	89%	65%	55%	45%	63%	41%	49%
<b>Total cost (USD) of Most Costly Drugs Prescribed</b>	499 28	110 45	194 10	302 29	143 21	174 28	307 3	150 56	229 3
<b>Total cost of unnecessary drugs prescribed</b>	159 57	35 28	100 52	115 27	14 92	9 03	38 42	20 80	229 30
<b>% of total cost potentially saved if unnecessary drugs not prescribed</b>	32%	32%	52%	38%	10%	5%	13%	14%	52%

\* More detailed information by oblast in Appendix A

**Table 10 Average cost of treatment by type of health problem**

(Health Facility Assessment CAIDP March 1998)

	Ferghana			Osh			Zhambul		
	1996 n=130	T n=119	U n=147	1996 n=134	T n=99	U n=82	1996 n=159	T n=110	U n=120
<b>For non-pneumonia ARI</b>									
Average cost of treatment in sample	2 79	0 47	1 01	1 83	0 75	1 19	1 66	1 02	1 79
Average cost of treatment in IMCI protocol	0 11	0 30	0 30	0 11	1 00	1 00	0 11	0 68	0 68
Possible savings (% of Average cost of treatment in sample)	96%	36%	70%	93%	0%	16%	93%	33%	62%
<b>For pneumonia ARI</b>									
Average cost of treatment in sample	5 57	2 04	2 34	14 66	3 26	4 24	5 05	3 10	2 42
Average cost of treatment in IMCI protocol	2 48	3 49	3 49	1 80	2 38	2 38	2 07	2 99	2 99
Possible savings (% of Average cost of treatment in sample)	55%	0%	0%	88%	27%	44%	59%	4%	0%
<b>For diarrhea</b>									
Average cost of treatment in sample	3 22	0 67	1 10	3 42	1 23	3 71	1 23	-	1 17
Average cost of treatment in IMCI protocol	1 00	0 82	0 82	1 00	1 99	1 99	1 00	-	1 46
Possible savings (% of Average cost of treatment in sample)	69%	0%	25%	71%	0%	46%	19%	-	0%

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### **Comparison of actual average cost per treatment with the cost of the standard treatment**

Frequently costs could be reduced if health workers adhered strictly to recommended standard treatment guidelines for type of drugs, quantities to give, and length of treatment. For our exercise, we compared the actual average cost per treatment for ARI and DD with the cost of the recommended standard treatment, applying the local price for each drug to each treatment. Table 10 lists the average cost of treatment in the sample for selected diseases and potential savings through adhering to recommended treatment.

The closer the average cost of the treatment in the sample is to the cost of the IMCI-recommended treatment, the most likely more HWs tend to prescribe the recommended standard treatment. The observed changes for non-pneumonia ARI as compared with pneumonia ARI cases are the most dramatic.

- *The average cost of the treatment for simple ARI in the sample is significantly closer to the cost of the IMCI-recommended treatment for trained and untrained health workers in 1998 when compared to 1996. The average cost of treatment for simple ARI in the sample of trained health workers is significantly closer to the cost of the IMCI-recommended treatment than the average cost of treatment for simple ARI in the sample of untrained health workers.*
- *The present efforts of making essential pharmaceuticals more readily available through privatization of pharmaceutical wholesalers and retailers and opening access to the international pharmaceutical market should be continued, along with regulation on drug licensing and quality control of pharmaceuticals to make low-cost essential drugs available nationwide.*
- *Essential drug lists containing the drugs of the recommended standard treatment schedules should be developed where they do not exist and be more aggressively promoted where they have been developed.*

### **G Knowledge of the Health Worker**

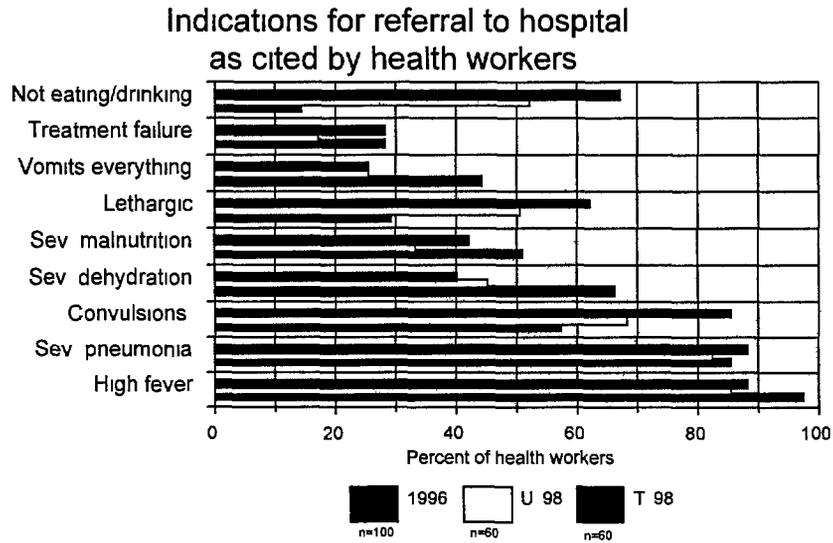
General signs for referral to a hospital were well known to most of the health workers in 1996 (**Fig 10**). Some more specific signs that were not frequently mentioned in 1996 were more frequently mentioned in the present survey, e.g., child is unable to eat/drink/breastfeed, child is lethargic/difficult to wake, child has convulsions. Particularly for “severe pneumonia,” health workers listed specific signs of severe pneumonia instead of just mentioning the general term “severe pneumonia,” as in 1996.

- *Training in ARI case management has reinforced the knowledge of specific signs for referral to the hospital. Health workers untrained in ARI case management do better than in 1996 for some of these signs, probably because this group contains a number of HWs that were trained in DD clinical case management where the same signs were taught.*

*Also, some may have been influenced by trained colleagues and/or trained supervisors and/or distributed wall charts*

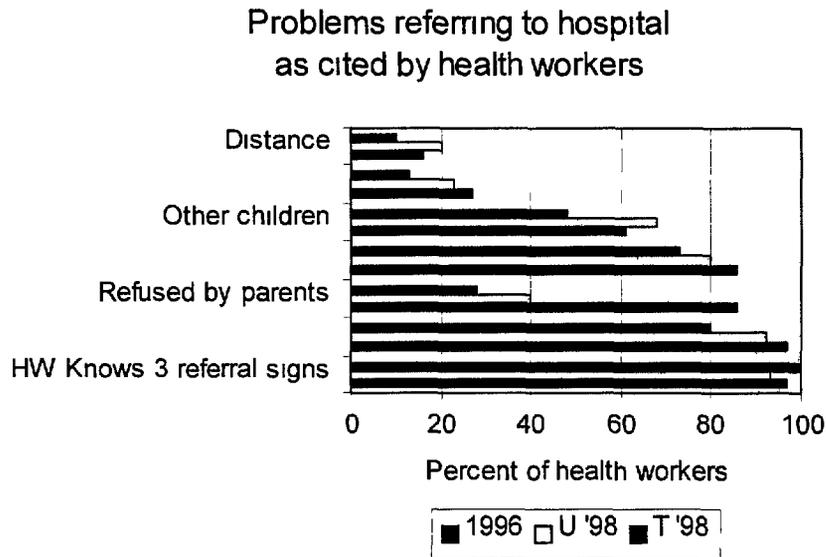
**Figure 10**

(Health Facility Assessment CAIDP March 1998)



**Figure 11**

(Health Facility Assessment CAIDP March 1998)



Ninety percent or more of all health workers mentioned at least three of the signs for referral (**Fig 10**), however, a large majority mentioned having been unable to refer children to the hospital in the past (**Fig 11**). The main reason for being unable to refer is refusal by the parents or other family members, which seems mostly linked to economic constraints: no money, no or inadequate transport, no one to look after the other children.

- *With outpatient facilities that are readily accessible to caretakers, and health workers that have sufficient knowledge of when to refer a child, it is important to have a health structure that allows for easy referral, with minimal barriers for the parents to follow the health worker's advice. Present efforts in health reform should take the existing barriers into consideration and propose ways to alleviate them.*

Only a few untrained HWs claimed not to have had any training related to child health over the last 12 months, many HWs had received more than one such training. For all except one of the trained HWs, the last training included clinical hands-on practice (most probably the ARI clinical case management training). This was also the case for more than half of the HWs untrained in ARI clinical case management—training for this group could have included the DD clinical case management course during the diarrhea season in 1997.

- *There may have been problems defining "clinical practice." According to the survey supervisors, some answers, particularly those of the untrained HWs, included "clinical practice" when a clinical case was discussed. In addition, the survey does not discuss details of the quality of the clinical component of the training, but it is very important to ensure this quality to the extent possible. Some parameters are easy to assess: number of participants per facilitator, number of clinical cases managed per participant per training session, availability of training manuals, availability of manuals (or at least key chapters) and communication aids in the local language. It is ominous that the oblast where these parameters were neglected (too many participants per facilitator, too few cases managed per participant per training, not all participants received a manual, all materials only available in Russian) shows consistently less progress on all measures.*

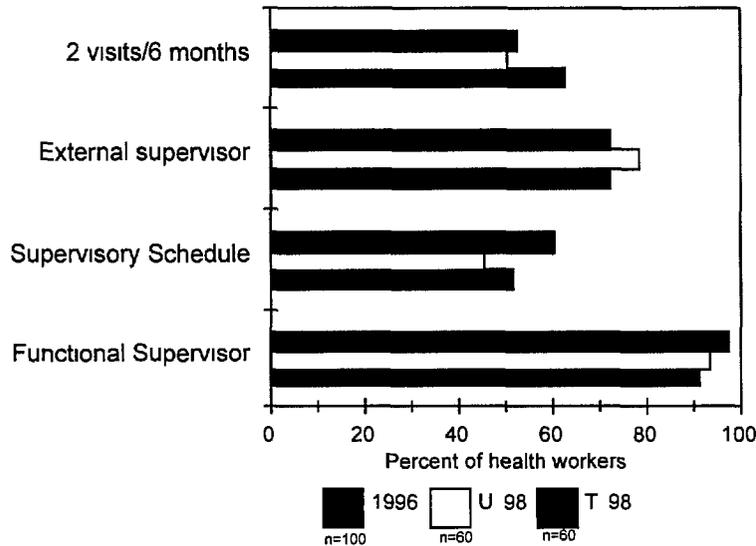
## **H Supervision**

Most health workers claimed to have a functioning supervisor, but little more than half could give a schedule for supervision. For two-thirds or more of the health workers, the supervisor did not work in the same facility as the health worker.

**Figure 12**

(Health Facility Assessment CAIDP March 1998)

**Supervision of health workers**



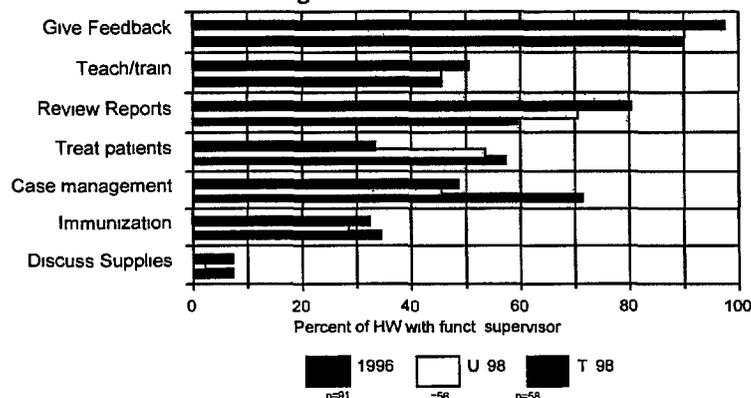
There seems to be a decline in the frequency of supervisory visits, compared with November 1996 in general, fewer health workers with a functioning supervisor claimed to have received at least two visits by the supervisor in the last six months. Lack of readily available transport was reported to be the main reason for infrequent supervision. Anecdotal reports indicate that this trend would continue, since less and less funding would be available to the public system.

- *It is encouraging that most health workers can identify a specific supervisor and that supervisory visits are actually taking place. Under the present economic restraints, care should be taken not to lose what has been achieved. There is a trend towards less frequent supervision. With health reforms going ahead, care should be taken to identify entities and persons that should be responsible for ensuring quality of care. This will probably require a clear definition of responsibilities for governmental and "private" professional organizations.*

**Figure 13**

(Health Facility Assessment, CAIDP March 1998)

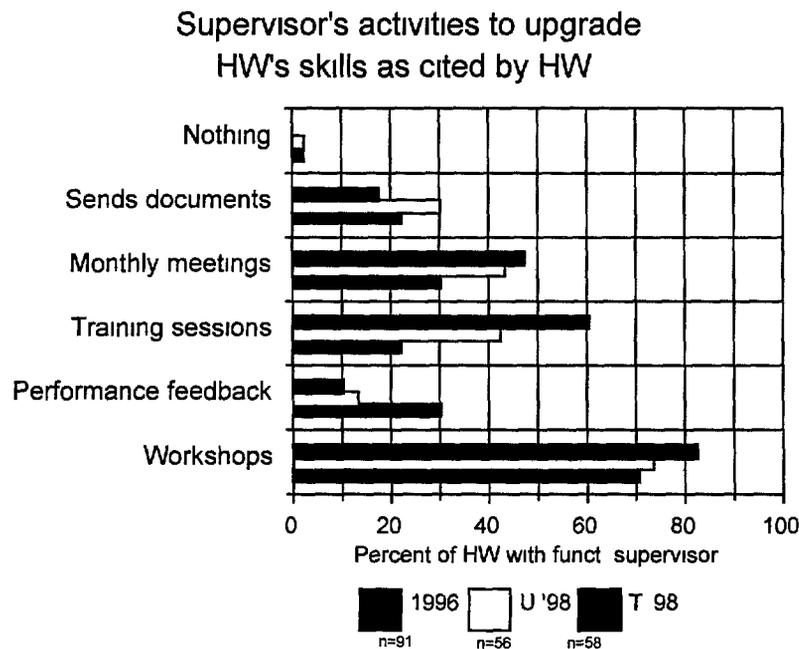
**Activities by supervisor during last visit**



Activities of the supervisor to a great extent involve case management, treatment, report reviewing, and training or teaching (Fig 13) Although the supervisory checklists developed during the CAIDP training-of-trainers workshop clearly require observation of case management, it is still unclear to what extent the supervisor actually observes the health worker at work In 1996, it was clear that most of the reference to “case management” meant that the supervisor did case management at the facility, instead of observing the case management practices It was suggested by the survey supervisors that the drop in the frequency of case management observation and of treating patients reflects a more correct interpretation of this term by the surveyors Almost all health workers received feedback on the supervisory visit, mostly oral

An important task of a supervisor is to upgrade the skills of the health worker on a regular basis Figure 14 demonstrates the most common ways cited by the HWs Workshops were the most important way to upgrade health workers’ skills in all three oblasts A minority of HWs claimed that feedback on their own performance was used as a way to upgrade their skills In Ferghana and Osh, monthly meetings and training sessions were mentioned by more than half of the HWs, but this did not occur in Zhambul

**Figure 14**  
(Health Facility Assessment CAIDP March 1998)



- *The survey results do not allow an assessment of the extent the resolutions of the workshop on supervision<sup>6</sup> have been pursued or implemented, nor to what extent the*

<sup>6</sup> See BASICS Report O12 Salgado, Rene 1997 *A Statement on Supervision of CDD/ARI Programs in the Central Asian Republics Proceedings from a Workshop on Supervision*

*checklists for supervision developed during the training of master trainers have been put to use It will be important to review the quality of supervisory visits provided*

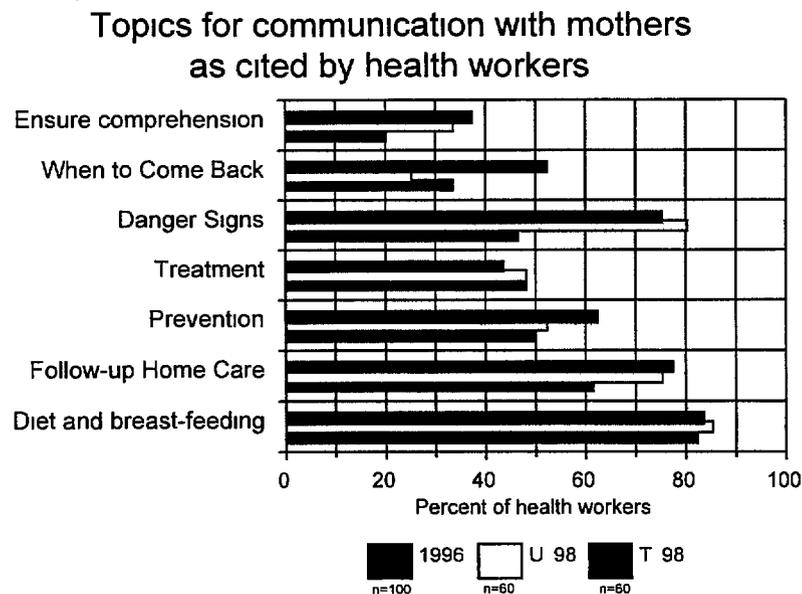
Monthly morbidity, EPI, and MCH reports are produced in all three oblasts and are generally up-to-date, even when preprinted forms are no longer available The HWs use the reports mostly for assessing targets and/or epidemiological surveillance It is noteworthy that even while many facilities did not have preprinted report forms available, most facilities had the essential reports updated in handwritten form

- *Absence of preprinted registration and reporting forms burdens the health workers, who have to duplicate the forms manually on blank sheets of paper It is laudable that most of them do so Planned interventions should take into account that the health system currently lacks the funds to assure necessary stocks of preprinted forms, except where costs are covered at least partly, by outside funding*

## I Interpersonal Communication

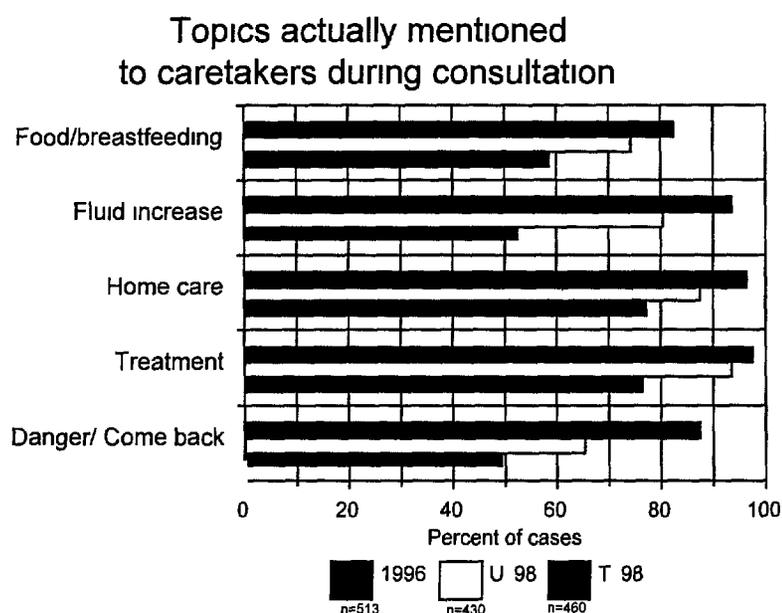
All interviewed health workers mentioned at least one item that should be a topic of communication with caretakers Very few HWS thought communication with mothers was not their job The most frequently mentioned communication topics (**Fig 15**) were related to diet and feeding, home case management of the sick child, communicating danger signs, and giving advice on prevention of diseases Advice on when to come back with the child was seen as important by more than half of the health workers only in Ferghana, and trained health workers mentioned it more frequently than untrained Only a minority mentioned that it was their job to ensure that caretakers had understood the given messages, but significantly more did in 1998 than in 1996

**Figure 15**  
(Health Facility Assessment CAIDP March 1998)



As mentioned before, the survey tools are not designed to evaluate the quality of the communication. For example, during observation of the consultation, topics were ticked off as “communicated” when anything related to the topic was mentioned (Fig 16). Therefore, survey results indicating that more than half of the caretakers were advised to continue feeding the sick child do not provide information about how elaborately or appropriately this communication was done. However, significantly more caretakers of children seen by trained health workers were given three danger signs that should urge them to come back to the facility than was the case in 1996, or for those whose child was seen by an untrained health worker. The same is true for advice on the importance of maintaining or increasing liquid intake, on continuing to feed or breastfeed the child, and home case management.

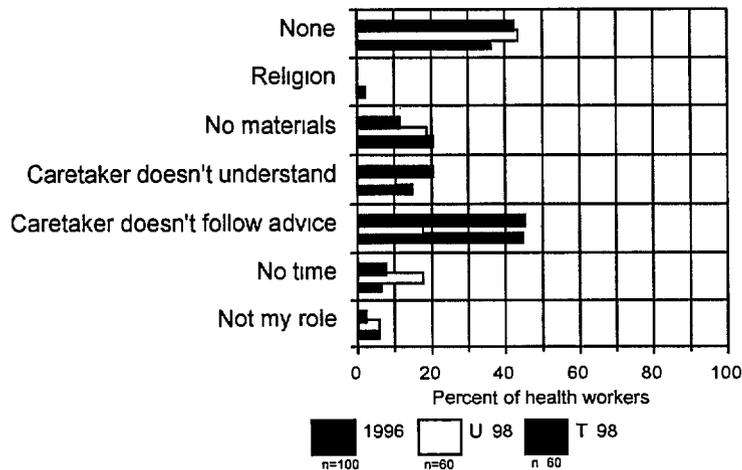
**Figure 16**  
(Health Facility Assessment CAIDP March 1998)



The next figure (Fig 17) illustrates difficulties reported by health workers in explaining treatment to those caretakers whose child had oral medicine prescribed.

**Figure 17**  
(Health Facility Assessment CAIDP March 1998)

**Difficulties communicating with caretakers as cited by health workers**

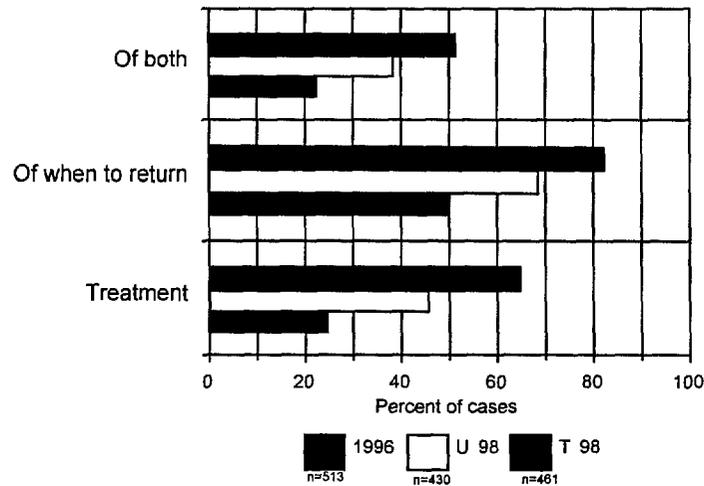


Many interviewed health workers in Ferghana and Zhambul thought that they did not have any difficulty communicating with mothers. This does not necessarily imply that the quality of communication is high, and whether this is the case for the HWs that gave this answer in the survey needs to be investigated further. The main difficulties described related to the HWs' perceptions of the caretakers "they don't understand," "they don't follow advice anyway." In Osh, a considerable number of health workers claimed not to have adequate materials for communication.

A higher proportion of caretakers of children had their comprehension of how to give treatment and when to return checked than was previously noted, trained health workers were more (Fig 18) likely to verify comprehension than untrained health workers.

**Figure 18**  
(Health Facility Assessment CAIDP March 1998)

**Communication caretaker comprehension  
checked by health worker**



- *The clinical case management course has positively influenced the actual communication skills of the HW important topics are communicated more frequently in 1998 than in 1996, and more frequently in the trained sample than in the untrained sample The same is true for checking the comprehension of important messages by the caretaker*

**J Immunization**

At the time of the visit, almost all facilities in Ferghana and Osh and more than half of the facilities in Zhambul had a refrigerator, and most of these appliances were in reasonable general condition (no visible rusting, tightly closing door seal) Those facilities that did not have a refrigerator had cold boxes and ice packs, enabling them to carry out immunizations with vaccine collected at a referral facility One-fourth of the refrigerators in Osh and up to two-thirds in Zhambul were not working at the time of the visit, mainly due to power cuts The majority of the refrigerators in Osh that were not working still contained vaccine

- *All three countries are in the process of adapting or renewing their cold chain The lack of electricity should be taken into account when developing an adequate cold chain strategy and selecting new cold chain equipment For example, in regions with poor power supplies it may make sense to consider greater reliance on cold boxes and switching to immunization sessions once or twice a week If new refrigerators are bought, hold over times as long as possible should be considered This way, 'safe' facilities could actually store the vaccines for 'unsafe' facilities, which could be supplied once or twice a week with vaccine*

Not all refrigerators contained a thermometer in good working order, nor did all refrigerators have an updated temperature chart. In all three oblasts, temperatures outside the recommended 0-8° Celsius were found either on the thermometer or on the temperature chart. In some facilities, discrepancies between chart and thermometer were found. In Zhambul, frozen vials of DPT/DT or Td were found in at least one facility, and in Osh, expired vaccine was found in a refrigerator.

- *There are problems with management of the cold chain. Results indicate that, aside from faulty electricity supplies, there is probably room for improvement. A more specific and detailed assessment is needed before specific interventions for improvement can be contemplated.*

With few exceptions, health workers could produce updated immunization registers. In Osh and Zhambul, fewer facilities than in 1996 offered immunization on all operating days and fewer offered immunization more than once a week. Almost all facilities claimed to offer all antigens except BCG (which is usually administered in the maternities) at all immunization sessions. In Ferghana, not all facilities are supposed to have vaccine in stock all the time. Few facilities in Osh and Zhambul had measles vaccine, polio vaccine, and DPT in stock at the day of the visit. A stock of preprinted vaccination report forms and child immunization forms were available in less than half of the facilities, even in Osh, where new monthly summary reporting sheets had been introduced recently. Most facilities had one preprinted example and manually copied the reports actually sent, including Osh, for the newly introduced monthly reporting form.

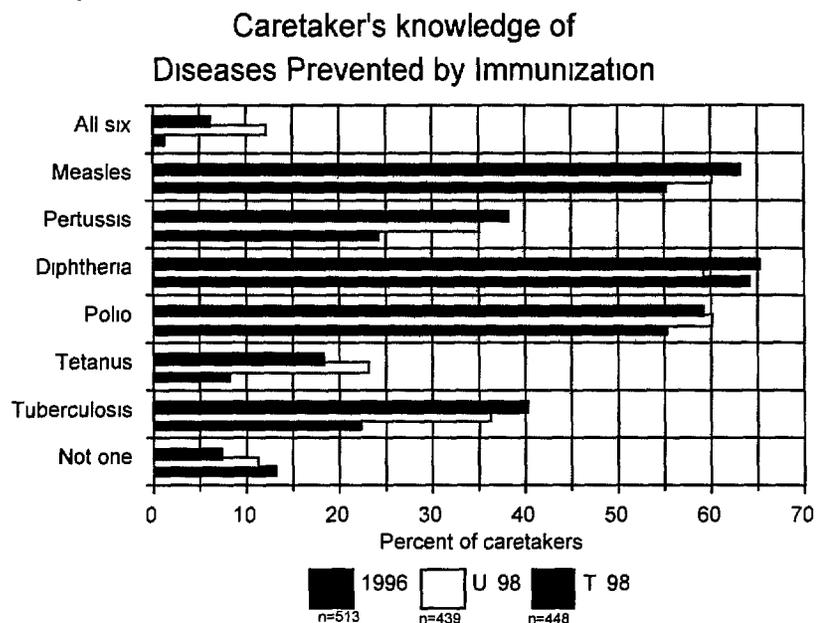
- *Findings suggest possible stock-outs of vaccine on days immunization is offered, which can result in missed opportunities. The reasons for these stock-outs should be investigated and addressed. If they cannot be mended, alternative strategies (e.g., fixed immunization days) should be looked into.*

More than 80 percent of all health workers knew their national primary immunization schedule correctly. Caretakers cited health workers to be the main source of information on immunization.

- *Knowledge by the health workers of the national primary immunization schedule is very good. It is all the more a pity that health workers fail to a great extent to check the immunization status of every child on every visit or to refer explicitly the children found not up-to-date to the next immunization session. Missed opportunities for immunization could be reduced if all children's immunization status were checked and those not up-to-date were specifically referred for immunization.*

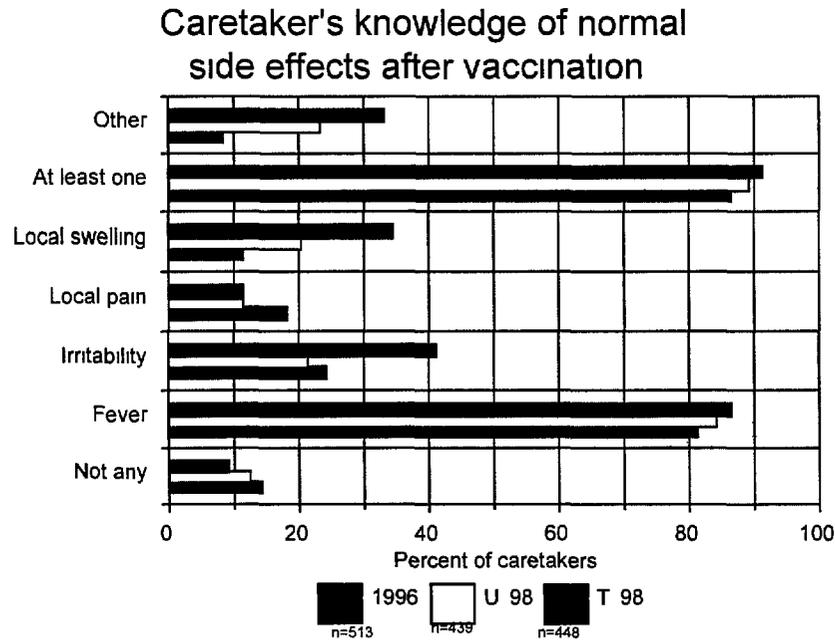
Very few caretakers knew all six diseases presently addressed by the primary immunization schedule (**Fig 19**), and almost 10 percent knew none at all. Like in many other countries, measles is better known, as are the two diseases that got special attention through mass campaigns and NIDs in the Central Asian Republics: polio and diphtheria.

**Figure 19**  
 (health Facility Assessment CAIDP March 1998)



Fever was cited by most caretakers as a side effect to be expected after immunization (**Fig 20**), irritability, local pain, and swelling were cited much less frequently. Particularly in Ferghana, many uncommon or wrong side effects (e.g., convulsions, generalized skin rashes, shock) were listed on the same level as normal side effects. Almost none mentioned all four normal side effects, while in Osh and Zhambul, about a fourth of all caretakers mentioned none at all.

**Figure 20**  
(Health Facility Assessment CAIDP March 1998)



Almost all caretakers claimed that the facility where they were interviewed was the facility where they normally came for their children's vaccinations. Very few of the caretakers claimed to have been turned away when they presented a child for vaccination, and but if so, then mostly because the child was considered too ill to be vaccinated or because of a lack of vaccine. Caretakers seemed to know the exact vaccination status of their children quite well in Osh and Ferghana, those in Zhambul seemed to know less.

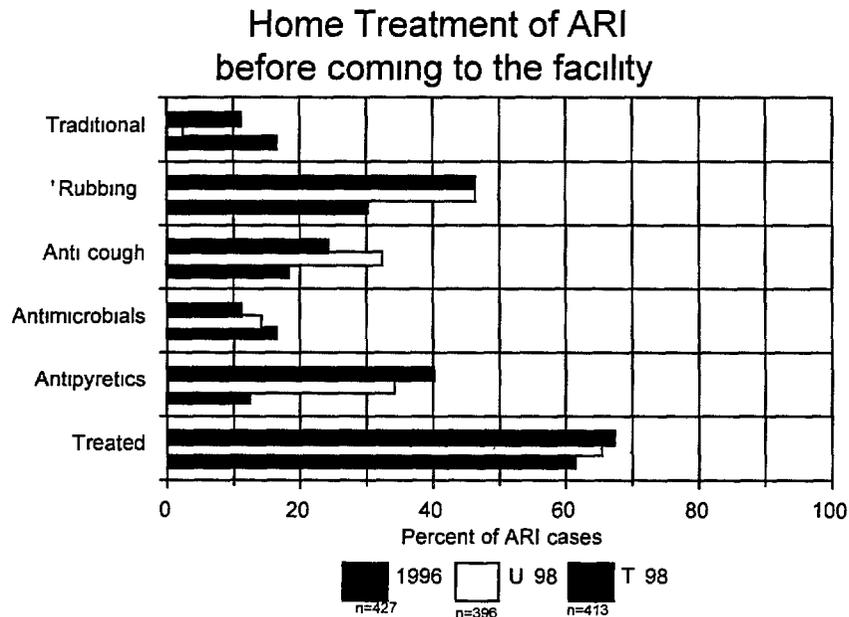
- Health workers are the most important source of information for caretakers regarding immunization, so caretakers' knowledge on immunization reflects what health workers told them. Exact knowledge of what can happen after a vaccination will prevent fear or avoidance of vaccination in the future. Health workers should make sure to inform caretakers correctly on the diseases prevented by the vaccinations offered and the normal side effects of the different vaccinations, as well as on the immunization status of their children.*
- All three countries have been adapting their list of contraindications to the WHO-recommended list. Uzbekistan still shows the biggest discrepancy in the present list. Only Kyrgyzstan actually monitors the number of children turned away for contraindications through its newly adapted immunization monitoring system. The fact that too many children seem to be turned away for "illness" needs to be further investigated in each oblast to assess actual adherence of health workers to the new policies. The ongoing effort to limit the contraindications to vaccination to the WHO-recommended ones should be pursued and its implementation monitored.*

## K Home Case Management before Coming to the Health Facility

Caretakers were questioned as to what they did before coming to the health facility (Fig 21). Less than 10 percent of the caretakers claim to have gone elsewhere before coming to the health facility, mostly to other health facilities or to health personnel that were family members or friends—only in Zhambul do caretakers consult non-medical or traditional advice.

In Ferghana, more than 90 percent of all cases were brought to the health worker within three days after the onset of the illness. In Osh and Zhambul, more than 20 percent of all cases waited longer than three days before bringing the child for consultation.

**Figure 21**  
(Health Facility Assessment CAIDP March 1998)



More than half the caretakers claimed that they gave some treatment to the child with an ARI complaint—“rubbing” with alcohol, sheep fat, or other mixtures seems quite popular. Also frequently reported are other traditional remedies, mainly herbal preparations, often mixed with milk or honey, and cough medicine. Many of the cough mixtures would not be considered “soothing,” because of the active substances they contain. Five to 10 percent of the caretakers gave an antibiotic to the child before visiting the health worker, in some cases, more than one.

- *The survey’s setting was not likely to gather reliable information on the role of traditional healers. Interviewers were health officials and the interview with the caretaker took place in the health facility. Since traditional healers act in a legal vacuum, and until recently were automatically punished, few caretakers would likely confess to having visited one. All the less so, since many of these traditional healers are family members or friends.*

- *Some traditional treatment of diseases—e g , rubbing the child's torso or warm drinks with honey—will do no harm and may actually be an adequate soothing remedy for simple ARIs However, further assessment of the most commonly used traditional treatments may be useful*
- *Caretakers need increased awareness of appropriate use of antibiotics and other pharmaceuticals Increased knowledge of rational use of drugs and increased communication skills of health workers can contribute to this both need to be reinforced in future clinical case management training*

The total number and the proportion of children presenting with diarrhea during this survey was much smaller than during the diarrhoea season (May-September) Findings are given for consideration, but are less valid than the findings for ARI Only in Ferghana was a reasonable percentage of the diarrhoea cases treated with ORT at home, up to two-thirds in Osh were treated with antibiotics Continued feeding and breastfeeding were mentioned as home care measures taken only in Ferghana to a considerable degree

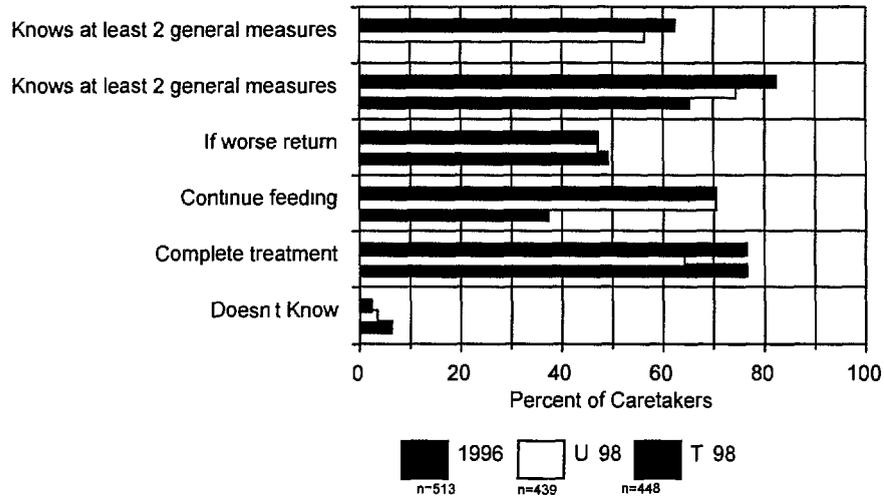
#### **L Home Case Management after Coming to the Health Facility**

The knowledge and practice of caretakers after a visit to the health facility are probably among the best indicators for evaluating the intervention of the health worker in the outpatient setting While the health worker can assess, classify, recommend treatment, and give danger signs to watch for, it is the caretaker who will actually give treatment and care and watch the child for danger signs Ideally, one would try to follow up the observed cases and interview the caretaker at home about what was actually done some days after the visit to the health facility, but this goes beyond the scope of the HFA

General measures of home care for the sick child were rather well known by the caretakers about two-thirds in each oblast knew at least two measures, in all oblasts, less than 10 percent knew none at all (**Fig 22**) Many more caretakers in 1998 than in 1996 mentioned that they would continue feeding the sick child Significantly more caretakers mentioned two general measures of home case management in 1998 when compared to 1996 General measures for home case management include continuing to give food or fluids, giving treatment at home, and bringing the child back if s/he gets worse Specific measures for the management of ARI include recognition of fast or difficult breathing as danger signs

**Figure 22**  
(Health Facility Assessment CAIDP March 1998)

**What to do at home  
Caretaker recall after consultation**

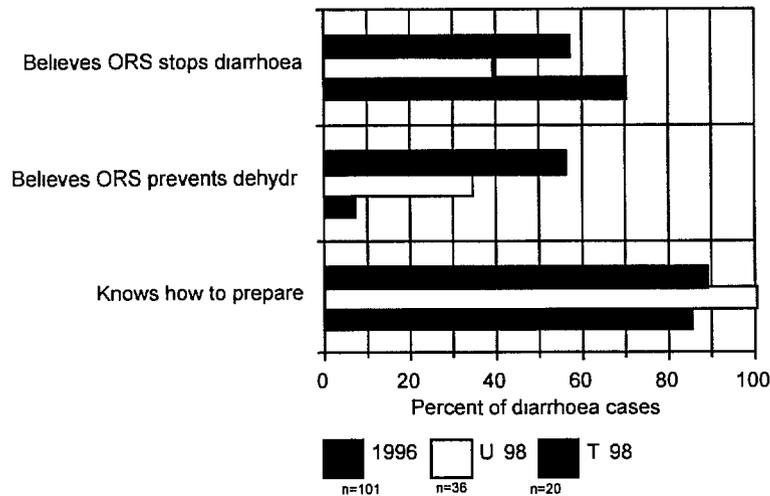


- *Caretakers' knowledge after the consultation has at least remained stable, and in some cases, improved. One should take into account that most of the caretakers are literate and are able to read and understand health messages on posters or handouts. Also, in Ferghana and Zhambul, mass media was used extensively to sensitize the general public on certain topics of home case management for diarrhea and/or ARI.*

Even after visiting the facility, not all caretakers with a child with diarrhoea knew how to prepare ORS (Fig 23), even fewer knew how to administer it appropriately to the child. While barely half of the caretakers whose child was seen by a trained health worker mentioned that ORS prevents dehydration, many caretakers thought ORS would stop the diarrhoea.

**Figure 23**  
(Health Facility Assessment CAIDP March 1998)

**Caretaker's knowledge of ORS after visit**



- *All of the above are factors that will interfere with appropriate treatment at home of the child with diarrhoea. The diarrhoea case management training will have to stress the need to make sure that caretakers know exactly how to prepare ORS and how to administer it. Diarrhoea treatment corners are excellent tools for this purpose.*
- *The misconception that ORS will stop diarrhoea may prevent mothers from continuing ORS if the expected outcome is not present after a few administrations. This will prevent its true action—the prevention of dehydration. Although the diarrhoea cases are too few to be representative, care should probably be taken to make sure that this misconception is addressed in the communication module of the diarrhoea case management course.*

**M Mass Media**

Mass media, i.e., radio and television, are often seen as adequate tools to inform the general public on health measures. Caretakers were asked how many times a day/week/month they listened to the radio and/or watched television.

**Table 11 Caretakers who listen to the radio**  
**Percent of total**

	Ferghana			Osh			Zhambul		
	1996 n=162	U '98 n=161	T '98 n=165	1996 n=154	U '98 n=135	T '98 n=130	1996 n=190	U '98 n=143	T '98 n=153
<b>Daily</b>	52	68	64	34	35	35	23	19	18
<b>Weekly</b>	6	2	9	8	13	9	5	8	4
<b>Not once a month</b>	-	1	-	1	-	2	7	1	2
<b>Never</b>	38	25	22	49	50	52	63	71	77

**Table 12 Caretakers who watch television**  
**Percent of total**

	Ferghana			Osh			Zhambul		
	1996 n=162	U '98 n=161	T '98 n=165	1996 n=154	U '98 n=135	T '98 n=130	1996 n=190	U '98 n=143	T '98 n=153
<b>Daily</b>	75	94	93	34	62	73	47	87	84
<b>Weekly</b>	6	2	1	4	9	4	6	4	7
<b>Not once a month</b>	-	1	-	-	-	-	28	1	-
<b>Never</b>	17	4	6	18	27	22	17	7	9

Combining both tables for 1998, we arrive at the following percentage of caretakers who listen to the radio or watch television at least once a week

Ferghana	97%
Osh	84%
Zhambul	93%

However, many caretakers reportedly added the qualifying statement, “if we have electricity” to their response, indicating that the stated frequency may convey more a desire than a reality

- Apparently television is more popular than radio in all three oblasts, even if the large majority of the caretakers come from rural areas. Health messages distributed through both media could reach large proportions of caretakers in all three oblasts

## V CONCLUSIONS

The general environment of the health workers in the three oblasts has changed little most problems that existed in 1996 persist or have worsened. The exception is the availability of diagnostic equipment and drugs for ARI case management.

Several findings of the survey may indicate that clinical case management of ARI has changed for the better, even only one year after the introduction of the clinical case management course in the pilot oblasts. Screening, history taking and clinical examination of ARI cases is much closer to the recommended practices when comparing trained and untrained health workers that were surveyed in 1998, or when comparing health workers surveyed in 1998 with those surveyed in 1996. The results of the prescription analysis confirm this finding, they show a much more rational prescription pattern and average costs per treatment in the samples that are closer to the cost of the IMCI recommended treatment.

Communication with the caretaker has improved significantly in the content of topics communicated. Results also indicate a possible increase in the quality of communication. The missing piece is the validation of the classification of the disease by the health worker. It is highly recommended that, if at all possible, a representative sample of supervision forms that contain the information be collected and analyzed.

The change for the better is not only found in trained health workers, but also, be it to a lesser degree, in untrained health workers. Several factors may contribute to this—

- trained and untrained health workers meet regularly (monthly)
- untrained health workers are also supervised by supervisors that have been trained
- in two of the three oblasts, wall charts have been distributed to trained and untrained health workers alike
- some of the “untrained” health workers have been trained in DD clinical case management, which emphasizes some of the principles required for ARI clinical case management
- whenever a new approach is introduced, one will have a number of health workers that will try the approach, even when they have not yet been formally trained

It is surprising to find a change in knowledge of the caretaker only one year after introduction of the new approach. However, unlike in many countries, the caretakers are all literate—they can read and understand wall charts. In two of the three oblasts, mass mobilization campaigns have been organized for the general public, advertising the new approach.

What did change much less or not at all is the degree to which health workers adhere to an integrated approach. Systematic assessment of concurrent diseases and assessment of nutritional and immunization status are poorly addressed. While all available information indicates that the implementation of ARI clinical case management has improved many aspects of the clinical case management, several aspects that are specifically addressed in the IMCI clinical case management course did not significantly improve. This only confirms that “integration of knowledge” does not automatically happen in the head of the health worker when that knowledge was not presented in an integrated way in the first place.

CAIDP could have opted for promoting the implementation of IMCI clinical case management courses, if funding and time had permitted to do so. Because of the limitations, it opted for the next best thing – implementing clinical case management for ARI and DD, which has shown that *clinical* case management courses can improve HWs’ skills. In Kazakhstan, case management had been taught without the clinical component before the CAIDP started. Even in such a short time, the clinical course was still able to make a difference in knowledge and practice. In the oblast where some principles of the clinical course were not well respected (too many participants per facilitator, too few cases seen during training), results seem less positive than in the other two oblast. The survey has shown that the clinical course leads to more rational prescribing, to a public health (less unnecessary antibiotics prescribed) and economic (less costly treatment per case) advantage. The experience also suggests that more could be achieved through implementation of a more integrated clinical case management, like the one proposed in the IMCI algorithm.

## **APPENDIXES**

**APPENDIX A**  
**Survey Instruments**

MOH  
USAID/BASICS  
Rapid Integrated Health Facility Assessment

**QUESTIONNAIRE 1 OBSERVATION - SICK CHILD**

Oblast _____	Rayon _____
MW Category _____	Date __ \ \ \
Facility Name _____	Facility Type _____
Interviewer No _____	Child s age(in months) _____
Child sex M / F _____	Child ID No _____

BEGIN TIMING THE INTERVIEW NOW TIME \_\_\_\_\_

- 1 What reason does the caretaker give for bringing the child to the health center (**Tick all that apply**)
- Diarrhea/vomiting     
  Fever     
  Difficulty breathing/cough/pneumonia

**SCREENING**

**Does the health worker determine the child's**

- |   |   |   |   |
|---|---|---|---|
| 2 | Clinic record                           | Y | N |
| 3 | Age by asking caretaker                 | Y | N |
| 4 | Weight                                  | Y | N |
|   | a Plot weight on a weight for age chart | Y | N |
| 5 | Temperature                             |   |   |
|   | a By thermometer                        | Y | N |
|   | b By touch                              | Y | N |
| 6 | Respiratory Rate                        | Y | N |

**Does the health worker ask questions about**

- |    |   |   |   |
|----|---|---|---|
| 7  | Drinking or eating                          | Y | N |
| 8  | Breast-feeding                              | Y | N |
| 9  | Convulsions                                 | Y | N |
| 10 | Vomiting                                    | Y | N |
| 11 | Change in consciousness/lethargy/sleepiness | Y | N |

<b>A</b>	<b>All severity questions (Q 7 to Q 11) asked?</b>	<b>Y</b>	<b>N</b>
----------	--	----------	----------

- |    |  |   |   |
|----|--|---|---|
| 12 | History of diarrhea                      | Y | N |
|    | a Blood in stool                         | Y | N |
|    | b Duration of diarrhea                   | Y | N |
| 13 | History of fever                         | Y | N |
|    | a Duration of fever                      | Y | N |
| 14 | History of cough/difficulty breathing    | Y | N |
|    | a Duration of cough/difficulty breathing | Y | N |
| 15 | History of ear problems                  | Y | N |
|    | Duration of ear problems                 | Y | N |

<b>B</b>	<b>All key history questions (Q 12 - Q 15) asked?</b>	<b>Y</b>	<b>N</b>
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- 16 History of home treatment with
- a Herbs/traditional medicine Y N
- b Western medicine Y N
- 17 Does the health worker check/ask about the child's immunization status? Y N  
 IF YES, is the child referred for vaccination  
 \_\_\_ Today \_\_\_ Another day \_\_\_ Not referred
- 18 Does the health worker ask about the caretaker's diphtheria vaccination status? Y N  
 IF YES, is the parent referred for vaccination  
 \_\_\_ Today \_\_\_ Another day \_\_\_ Not referred

**EXAMINATION****Does the health worker**

- 19 Examine ears Y N
- 20 Examine throat Y N
- 21 Look for stiff neck Y N
- 22 Examine chest
- a By counting respiratory rate Y N
- b By stethoscope Y N
- 23 Look for skin turgor Y N

<b>C</b>	<b>Child examined according to visit (Q 1)?</b>	<b>Y</b>	<b>N</b>
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- 24 Look for pallor (conjunctival/palmar) Y N
- 25 Look for visible signs of undernutrition or vitamin deficiency Y N

<b>D</b>	<b>Child examined for nutrition status (Q 24 and Q 25 circled Y)?</b>	<b>Y</b>	<b>N</b>
----------	---	----------	----------

**Diagnosis and Treatment****Does the health worker diagnose the child as having**

- 26 Diarrhea/gastroenteritis/gastroenterocolitis Y N
- 27 Dehydration Y N  
 If YES, is it \_\_\_ Mild \_\_\_ Severe \_\_\_ Not stated
- 28 Dysentery/bloody diarrhea/hemocolitis Y N
- 29 Pneumonia, severe pneumonia, other very severe disease Y N
- 30 Acute ear infection Y N
- 31 Streptococcal throat infection Y N
- 32 Other ARI Y N
- 33 Meningitis, meningococcal Y N
- 34 Fever, other cause Y N
- 35 Measles Y N
- 36 Hypotrophy/malnutrition/vitamin deficiency Y N
- 37 Other Y N Specify \_\_\_\_\_
- 38 No diagnosis Y N



**Interpersonal communication**

54	Any oral medication given or prescribed (Q 39) If yes, does the health worker	Y	N
a	Explain how to administer oral medication	Y	N
b	Demonstrate how to administer oral medication	Y	N
c	Ask an open ended question to verify the comprehension on how to administer oral medication	Y	N

**Does the health worker**

55	Explain when the child needs to be seen again	Y	N
56	Explain the need to give the same quantity or more liquid at home	Y	N
57	Explain the need to continue feeding or breast-feeding at home	Y	N
58	Tell the caretaker to bring the child back when the child		
a	Is not able to drink or is drinking poorly	Y	N
b	Is not able to breast-feed	Y	N
c	Becomes sicker	Y	N
d	Develops a fever	Y	N
e	Starts vomiting everything	Y	N
f	Develops fast or difficult breathing	Y	N
g	Develops blood in the stool	Y	N
h	Becomes abnormally sleepy or unconscious	Y	N

<b>G</b>	<b>Are at least three of the Q 58 - messages checked?</b>	<b>Y</b>	<b>N</b>
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**Does the health worker**

59	Ask the caretaker to repeat the instructions on when to return with the child	Y	N
60	Ask the caretaker questions to see if (s)he has understood?	Y	N
61	Ask the caretaker if (s)he has any questions?	Y	N
62	Criticize the caretaker or show disapproval	Y	N

**CHECK THE TIME OF THE INTERVIEW AS THE CARETAKER LEAVES**

TIME \_\_\_\_\_ DURATION OF INTERVIEW \_\_\_\_\_

**Ask the caretaker to see the prescription slip, and check the prescribed treatment**

**Ask medical worker to see the child's clinic record and check the following**

The diagnosis (see Q 26-Q 38)

The treatment (see Q 39)

The immunization record and write date of birth and tick all of the following that have been given to the child

Date of birth \_\_\_\_\_

IMMUNIZATION	RECEIVED	
Polio at birth	Y	N
BCG	Y	N
DPT-1	Y	N
Polio-1	Y	N
DPT-2	Y	N
Polio-2	Y	N
DPT-3	Y	N
Polio-3	Y	N
Measles	Y	N
DPT-4	Y	N

<b>H Is the child up to date with his/her vaccinations</b>	<b>Y</b>	<b>N</b>
--	----------	----------

End of Sick Child Checklist





14 **Does the child have cough/difficult breathing/pneumonia?** Y N  
**If NO, go to Q 16, else**

15 Did you treat cough/difficult breathing/pneumonia at home? Y N  
**If yes, what did you do? (Tick all that apply)**

- Gave Aspirin/paracetamol
- Gave herbs/ <local term>
- gave antibiotics(specify \_\_\_\_\_)

If YES, where did you get them \_\_\_\_\_  
 Did you give them by injection / pill / syrup (circle what applies)  
 How much did they cost \_\_\_\_\_

gave sulfanilamides(specify \_\_\_\_\_)

If YES, where did you get them \_\_\_\_\_  
 Did you give them by injection / pill / syrup  
 How much did they cost \_\_\_\_\_

- Gave a non-identified medicine
- Gave a cough medicine
- Applied rub-ins
- Other \_\_\_\_\_

16 Did the health worker give, advise or prescribe any medicine or other treatment today? Y N  
**If NO, go to Q 17, else**

Complete for the listed medicine by asking for each type of medicine  
 Was the medicine GIVEN, PRESCRIBED or ADVISED  
 HOW MUCH medicine will you give the child EACH TIME?  
 HOW MANY TIMES will you give it to the child EACH DAY?  
 HOW MANY DAYS will you give the medicine to the child?

Medicine	Given/Advised/ Prescribed	How much each time?	How many times a day?	How many days?	All correct (Y/N)?
Antibiotic tab/syr/inj (please list all)					
Sulfanilamides tab/syr/inj (please list all)					
Antipyretics (please list all)					
ORS/RHF					
Cold or cough medicine (please list all)					
Rub ins plasters nets or other traditional medicine (please list all)					

<b>A</b>	<b>Caretaker knows how to give ALL essential medications correctly?</b>	<b>Y</b>	<b>N</b>
----------	---	----------	----------

17 Was your child referred for hospitalization by the medical worker?  
(If NO, go to Q 19) Y N

18 Will you take your child to the hospital?  
(If YES, go to Q 19)  
If NO, Y N

a Why won't you take your child to the hospital? (Prompt and tick all that apply)

- hospital is too far
- no transport available
- no one to guard the other children
- no money, not enough money, too expensive
- Other (specify \_\_\_\_\_)

Child has \_\_\_\_\_ Diarrhea \_\_\_\_\_ Fever \_\_\_\_\_ ARI

19 What will you do for your child when you return home? (Tick all that apply)

Doesn't know

- General**
- Continue feeding/breast-feeding the child
  - Complete course of medications/ORS/RHF
  - Bring the child back if he/she doesn't get better or gets worse

- Specific**
- Diarrhea**
- Give ORS/RHF
  - Give more fluids
  - Give to drink after each stool/vomit
- Fever**
- Give antipyretic
- ARI**
- Give antibiotic
  - Give antipyretics
  - Give rubbings

<b>B</b>	<b>Caretaker knows at least 2 general and 1 specific aspect of home-management?</b>	<b>Y</b>	<b>N</b>
----------	---	----------	----------

20 How will you know that the child becomes more ill at home? (Tick all that apply)

- doesn't know
- fever begins or doesn't go away
- child unable to eat
- diarrhea continues
- child becomes sicker
- child becomes sleepy/unconscious
- Vomiting begins or continues
- child unable to drink/breast-feed
- child has convulsions
- child has rapid or difficult breathing
- Other \_\_\_\_\_

<b>C</b>	<b>Caretaker knows at least 3 signs of child getting worse at home?</b>	<b>Y</b>	<b>N</b>
----------	---	----------	----------

21 Did your child receive an immunization today? Y      N

IF NO, was the child (Tick a single response) **PROMPTED QUESTION**

- Referred for vaccination another day
- Not referred for vaccination
- Up to date

22 How did you learn when and where to come for routine immunization? (Tick all that apply)

- Doctor/nurse/midwife/flasher
- family/parents
- community volunteer
- radio
- poster
- television
- neighbor or friend
- other \_\_\_\_\_

23 Where do you take your child normally for immunization? (Tick a single response)

- this health facility
- another health facility
- mobile team

24 Which diseases will be prevented by the immunizations your child received?(Tick all that apply)  
 don't know                       measles  
 diphtheria                       tuberculosis  
 tetanus                               polio  
 whooping cough               hepatitis  
 other \_\_\_\_\_

25 Do you know what might happen as normal side effects of the immunization?              Y      N  
 If yes, what were you told? (Tick all that apply)  
 Fever                               Pain at injection site  
 Irritability                       Swelling                       other \_\_\_\_\_

27 Have you and your child ever come to this health facility to be vaccinated and been turned away for some reason?              Y      N  
 If yes, what was the reason? (Tick all that apply)  
 Immunization session canceled  
 Immunization session stopped before you arrived  
 health facility closed  
 No immunization given the day you visited  
 No vaccines or supplies available  
 No staff present to give vaccinations  
 child was too ill to give vaccinations  
 child had contraindications to immunization  
 other \_\_\_\_\_

28 Ask the caretaker date of birth and age of the child and what vaccines the child has received up till now (tick all that apply)

Date of birth \_\_\_\_\_ Age in months \_\_\_\_\_

IMMUNIZATION	RECEIVED
Polio at birth	Y    N
BCG	Y    N
DPT-1	Y    N
Polio-1	Y    N
DPT-2	Y    N
Polio-2	Y    N
DPT-3	Y    N
Polio-3	Y    N
Measles	Y    N
DPT-4	Y    N

28 Ask the caretaker whether (s)he received an Td vaccination              Y      N  
 If Yes, when was the last time (month and year) \_\_\_\_\_

- 29 When will you bring your child back to the health facility? (Tick all that apply)
- Doesn't know
  - No need to return
  - Return if child becomes worse at home
  - Return for follow up
  - Return for next immunization
  - Knows when to come back
  - Doesn't know when to come back

- 30 How often do you listen to the radio? (Tick a single response) PROMPTED QUESTION
- Every day
  - At least once a week
  - Every 2 weeks
  - Every month
  - Less frequently than every month
  - Never listen

- 31 How often do you watch TV? (Tick a single response) PROMPTED QUESTION
- Every day
  - At least once a week
  - Every 2 weeks
  - Every month
  - Less frequently than every month
  - Never listen

- 32 How much did you pay today for PROMPTED QUESTION
- transportation to the health facility \_\_\_\_\_
  - the services received \_\_\_\_\_
  - medical chart or booklet \_\_\_\_\_
  - medication \_\_\_\_\_

- 33 Did you have to borrow money to pay for today's visit? Y N

**END OF THE INTERVIEW**

**Thank the person for the interview and ask him/her if (s)he has any questions**

**Be sure that (s)he knows**

- how to prepare ORS for a child with diarrhea**
- how to take the prescribed medication**
- when to return if the child becomes worse at home**
- when to return for vaccination**

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**3 HEALTH CARE WORKER INTERVIEW**

Oblast _____	Rayon _____
MW Category _____	Date _ \ _ \ _
Facility Name _____	Facility Type _____
Interviewer No _____	

**Introduce yourself to the health care worker Tell him/her that you would like to ask some general questions about the clinic, followed by some general questions about his/her job**

1 What are the normal hours of operating at this facility?  
 Opening time \_\_\_\_\_ Closing time \_\_\_\_\_ Total number of hours \_\_\_\_\_

2 Do you charge fees for any of the services of this health facility Y N

Service	Fee
Sick child out-patient visit	
Healthy baby check-up	
Healthy pregnant women check-up	
Child Immunization	
Reproductive health/family planning	
Health education	
Specialized examinations (X-ray, lab, )	
Paperwork/forms/registers	

3 What is the main source of your medicines and supplies? (Tick a single response)

- Government pharmacy/warehouse                       private pharmacy/ supplier  
 humanitarian assistance/NGO/Mission  
 Other \_\_\_\_\_

4 How are medicine and supplies usually received? (Tick a single response)  
 delivered to the facility                       picked up from the supplier                       both

5 What is the most common source of delay in delivery of supplies? (Tick a single response)

- Inadequate transport                       Insufficient fuel  
 Administrative difficulties                       Insufficient staff  
 Financial problems                       Stock out at the central store  
 Other \_\_\_\_\_

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6 Do you have a copy of the national treatment guidelines? Y N

If yes Can we see them? Y N  
 Do you use them? Y N

7 Do you have a functioning supervisor? Y N  
 If no, go to Q 13, else

8 Do you have a schedule for supervisory visits? Y N

9 Does your supervisor work in this health facility? Y N

If No, how many times have you had a visit from your supervisor

b in the last six months \_\_\_\_  
 c in the last twelve months \_\_\_\_

10 What did your supervisor do the last time he visited you? (Tick all that apply)

- Delivered supplies
- Observed immunization technique
- Observed management of sick children
- Reviewed reports prepared by health worker
- Updated health worker on current information
- Discussed problems with supplies and equipment
- treat sick children
- Other \_\_\_\_\_

11 Did you receive feedback from that supervisory session? Y N

IF YES, in what form?  Supervisory register  Written report  
 Oral report  Other (specify) \_\_\_\_\_

12 What does your supervisor do to keep your technical skills up to date? (Tick all that apply)

- Nothing  Workshops
- Performance feedback  Training sessions
- Monthly meetings  Sends documents
- Other (specify) \_\_\_\_\_

13 Do you have to submit any reports such as the number of patients seen, or the number of doses of vaccine administered? Y N

If NO, go to question 17

IF YES, ask the TYPE of report, HOW OFTEN and if the reports are UP TO DATE?

Type of report	How often/year	Up to date?	
_____	_____	Y	N
_____	_____	Y	N
_____	_____	Y	N
_____	_____	Y	N
_____	_____	Y	N

14 Do you keep a copy of the reports that you send? Y N

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15 How do you use the information collected in these reports to help you with your job? **(Tick all that apply)**

- |   |   |
|---|---|
| <input type="checkbox"/> Ordering medicines, supplies and equipment | <input type="checkbox"/> Assessing targets                      |
| <input type="checkbox"/> Epidemic surveillance                      | <input type="checkbox"/> Communication with community/personnel |
| <input type="checkbox"/> Doesn't use info /doesn't know             | <input type="checkbox"/> improve skills                         |
|   | <input type="checkbox"/> Other (specify) _____                  |

16 What type of feedback do you get from these reports? **(Tick a single response)**

- |  |  |
|--|--|
| <input type="checkbox"/> None                  | <input type="checkbox"/> Oral discussion       |
| <input type="checkbox"/> Written report        | <input type="checkbox"/> Both written and oral |
| <input type="checkbox"/> Other (specify) _____ |  |

17 What are the most difficult problems that you face in doing your job? **(Tick all that apply)**

- Lack of training
- Mothers don't bring children to clinic
- Staff shortages / lack of time
- Lack of medicines, supplies or equipment
- Lack of supervision
- Lack of feedback on performance
- Inadequate transport
- Lack of motivation (financial or other)
- Poor working environment (health facility)
- lack of learning materials
- Other (specify) \_\_\_\_\_

18 Have you discussed these problems with your supervisor? Y    N

a Did your supervisor try to help you to solve the problems? Y    N

19 How many training sessions related to child health have you received in the last 12 months? \_\_\_\_\_  
**If NO training received, go to Question 22**

20 What type of training was it? \_\_\_\_\_

21 Did your last training involve clinical practice? Y    N

22 In this health facilities, at what ages do you give (age in DAYS and in MONTHS as required, for children under five years of age only )

	First dose	Second dose	Third dose	Fourth dose
DPT				
Polio				
BCG				
Measles				

<b>A</b>	<b>EPI vaccination schedule all correct?</b>	<b>Y</b>	<b>N</b>
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23 To whom do you give DPT  children up to 3 years of age  
 children from 3 up to 7 years of age  
 persons of 7 years and older  
 don't know

24 To whom do you give DT  children up to 3 years of age  
 children from 3 up to 7 years of age  
 persons of 7 years and older  
 don't know

25 To whom do you give Td  children up to 3 years of age  
 children from 3 up to 7 years of age  
 persons of 7 years and older  
 don't know

26 What days are immunizations given? (circle days) Number of immunization days/week  
M T W T F Sa \_\_\_\_\_

27 Do you offer all antigens, except BCG, on every vaccination day? Y N

28 Do you have a special consultation for healthy pregnant women check-up? Y N

IF YES, on what days is the check-up held (circle days) Number of consultation days/week  
M T W T F Sa \_\_\_\_\_

IF NO, why are these check-ups not held at your facility? (Tick all that apply)  
 No training  No staff  not my job  
 No space available  No supplies  
 Don't know

29 Please tell me the signs that would make you refer a child to a hospital? (Tick all that apply)

- Child is lethargic/abnormally sleepy/unconscious
- Child has had convulsions
- Child is not eating or drinking
- Child has not responded to usual treatment
- Child looks very unwell
- Child has a very high fever
- Child vomits everything
- Child has a severe dehydration
- Child has chest indrawing or stridor at rest
- Child has stiff neck
- Child has a severe malnutrition/anemia
- Other (specify) \_\_\_\_\_

<b>B</b>	<b>Health worker knows at least 3 signs for referral?</b>	<b>Y</b>	<b>N</b>
----------	---	----------	----------

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30 a Have you ever wanted to refer a child to hospital but been unable to do so? Y N

**If NO, go to question 31**

b If YES, why could you not refer the child? (Tick all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Hospital too far                          | <input type="checkbox"/> Mother/parents refuse to go      |
| <input type="checkbox"/> No transport available                    | <input type="checkbox"/> No fuel available                |
| <input type="checkbox"/> No one to look after the children at home | <input type="checkbox"/> Parents didn't have enough money |
| <input type="checkbox"/> referral does not have doctors/medicine   | <input type="checkbox"/> Other (specify) _____            |

31 What messages/advice/ health education do you give to caretakers when they bring their child to the health facility? (Tick all that apply)

- Giving information on danger signs to watch for
- Giving information on what to do at home
- Giving information on how to give medicine at home
- Giving nutrition or feeding advice
- Finding out what mothers have done at home and what the symptoms of the child's illness are
- Giving information on how to prevent illness
- Telling mothers when to come back to the health facility
- Ensuring that mothers understand what to do at home
- Giving group talks
- Other (specify) \_\_\_\_\_

32 What makes it difficult for you to give messages/advice/health education to caretakers when they bring their child to the health facility? (Tick all that apply)

- It isn't really my role
- Someone else does it
- No time
- I don't know how to do it
- They do not follow the advice anyway
- they don't understand what we say
- I don't have any education materials
- It is not important
- language barriers
- Other (specify) \_\_\_\_\_

**END OF THE HEALTH WORKER INTERVIEW**

**Thank the health worker for his/her cooperation and answer any questions that he/she may have about the correct recommendations for immunizations or management of sick children**



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**4 EQUIPMENT AND SUPPLY CHECKLIST**

Oblast _____	Rayon _____	Date ____ / ____ / ____
Facility Name _____	Facility type _____	
Interviewer No _____		

**1 Category of health staff with child case management responsibilities**

Category	Assigned to the facility	Present the day of the survey
Physician	_____	_____
Nurse	_____	_____
Midwife	_____	_____
Intern	_____	_____
Feldsher	_____	_____

**Patient and worker accommodation**

2	Is there adequate seating for patients?	Y	N
3	Is there a covered waiting area?	Y	N
4	Is there a source of clean, potable water in the facility	Y	N
5	Is there a <u>functional</u> toilet or latrine	Y	N
6	Are health information posters displayed	Y	N
	<b>IF YES</b> Are they written in the local language	Y	N
7	Is an ORT corner present and being used?	Y	N

**Equipment and supplies**

Are the following equipment and supplies present in the health facility

<b>8</b>	<u>Transportation</u>					
	Vehicle	Y	N	<b>If YES, In working order?</b>	Y	N
	Motorcycle	Y	N		Y	N
	Bicycle	Y	N		Y	N
	Animal	Y	N		Y	N
<b>9</b>	<u>Social Mobilization equipment</u>					
	Flipchart	Y	N	<b>If YES, In working order?</b>	Y	N
	Counseling cards/pamphlets	Y	N		Y	N

*66*



**Availability of drugs and other supplies the day of the survey** Tick all conditions that apply for each item

	Supplies	Available		Not Expired		
		Y	N	Y	N	N/A
30	Cotrimoxazole	Y	N	Y	N	N/A
31	Amoxicillin	Y	N	Y	N	N/A
32	Ampicillin	Y	N	Y	N	N/A
33	Penicillin	Y	N	Y	N	N/A
34	Chloramphenicol(levomycetne) tablets	Y	N	Y	N	N/A
35	Nalidixic acid tablets	Y	N	Y	N	N/A
36	Injectable Penicillin	Y	N	Y	N	N/A
37	Injectable Chloramphenicol (levomycetne)	Y	N	Y	N	N/A
38	Paracetamol	Y	N	Y	N	N/A
39	Aspirin	Y	N	Y	N	N/A
40	Salbutamol oral	Y	N	Y	N	N/A
41	Salbutamol inhaler	Y	N	Y	N	N/A
42	Tetracycline eye ointment	Y	N	Y	N	N/A
43	Iron tablets	Y	N	Y	N	N/A
44	Vitamin A capsules	Y	N	Y	N	N/A
45	Anti-Worm tablets	Y	N	Y	N	N/A
46	Sterile water for injection	Y	N	Y	N	N/A
47	ORS /rehydration	Y	N	Y	N	N/A
48	IV solution for severe dehydration	Y	N	Y	N	N/A
49	IV sets	Y	N	Y	N	N/A
50	Needles					
	a Reusable	Y	N	Y	N	N/A
	b Single use	Y	N	Y	N	N/A
51	Syringes					
	a Reusable	Y	N	Y	N	N/A
	b Single use	Y	N	Y	N	N/A

- 52 Rupture of stock in the last 30 days? Y N  
**IF YES, specify**

Item	Tick if Yes	Number of days out of stock
Vaccines		
Syringes/needles		
ORS		
Essential Drugs		
Cards/forms		

- 53 Are drugs and other supplies adequately organized and stored appropriately Y N

**Documentation and record keeping**

Are the following items present in the health facility?

- 54 Immunization register (#64) Y N  
 a If YES, is it up to date? Y N
- 55 A stock of vaccination reporting forms (#5,#6) Y N
- 56 A stock child immunization forms (#63) Y N
- 57 A stock of clinical record booklets (#112) Y N
- 58 A stock of essential drugs cards Y N
- 59 Notifiable disease report forms (#1,#2) Y N
- 60 Is a patient register kept Y N  
 a If YES, is it up to date? Y N
- 61 Number of visits in last month \_\_\_\_\_
- 62 Number of visits for children 0-59 seen in last month \_\_\_\_\_
- 63 Average No of visits per working day \_\_\_\_\_

**END OF EQUIPMENT AND SUPPLY CHECKLIST**

**APPENDIX B**

**“Data Summary Tables”  
(Zhambul, Osh, Ferghana)**

**CAIDP Pharmaceutical Prescribing Analysis  
KAZAKSTAN**

**Table 1 Zhambul 1996 - Prescribing Habits By Type of Facility**

Facility Type	# Facilities	# Encounters	% Female	Average # Problems	Average # Drugs	% Injection	% Generic
FAP	13	74	66	12	18	5	72
SUB	5	37	57	12	17	19	89
SVA	6	32	41	14	21	19	78
CRB	5	38	50	13	19	5	79
HOSPITAL (city&oblast)	1	10	50	11	22	10	80
<b>All Facilities</b>	<b>30</b>	<b>191</b>	<b>56</b>	<b>12</b>	<b>19</b>	<b>10</b>	<b>78</b>

**Table 1 Zhambul 1998 Trained and Untrained  
Prescribing Habits By Type of Facility**

Facility Type	# Encounters	% Female	Average # Problems	Average # Drugs	% Injection	% Generic	% Antibiotics
FAP	147	52	111	153	7	53	29
SUB	79	46	105	218	16	58	39
SVA	36	50	114	186	14	61	33
CRB	32	46	116	153	16	53	28
HOSPITAL (city&oblast)	0	0	0	0	0	0	0
<b>All Facilities</b>	<b>294</b>	<b>49</b>	<b>110</b>		<b>12</b>	<b>56</b>	<b>32</b>

**Table 1 Zhambul 1998 Trained - Prescribing Habits By Type of Facility**

Facility Type	# Encounters	% Female	Average # Problems	Average # Drugs	% Injection	% Generic	% Antibiotics
FAP	82	51	110	150	9	52	23
SUB	32	44	103	234	22	67	56
SVA	6	67	100	183	0	45	33
CRB	32	41	116	153	16	53	28
HOSPITAL (city&oblast)	0	0	0	0	0	0	0
<b>All Facilities</b>	<b>152</b>	<b>48</b>	<b>109</b>	<b>170</b>	<b>13</b>	<b>56</b>	<b>32</b>

**Table 1 Zhambul 1998 Untrained - Prescribing Habits By Type of Facility**

Facility Type	# Encounters	% Female	Average # Problems	Average # Drugs	% Injection	% Generic	% Antibiotics
FAP	65	54	1 12	1 57	6	55	35
SUB	47	47	1 06	2 06	17	51	28
SVA	30	47	1 17	1 87	6	64	33
CRB	0	0	0	0	0	0	0
HOSPITAL (city & oblast)	0	0	0	0	0	0	0
<b>All Facilities</b>	142	50	1 11	1 80	11	55	32

**Table 2 Zhambul 1996 - Frequency of Health Problems**

Health Problem	Number
Other respiratory tract infections (ORTI)	159
Diarrhea - simple	26
Miscellaneous skin and subcutaneous infections	15
Nutritional deficiency	13
Unspecified pneumonia	9
Otitis media	6
Other	4
Dysentery	2
<b>Total</b>	<b>234</b>

**Table 2 Zhambul 1998 Trained and Untrained  
Frequency of Health Problems**

Health Problem	Number
Other respiratory tract infections (ORTI)	230
Diarrhea - simple	2
Miscellaneous skin and subcutaneous infections	0
Nutritional deficiency	1
Unspecified pneumonia	22
Other	3
<b>Total</b>	<b>258</b>

**Table 2 Zhambul 1998 Trained - Frequency of Health Problems**

<b>Health Problem</b>	<b>Number</b>
Other respiratory tract infections (ORTI)	110
Diarrhea - simple	0
Miscellaneous skin and subcutaneous infections	0
Nutritional deficiency	0
Unspecified pneumonia	15
Other	2
<b>Total</b>	<b>127</b>

**Table 2 Zhambul 1998 Untrained - Frequency of Health Problems**

<b>Health Problem</b>	<b>Number</b>
Other respiratory tract infections (ORTI)	120
Diarrhea - simple	2
Miscellaneous skin and subcutaneous infections	0
Nutritional deficiency	1
Unspecified pneumonia	7
Other	1
<b>Total</b>	<b>131</b>

1996 Table 5 Zhambul - Average Cost of Treatment By Diagnosis

US\$	Diarrhea	ORTI	Pneumonia
Sample Average Cost of Treatment	1 23	1 66	5 05
IMCI Average Cost of Treatment	1 00	0 11	2 07*
Possible savings (% of Sample Average Cost of Treatment)	19%	93%	59%

\*averages adult and pediatric Cotrimoxazole tablets since both were prescribed

Table 5 Zhambul 1998 Trained and Untrained Average Cost of Treatment By Diagnosis

US\$	Diarrhea	ORTI	Pneumonia
Sample Average Cost of Treatment	1 17	1 42	2 83
IMCI Average Cost of Treatment	1 46	0 68	2 99
Possible savings (% of Sample Average Cost of Treatment)	0	52%	0

Table 5 Zhambul 1988 Trained - Average Cost of Treatment By Diagnosis

US\$	Diarrhea	ORTI	Pneumonia
Sample Average Cost of Treatment	0	1 02	3 10
IMCI Average Cost of Treatment	0	0 68	2 99
Possible savings (% of Sample Average Cost of Treatment)	0	33%	4%

Table 5 Zhambul 1998 Untrained - Average Cost of Treatment By Diagnosis

US\$	Diarrhea	ORTI	Pneumonia
Sample Average Cost of Treatment	1 17	1 79	2 42
IMCI Average Cost of Treatment	1 46	0 68	2 99
Possible savings (% of Sample Average Cost of Treatment)	0	62%	0

Zhambul 1998 - Most Costly Drugs Prescribed\*

Generic/Brand Name	1996 Baseline			1998 Untrained			1998 Trained		
	Unit Cost	Qty Disp	Total Cost	Unit Cost	Qty Disp	Total Cost	Unit Cost	Qty Disp	Total Cost
ascorbic acid 50 mcg/amp				0 85/ml	120	102 00			
co-trimoxazole 120 mg/tab	0 06/tab	375 5	22 53	0 08/tab	384	30 72	0 08/tab	447 5	35 80
co-trimoxazole 480 mg/tab	0 20/tab	473 5	94 70						
benzylpenicillin sodium 0 5MU	0 26/vial	115	29 90						
benzylpenicillin sodium 1MU	0 4/vial	81 5	32 60	0 23/vial	70	16 10	0 23/vial	112 5	25 88
cough mixture liquid				0 01/ml	810	8 10	0 01/ml	2700	27 00
ampicillin 500 mg inj	0 71/vial	43	30 53				0 65/vial	15	9 75
levomycetine 1000 mg inj				1 17/vial	12	14 04			
paracetamol 100 mg tab				0 02/tab	561 5	11 23	0 02/tab	479	9 58
paracetamol 200 mg tab							0 02/tab	305	6 10
paracetamol 250 mg suppository							0 21/supp	40	8 40
paracetamol liquid 120mg/5ml	0 02/ml	674	13 48				0 01/ml	305	3 05
oral rehydration salts	0 44/sach	50	22 00	0 59/sach	14	8 26			
vitamin D2 alcoholic inj				0 13/ml	120	15 60			
Doctor Mom syrup				0 03/ml	225	6 75	0 03/ml	120	3 60
Mate Machekha Herbs mixture							0 65/sach	9	5 85
Biseptol tab				0 14/tab	39 5	5 53	0 14/tab	30	4 20
Solodka Koren mixture							0 52/sach	8	4 16
mukaltin 50mg/tab	0 03/tab	206 9	6 21	0 02/tab	211	4 22	0 02/tab	238 5	4 77
bromhexine tab	0 07/tab	60	4 20				0 04/tab	60 5	2 42
bromhexine 0 04mg/ml syrup				0 03/ml	225	6 75			
gentamycine sulfate 8 mg inj	3 43/ml	2 5	8 58						
bacillus cereus 35 mg cap	0 25/cap	30	7 50						
pertussin (herbal) syrup	0 01/ml	335	3 35						
broncholytine syrup	0 02/ml	195	3 90						
hydrogen peroxide liquid	0 01/ml	300	3 00						
paracetamol 500 mg tab	0 04/tab	151 9	6 08						
phenoxymethylpenicillin 100 mg tab	0 08/tab	56	4 48						
phenoxymethylpenicillin 250 mg tab	0 20/tab	20	4 00						
herbal cough liquid	0 03/ml	342	10 26						
<b>Total most costly drugs*</b>			307 30			229 30			150 56
<b>Total cost of all drugs</b>			345 69			255 64			160 69

\* approximately 90% of all drugs prescribed by cost

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% by Cost of Most Costly Drugs Prescribed	1996 Baseline	1998 Untrained	1998 Trained
Injectable drugs prescribed	33 %	20 %	24 %
Unnecessary cough preparations prescribed (other than soothing cough syrup)	12 %	8 %	7 %

Compare % Antibacterials Prescribed to % Cases Diagnosed as ORTI, Diarrhea, and Pneumonia	1996 Baseline	1998 Untrained	1998 Trained
% of Most Costly Drugs Prescribed that were Antibacterial drugs	44 % (8/18)	33 % (4/12)	29 % (4/14)
Cases of ORTI and Diarrhea	79 %	93 %	87 %
Cases of Pneumonia	4 %	5 %	12 %

Potential for Savings if the Following Unnecessary Drugs were not Prescribed	1996 Baseline	1998 Untrained	1998 Trained
Cough preparations		17 72	10 79
Other and miscellaneous	38 42	102 00	10 07
Total US\$	38 42	119 72	20 80
Total of most costly drugs US\$	307 30	229 30	150 56
Potential savings if not prescribed	13 %	52 %	14 %

**CAIDP Pharmaceutical Prescribing Analysis  
KYRGHYZSTAN**

**Table 1 Osh 1996 - Prescribing Habits By Type of Facility**

Facility Type	# Facilities	# Encounters	% Female	Average # Problems	Average # Drugs	% Injection	% Generic
FAP	13	62	47	1.2	2.2	27	58
SUB	12	43	26	1.1	2.2	19	53
SVA	5	19	21	1.2	2.7	11	84
CRB	7	28	50	1.3	2.9	14	61
HOSPITAL (city&oblast)	1	8	50	1.0	1.8	13	63
<b>All Facilities</b>	<b>38</b>	<b>160</b>	<b>39</b>	<b>1.2</b>	<b>2.3</b>	<b>20</b>	<b>61</b>

**Table 1 Osh 1998 Trained and Untrained - Prescribing Habits By Type of Facility**

Facility Type	# Encounters	% Female	Average # Problems	Average # Drugs	% Injection	% Generic	% Antibiotics
FAP	143	42	1.17	1.50	10	77	36
SUB	42	26	1.02	1.45	7	66	31
SVA	66	39	1.20	1.85	6	69	39
CRB	9	33	1.00	3.11	0	64	0
HOSPITAL (city&oblast)	9	33	1.22	1.78	0	100	0
<b>All Facilities</b>	<b>269</b>	<b>38</b>	<b>1.15</b>	<b>1.64</b>	<b>8</b>	<b>73</b>	<b>34</b>

**Table 1 Osh 1998 Trained - Prescribing Habits By Type of Facility**

Facility Type	# Encounters	% Female	Average # Problems	Average # Drugs	% Injection	% Generic	% Antibiotics
FAP	57	37	1.14	1.58	4	81	44
SUB	18	22	1.00	1.50	6	85	17
SVA	51	39	1.22	1.90	4	68	37
CRB	9	33	1.00	3.11	0	64	0
HOSPITAL (city&oblast)	9	33	1.22	1.78	0	100	0
<b>All Facilities</b>	<b>144</b>	<b>35</b>	<b>1.15</b>	<b>1.79</b>	<b>3</b>	<b>76</b>	<b>33</b>

**Table 1 Osh 1998 Untrained - Prescribing Habits By Type of Facility**

Facility Type	# Encounters	% Female	Average # Problems	Average # Drugs	% Injection	% Generic	% Antibiotics
FAP	86	45	1 19	1 44	14	73	31
SUB	24	29	1 04	1 42	8	50	42
SVA	15	40	1 13	1 67	13	72	47
CRB	0	0	0	0	0	0	0
HOSPITAL (city&oblast)	0	0	0	0	0	0	0
<b>All Facilities</b>	<b>125</b>	<b>42</b>	<b>1 15</b>	<b>1 46</b>	<b>13</b>	<b>69</b>	<b>35</b>

**Table 2 Osh 1996 - Frequency of Health Problems**

Health Problem	Number
Other respiratory tract infections (ORTI)	134
Diarrhea - simple	28
Nutritional deficiency	9
Miscellaneous skin and subcutaneous infections	8
Unspecified pneumonia	4
Other	3
<b>Total</b>	<b>186</b>

**1998 Trained and Untrained Table 2 Osh - Frequency of Health Problems**

Health Problem	Number
Other respiratory tract infections (ORTI)	181
Diarrhea - simple	13
Nutritional deficiency	1
Miscellaneous skin and subcutaneous infections	0
Unspecified pneumonia	23
Other	24
<b>Total</b>	<b>242</b>

1998 Trained **Table 2 Osh - Frequency of Health Problems**

Health Problem	Number
Other respiratory tract infections (ORTI)	99
Diarrhea - simple	4
Nutritional deficiency	0
Miscellaneous skin and subcutaneous infections	0
Unspecified pneumonia	19
Other	13
<b>Total</b>	<b>135</b>

1998 Untrained **Table 2 Osh - Frequency of Health Problems**

Health Problem	Number
Other respiratory tract infections (ORTI)	82
Diarrhea - simple	9
Nutritional deficiency	1
Miscellaneous skin and subcutaneous infections	0
Unspecified pneumonia	4
Other	11
<b>Total</b>	<b>107</b>

1996 **Table 5 Osh - Average Cost of Treatment By Diagnosis**

US\$	Diarrhea	ORTI	Pneumonia
<b>Sample Average Cost of Treatment</b>	3 42	1 83	14 66
<b>IMCI Average Cost of Treatment</b>	1 00	0 11	1 80*
<b>Possible savings (% of Sample Average Cost of Treatment)</b>	71%	93%	88%

\*pediatric Cotrimoxazole tablets used for calculations

1998 Trained and Untrained **Table 5 Osh - Average Cost of Treatment By Diagnosis**

US\$	Diarrhea	ORTI	Pneumonia
<b>Sample Average Cost of Treatment</b>	2 95	0 95	3 43
<b>IMCI Average Cost of Treatment</b>	1 99	1 00	2 38
<b>Possible savings (% of Sample Average Cost of Treatment)</b>	33%	0	31%

1998 Trained Table 5 Osh - Average Cost of Treatment By Diagnosis

US\$	Diarrhea	ORTI	Pneumonia
<b>Sample Average Cost of Treatment</b>	1 23	0 75	3 26
<b>IMCI Average Cost of Treatment</b>	1 99	1 00	2 38
<b>Possible savings (% of Sample Average Cost of Treatment)</b>	0	0	27%

Table 5 Osh 1998 Untrained - Average Cost of Treatment By Diagnosis

US\$	Diarrhea	ORTI	Pneumonia
<b>Sample Average Cost of Treatment</b>	3 71	1 19	4 24
<b>IMCI Average Cost of Treatment</b>	1 99	1 00	2 38
<b>Possible savings (% of Sample Average Cost of Treatment)</b>	46%	16%	44%

**KYRGYSTAN 1998**  
**OSH - Most Costly Drugs Prescribed\***

Generic/Brand Name	1996 Baseline			1998 Untrained			1998 Trained		
	Unit Cost	Qty Disp	Total Cost	Unit Cost	Qty Disp	Total Cost	Unit Cost	Qty Disp	Total Cost
co-trimoxazole 120 mg/tab	0 06/tab	668 5	40 11	0 05/tab	416	20 80	0 05/tab	643	32 15
co-trimoxazole 480 mg/tab	0 2/tab	25 75	5 15				0 08/tab	63 5	5 08
cough mixture liquid							0 003/ml	3370	10 11
ampicillin 250 mg inj				0 90/vial	37	33 30			
paracetamol 100 mg tab				0 05/tab	414 5	20 73	0 05/tab	712 5	35 63
oral rehydration salts	0 44/sach	48	21 12	0 56/sach	14	7 84	0 56/sach	8	4 48
vitamin D2 alcoholic amp for inj				1 12/amp	10	11 20			
mukaltin 50mg/tab							0 03/tab	130 5	3 92
broncholytine syrup	0 02/ml	263 5	5 27				0 03/ml	140	4 20
procaine penicillin vial for inj				1 18/vial	60 5	71 39	1 18/vial	31 05	36 64
calcium chloride 5% for inj				0 43/ml	21	9 03			
metronidazole 250 mg tab							0 28/tab	15	4 20
ferrous sulfate tab							0 06/tab	60	3 60
multivitamin tab							0 03/tab	106 6	3 20
ascorbic acid 50 mcg/amp	0 11/ml	1000	110 00						
benzylpenicillin sodium 0 5MU	0 26/vial	94	24 44						
benzylpenicillin sodium 1MU	0 4/vial	22 6	9 04						
ampicillin 500 mg inj	0 71/vial	106	75 26						
phenoxymethylpenicillin 100 mg tab	0 08/tab	58	4 64						
ampicillin and oxacillin compound inj	0 66/vial	11	7 26						
<b>Total most costly drugs*</b>			302 29			174 29			143 21
<b>Total cost of all drugs</b>			338 27			195 61			156 04

\* approximately 90% of all drugs prescribed by cost

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1

% by Cost of Most Costly Drugs Prescribed	1996 Baseline	1998 Untrained	1998 Trained
Injectable drugs prescribed	76 %	72 %	26 %
Unnecessary cough preparations prescribed (other than soothing cough syrup)	2 %	5 %	6 %

Compare % Antibacterials Prescribed to % Cases Diagnosed as ORTI, Diarrhea, and Pneumonia	1996 Baseline	1998 Untrained	1998 Trained
% of Most Costly Drugs Prescribed that were Antibacterial drugs	70 % (7/10)	43% (3/7)	36 % (4/11)
Cases of ORTI and Diarrhea	87 %	85 %	76 %
Pneumonia	2 %	4 %	14 %

Potential for Savings if the Following Unnecessary Drugs were not Prescribed	1996 Baseline	1998 Untrained	1998 Trained
Cough preparations		9 03	8 12
Other and miscellaneous	115 27	0	6 80
Total US\$	115 27	9 03	14 92
Total most costly drugs US\$	302 29	174 28	143 21
Potential savings if not prescribed	38 %	5 %	10 %

**CAIDP Pharmaceutical Prescription Analysis  
UZBEKISTAN**

**Table 1 Ferghana 1996 - Prescribing Habits by Type of Facility**

Facility Type	# Facilities	# Encounters	% Female	Average # Problems	Average # Drugs	% Injection	% Generic
FAP	9	47	40	1.4	3.0	21	89
SUB	4	19	26	1.6	3.6	32	58
SVA	14	75	39	1.4	3.8	28	84
CRB	2	11	64	1.9	3.6	27	64
HOSPITAL (city&oblast)	2	10	30	1.4	3.5	50	80
<b>All facilities</b>	<b>31</b>	<b>162</b>	<b>39</b>	<b>1.5</b>	<b>3.5</b>	<b>28</b>	<b>81</b>

**Table 1 Ferghana 1998 Trained and Untrained Prescribing Habits by Type of Facility**

Facility Type	# Encounters	% Female	Average # Problems	Average # Drugs	% Injection	% Generic	% Antibiotics
FAP	10	50	1.10	1.00	0	80	0
SUB	196	51	1.11	2.06	15	63	17
SVA	51	51	1.10	2.35	12	68	8
CRB	27	48	1.15	1.67	4	78	0
HOSPITAL (city&oblast)	0	0	0	0	0	0	0
SVP	42	45	1.14	2.12	12	71	14
<b>All Facilities</b>		<b>50</b>	<b>1.11</b>	<b>2.05</b>	<b>13</b>	<b>66</b>	<b>13</b>

**Table 1 Ferghana 1998 Trained - Prescribing Habits by Type of Facility**

Facility Type	# Encounters	% Female	Average # Problems	Average # Drugs	% Injection	% Generic	% Antibiotics
FAP	5	40	1.00	0.60	0	100	0
SUB	96	47	1.06	1.47	11	72	21
SVA	26	54	1.04	1.62	8	57	12
CRB	19	47	1.05	1.68	0	75	0
HOSPITAL (city&oblast)	0	0	0	0	0	0	0
SVP	18	33	1.00	1.22	11	86	22
<b>All Facilities</b>	<b>164</b>	<b>46</b>	<b>1.05</b>	<b>1.46</b>	<b>9</b>	<b>71</b>	<b>16</b>

Table 1· Ferghana 1998 Untrained - Prescribing Habits by Type of Facility

Facility Type	# Encounters	% Female	Average # Problems	Average # Drugs	% Injection	% Generic	% Antibiotics
FAP	5	60	1 20	1 40	0	71	0
SUB	100	54	1 15	2 62	18	58	13
SVA	25	48	1 16	3 12	16	73	4
CRB	8	50	1 38	1 63	13	85	0
HOSPITAL (city&oblast)	0	0	0	0	0	0	0
SVP	24	54	1 25	2 79	13	66	8
<b>All Facilities</b>	<b>162</b>	<b>53</b>	<b>1 18</b>	<b>2 64</b>	<b>16</b>	<b>63</b>	<b>10</b>

Table 2 Ferghana 1996 - Frequency of Health Problems

Health Problem	Number
Other respiratory tract infections (ORTI)	130
Nutritional deficiency	54
Diarrhea - simple	22
Unspecified pneumonia	14
Miscellaneous skin and subcutaneous infections	7
Other	6
Otitis media	3
<b>Total</b>	<b>236</b>

Table 2 Ferghana 1998 Trained and Untrained - Frequency of Health Problems

Health Problem	Number
Other respiratory tract infections (ORTI)	266
Nutritional deficiency	4
Diarrhea - simple	16
Unspecified pneumonia	26
Miscellaneous skin and subcutaneous infections	1
Other	15
<b>Total</b>	<b>328</b>

**Table 2 Ferghana 1998 Trained - Frequency of Health Problems**

<b>Health Problem</b>	<b>Number</b>
Other respiratory tract infections (ORTI)	119
Nutritional deficiency	2
Diarrhea - simple	5
Unspecified pneumonia	20
Miscellaneous skin and subcutaneous infections	1
Other	4
<b>Total</b>	<b>151</b>

**Table 2 Ferghana 1998 Untrained - Frequency of Health Problems**

<b>Health Problem</b>	<b>Number</b>
Other respiratory tract infections (ORTI)	147
Nutritional deficiency	2
Diarrhea - simple	11
Unspecified pneumonia	6
Miscellaneous skin and subcutaneous infections	0
Other	11
<b>Total</b>	<b>177</b>

**Table 5 Ferghana 1996 - Average Cost of Treatment By Diagnosis**

US\$	Diarrhea	ORTI	Pneumonia
Sample Average Cost of Treatment	3 22	2 79	5 57
IMCI Average Cost of Treatment	1 00	0 11	2 48*
Possible savings (% of Sample Average Cost of Treatment)	69%	96%	55%

\*averages adult and pediatric Cotrimoxazole tablets and syrup since both were prescribed

**Table 5 Ferghana 1998 Trained and Untrained- Average Cost of Treatment By Diagnosis**

US\$	Diarrhea	ORTI	Pneumonia
Sample Average Cost of Treatment	0 97	0 77	2 11
IMCI Average Cost of Treatment	0 82	0 30	3 49
Possible savings (% of Sample Average Cost of Treatment)	15%	56%	0

**Table 5 Ferghana 1998 Trained - Average Cost of Treatment By Diagnosis**

US\$	Diarrhea	ORTI	Pneumonia
Sample Average Cost of Treatment	0 67	0 47	2 04
IMCI Average Cost of Treatment	0 82	0 30	3 49
Possible savings (% of Sample Average Cost of Treatment)	0	36%	0

**Table 5 Ferghana 1998 Untrained - Average Cost of Treatment By Diagnosis**

US\$	Diarrhea	ORTI	Pneumonia
Sample Average Cost of Treatment	1 10	1 01	2 34
IMCI Average Cost of Treatment	0 82	0 30	3 49
Possible savings (% of Sample Average Cost of Treatment)	25%	70%	0

## FERGHANA 1998 - Most Costly Drugs Prescribed\*

Generic/Brand Name	1996 Baseline			1998 Untrained			1998 Trained		
	Unit Cost	Qty Disp	Total Cost	Unit Cost	Qty Disp	Total Cost	Unit Cost	Qty Disp	Total Cost
alcohol 96 2%	0 02/ml	1530	30 60	0 005/ml	6100	30 50	0 005/ml	1600	8 00
co-trimoxazole 120 mg tab	0 06/tab	134	8 04				0 11/tab	160	17 60
biseptol 480 mg tab							0 13/tab	40	5 20
cough mixture liquid	0 001/ml	3515	3 52	0 003/ml	5868	17 60	0 003/ml	1804	5 41
ampicillin 250 mg tab	0 2/tab	341 8	68 36	0 09/tab	149	13 41	0 09/tab	80	7 20
ampicillin 500 mg tab				0 29/tab	21	6 09			
paracetamol 100 mg tab				0 009/tab	552 5	4 97	0 009/tab	738	6 64
oral rehydration salts	0 44/sach	30	13 20	0 33/sach	21	6 93	0 33/sach	10	3 30
demedrol 0 5% with glucose oral				0 33/sach	19	6 27	0 33/sach	27	8 91
vitamin D spirits oral				0 19/ml	20	3 80			
mukaltin 50mg/tab				0 05/tab	214	10 70	0 05/tab	305	15 25
broncholytine syrup	0 02/ml	300	6 00	0 03/ml	75	2 25			
procaine penicillin vial for inj							0 23/vial	13	2 99
calcium gluconate 500mg tab				0 02/tab	155	3 10			
ferrous sulfate tab	0 06/tab	155	9 30	0 03/tab	370	11 10			
multivitamin tab	0 09/tab	474	42 66	0 13/tab	25	3 25			
multivitamin 60 mg syrup				0 03/ml	725	21 75	0 03/ml	225	6 75
benzylpenicillin sodium 1MU	0 4/vial	8 4	3 36	0 32/vial	78	24 96	0 32/vial	56	17 92
ampicillin 500 mg inj	0 71/vial	55	39 05						
ascorbic acid 50 mg tab	0 02/tab	205	4 10	0 03/tab	124	3 72			
ascorbic acid 500 mg oral powder				0 08/sach	30	2 40	0 08/sach	66	5 28
camphor spirits				0 04/ml	120	4 80			
magnesium sulfate 25% inj				0 42/ml	10	4 20			
lactobacterium siccum 5 dose inj				0 83/vial	5	8 30			
hydrogen peroxide solution				0 02/ml	200	4 00			
locacortene & iodochlorhydroxyquine oint	0 17/gr	280	47 60						
potassium iodide 20mcg topical liquid	0 03/ml	675	20 25						
esmarck enema	2 86/lit	6	17 16						
bromhexine tab	0 07/tab	207 6	14 53						
aminoacid mixture inj	1 14/vial	10	11 40						
polymyxin sulfate 500 IU inj	0 91/vial	10	9 10						
cotrimoxazole syrup	0 04/ml	250	10 00						
thiamine 50 mg inj	0 21/vial	30	6 30						
gamma aminobutyric acid 250 mg tab	0 05/tab	100	5 00						

cyanocobalamine 0.5 mg inj	0.14/vial	31	4.34		
furacine topical solution	0.002/ml	2205	4.41		
demedrol 50 mg tab	0.04/tab	104	4.16		
pyridoxine 50 mg inj	0.11/vial	30	3.30		
sulfocamphocanum 10 mg inj	0.19/vial	21	3.99		
norsulfazole 500 mg tab	0.06/tab	44.98	2.70		
calcium chloride oral liquid	0.006/ml	2827.5	16.97		
ascorbic acid 50 mcg oral liquid	0.11/ml	195	21.45		
benzylpenicillin sodium 0.5MU	0.26/vial	249.7	64.92		
phenoxymethylpenicillin 250 mg tab	0.09/tab	39	3.51		
<b>Total most costly drugs*</b>		<b>499.28</b>		<b>194.10</b>	<b>110.45</b>
<b>Total cost of all drugs</b>		<b>555.16</b>		<b>208.85</b>	<b>121.80</b>

\* approximately 90% of all drugs prescribed by cost

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% by Cost of Most Costly Drugs Prescribed	1996 Baseline	1998 Untrained	1998 Trained
Injectable drugs	29%	19 %	19 %
Unnecessary cough preparations prescribed (other than soothing cough syrup)	4 %	7 %	14 %

Compare % Antibacterials Prescribed to % Cases Diagnosed as ORTI, Diarrhea, and Pneumonia	1996 Baseline	1998 Untrained	1998 Trained
% of Most Costly Drugs Prescribed that were Antibacterial drugs	32%(10/31)	14% (3/21)	38% (5/13)
Cases of ORTI and Diarrhea	64%	89%	82%
Cases of Pneumonia	6%	3%	13%

Potential for Savings if the Following Unnecessary Drugs were not Prescribed	1996 Baseline	1998 Untrained	1998 Trained
Cough preparations		14 50	15 25
Other and miscellaneous	159 57	86 20	20 03
Total US\$	159 57	100 52	35 28
Total of most costly drugs US\$	499 28	194 10	110 45
Potential savings if not prescribed	32 %	52 %	32 %

**APPENDIX C**  
**“Supervisory Checklist”**  
**Implemented in Three Oblasts**  
**(Zhambul, Osh, Ferghana)**

# *Monitoring ARI Case-Management*

## **What to Monitor**

ARI Case Management	Assessment Classification Treatment Communication
Caretaker s knowledge	Home care and treatment When to come back (danger signs)
Health worker s knowledge	
Equipment and supplies	Presence of key equipment Presence of essential drugs Drug supply adequately monitored Stock out during last three months

## **How to Monitor**

Observe management of two ARI cases

Talk with HW

Talk with caretaker (exit interview)

Record review

- patient records of last ## months
- stock records of last ## months

Summary facility inspection

Feedback performance

**Assessment**

Does the HW ask

- child's age
- Is child coughing and how long
- Is child able to drink/breastfeed/eat\*
- Child has fever and how long
- Child had convulsions\*

**All questions asked**

Does the HW

- count the breaths in one minute\*
- Look for chest indrawing\*
- Look and listen for stridor\*
- Look and listen for wheeze
- Check if child is abnormally sleepy\*
- Check temperature
- Look for severe malnutrition\*
- Check the ears
- Check the throat

**All signs assessed**

**Classification**

	HW	Supervisor
very severe disease	<input type="checkbox"/>	<input type="checkbox"/>
severe pneumonia	<input type="checkbox"/>	<input type="checkbox"/>
pneumonia	<input type="checkbox"/>	<input type="checkbox"/>
no pneumonia		
acute ear infection	<input type="checkbox"/>	<input type="checkbox"/>
chronic ear infection	<input type="checkbox"/>	<input type="checkbox"/>
streptococcal throat infection	<input type="checkbox"/>	<input type="checkbox"/>
cough or cold	<input type="checkbox"/>	<input type="checkbox"/>

**Treatment**

	Dosage	Times	Days	First dose
Antibiotic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Antipyretic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bronchodilator	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Referred to hospital**   
**Classification adequate**   
**Treatment adequate**

**Communication**

Tick off whether HW discussed any of the following with the caretaker

Treatment    explain how to give (prepare dose times days)      
                   Show how to give      
                   verify comprehension of full treatment   

When come back for treatment/checkup   

Home care    continue feeding      
                   increase fluids/breastfeeding      
                   soothing treatment   

Return if    difficulty drinking/breastfeeding/eating      
                   breathing difficult      
                   breathing fast      
                   high fever      
                   child is sicker   

**At least 3 signs to return communicated**   

**HW assessed treatment, home care and signs to return satisfactory**   

HW    asks to repeat instructions on home care and returning      
           asks questions to check caretaker s comprehension      
           asks caretaker whether she has any questions

**Ask the Health Worker**

When do you refer the child to the hospital

- Very severe disease
- Severe pneumonia
- Pneumonia not better after two days treatment
- Chest indrawing
- Stridor in a calm child
- Not able to drink/breastfeed/eat
- Convulsions
- Severe malnutrition
- Abnormally sleepv/unconscious
- Fast breathing in a child under 2 months
- Fever in a child under 2 months
- Wheezing in a child under 2 months

**Knows 6 signs for referral**

as

**Ask the Caretaker**

What medicine did you get prescribed and how will you administer it

Medicine	How much each time?	How many times a day?	How many days?	All correct (Y/N)?
Antibiotic tab/syr				
Paracetamol tab/svr				
Bronchodilator				

**Caretaker knows all medicine correct**

What will you do after you leave the facility

- Does not know
- Continue feeding/breastfeeding the child
- Give more fluids/breast feed more frequently
- Come back if child gets worse

**Caretaker knows at least 2**

How will you know the child gets worse and you should come back

- Child is unable to drink/breastfeed
- Child breathes difficultly or rapidly
- Child has high or persistent fever
- Child is sicker
- Child has convulsions

**Caretaker knows at least 3 danger signs**

**Check equipment and supplies**

- Unexpired antibiotics present
- Unexpired antipyretics present
- Unexpired bronchodilator present

**Essential drugs present**

- Thermometer
- Timing device
- Tongue depressor
- Syringes
- Needles

**Essential equipment present**

- Stock cards/stock register
  - Health worker can show
  - Up to date
  - Recorded quantities match for essential drugs

**Stock records well kept**

- Stock out in last 3 months of
  - Antibiotics
  - Antipyretics
  - Bronchodilator

**No stock out of essential drugs during last 3 months**

Record review

- Signs noted
- Classification noted
- Treatment noted

**Record-keeping satisfactory**

**Supervisor's Notes** \_\_\_\_\_

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