INTRODUCTION

1.1. Background

Zimbabwe has a total land area of 390 580 square kilometers. The country is divided into 10 administrative provinces (which include the two major cities, Harare and Bulawayo) and 59 districts**.** The 2005 population estimate was 13.228 million (1) with children under-5 years of age estimated at 1.7032 million (2). The Gross National Income per capita was US$ 340 in 2006 (3). The country has experienced negative economic growth in the last eight years; - 7.9% in 2000 , -5.3% in 2005 and -4.8% in 2006 (4). The national per capita expenditure on health was US$40 in 2005 (5).

The post-independence development rapidly improved health access for the majority of people from less than 60% in 1980 to greater than 80% by 1990. However the initial unprecedented expansion of the public health sector was not supported by a progressive increase in resources for maintaining the services. In recent years, the deteriorating socio-economic environment has eroded the health gains of the past and now poses immense challenges to the public health sector. The government however remains committed to the goals of equity and quality based on a health care delivery framework that emphasizes shared responsibility, transparency and accountability (4).

Over the past eight years the country has experienced a severe economic crisis. For example, in September 2007 the rate of annual inflation was estimated at 7,982 percent. This hyper inflation rate has grossly eroded the purchasing power of the Zimbabwe dollar, caused severe foreign currency shortage, aggravated poverty and impacted

negatively on the wellbeing of the population directly and indirectly. This has contributed to unavailability of basic social services (including health services) and aggravation of food insecurity and malnutrition (4).

Availability of medicines and other supplies has been severely compromised by the severe shortage of foreign currency, and the inability of the Ministry of Health and Child Welfare (MOHCW) budget to keep up with the hyperinflationary environment. The health system has experienced chronic loss of human resources. The vacancy rate for doctors and nurses increased from 31% and 24% in 1999 to 55% and 31.4% respectively in 2002 (4).

In the public sector, the health system is organized into a hierarchical system with each higher level taking on more specialized functions as well as supervising the lower level. The district is the focus of health service delivery to the end user. Each district, both rural and urban, has a network of primary care facilities (Rural Health Centres or clinics) which are the first level of contact between the patient and the health system.

In 2004, there were 1,170 health facilities in Zimbabwe, including 881 primary rural health centres, 116 rural hospitals, 58 district hospitals, 8 provincial hospitals and 7 central/specialised hospitals. As a matter of policy, all health services in the public sector in Zimbabwe are integrated under what is called the “supermarket approach”, particularly at primary care and district level (4).

This is the context in which health services are delivered in Zimbabwe. Despite the current unfavorable economic environment, Zimbabwe has had a history of implementing an effective health system with effective child survival programmes and this is reflected by the fact that despite the ongoing severe socio-economic crisis, under-five mortality has declined according to the Demographic and Health Survey (DHS) 2005-2006 from 102 in 1999 to 82 per 1000 live birth in 2006. The country has also recorded a reduction in HIV prevalence. Measles mortality has virtually disappeared due to the implementation of the measles elimination strategies. Efforts in reducing malaria-related mortality and scaling up PMTCT and pediatric HIV/AIDS are underway.

To address the continued high morbidity and mortality in children under the age of five years, the Government of Zimbabwe adopted the Integrated Management of Childhood Illness (IMCI) strategy in 1996.

IMCI developed by WHO and UNICEF in 1994, aims to effectively and efficiently deal with the main causes of under five mortality, both in at community and the primary health facilities (6,7). The strategy promotes the implementation of a range of interventions for the prevention and management of major childhood illnesses both at the health facilities and at home. Effective implementation of the IMCI strategy requires that three interdependent components be in place viz: (i) improvement of the case management skills of health workers through the provision of locally adapted guidelines and training activities to promote their use; (ii) provision of health system support through improved district health planning and management, availability of IMCI essential drugs and supplies required for effective case management of childhood illnesses, quality

supervision at health facilities, improved referral systems, effective health information system, and efficient organization of work at the health facility; and (iii) IMCI advocacy for optimum family and community practices in relation to child health and survival (7,8,9,10). The primary care component of IMCI is centered around case management algorithms and has to date been applied in more than one hundred developing countries including the majority of African countries (11).

In Zimbabwe, training of health workers in IMCI started in 1998. Since 1998, over 1000 health workers have been trained in the country both in pre-service training, that is during basic training, before they start working in the health facilities and in-service training (training that takes place during the time health workers are working in health facilities).

IMCI is intended to build capacity of the health workers at the first level health facilities to assess, classify and appropriately treat the major childhood illnesses and counsel the caretaker. An evaluation results from Tanzania have shown that IMCI had contributed to 13% mortality reduction in children U5 years over a two years period (12).

Regular monitoring and evaluation of the Integrated Management of Childhood Illness (IMCI) strategy is part of the implementation process. In this regard an important and critical aspect of monitoring and evaluation of IMCI is that of assessment of the quality of care provided to sick children under five years of age and the availability of health system support in districts implementing IMCI.

A survey to evaluate the quality of care provided to sick children 2 months up to 5 years at first level health facilities was conducted in four districts in Zimbabwe from 6 to 10 August 2007.

The results of this survey have been shared with the Ministry of Health and Child Welfare. They have been disseminated in the 4 districts where the study was conducted and to child health partners in Zimbabwe. Finally, the study is being submitted to the Faculty of Health Sciences of the University of the Witwatersrand (South Africa) in partial fulfillment of the requirements for the degree of Master of Public Health.

1.2 Child Health status in Zimbabwe

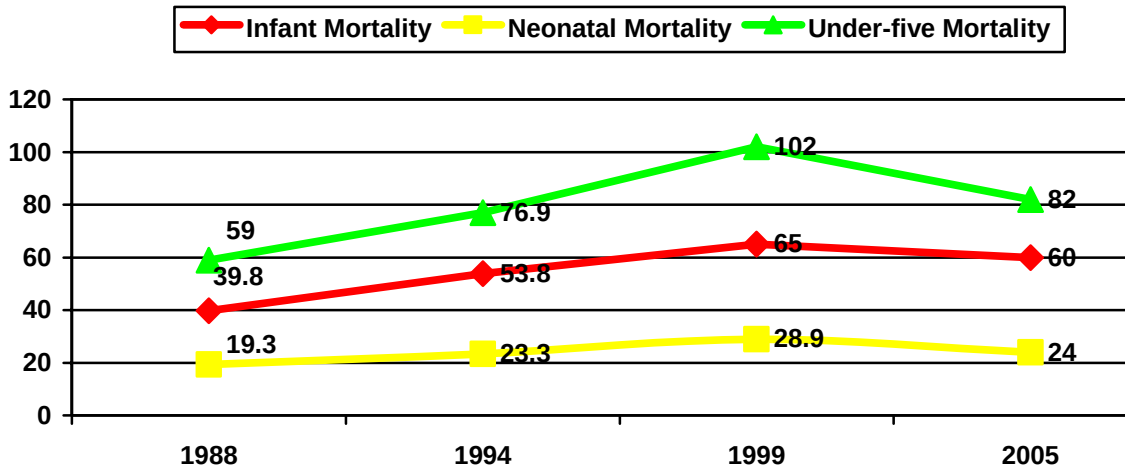
All child health services, curative as well as preventive services, are integrated into the overall health delivery system. It is generally agreed that this policy has greatly contributed to the maintenance of services under the current difficult economic conditions, allowing even addition of new programmes such as PMTCT and Vitamin A supplementation for children.

Trends in Infant and Young Child (1-4 years age) Morbidity and Mortality

Based on Zimbabwe Demographic and Health Survey 2005 the under five mortality rate in Zimbabwe stands at 82 per 1,000 live births and the infant mortality stands at 60 per 1,000 live births (Figure 1). To achieve the Millennium Development Goal (MDG) 4, Zimbabwe requires to reduce the under-five mortality by two-thirds by 2015 from the 1990 level (80 per 1000 live births). Therefore the under five mortality target by 2015 should be 27 per 1,000 live births. Because the under-five mortality rate between 1990

and 2006 increased although it has started decreasing, the overall Average Annual Rate of Reduction (AARR) of under-five mortality rate required between 2007 and 2015 is estimated at 8.6%. Between 1990 and 2006 this rate of reduction was 0.5% (13, 14, 15).

Fig. 1. **Trend of childhood mortality 1988, 1994, 1999 and 2005 (deaths per 1,000 births), Zimbabwe (Source ZDHS, 2005-06)**



As show in Figure 2, evidence from different sources shows that while under-five mortality declined in the 1980s, it started rising in the 1990s, reached a plateau in the early 2000s and started to decline (16).

Infectious diseases such as HIV/AIDS (31%), pneumonia (13%), and diarrhoeal diseases (11%) account for over 50% of the 50,000 under-five deaths estimated to have occurred in Zimbabwe in 2004 as shown in Figure 3 (17,18).

Currently, HIV/AIDS is the single biggest determinant of child survival in Zimbabwe and has been responsible for the documented rise in child mortality since the early 1990s. However, there are signs that both the rise in HIV incidence and prevalence and the rise in mortality associated with it have reached a peak and started decline with positive benefits to child survival. In fact it has been reported by the Ministry of Health and Child Welfare that Zimbabwe was the first country in Southern Africa to have reduced HIV prevalence. Prevalence fell from 20.1% to 15.6% over the past two years (19). It should therefore be reasonable to conclude that observed declines in HIV prevalence also led to the decline in infant mortality rates.

Besides the decrease in HIV incidence and prevalence, other possible contributors to observed decline in infant and child mortality could be greater access to opportunistic infection treatment for children using co-trimoxazole prophylaxis although access to ART is still low. Other factors that may have contributed to the decline of child mortality include the prevention of acute malnutrition, the successful EPI programme, scaling up of Vitamin A supplementation and the focus on malaria prevention and control in children.

Fig. 2 **Under five mortality Trends, Zimbabwe**

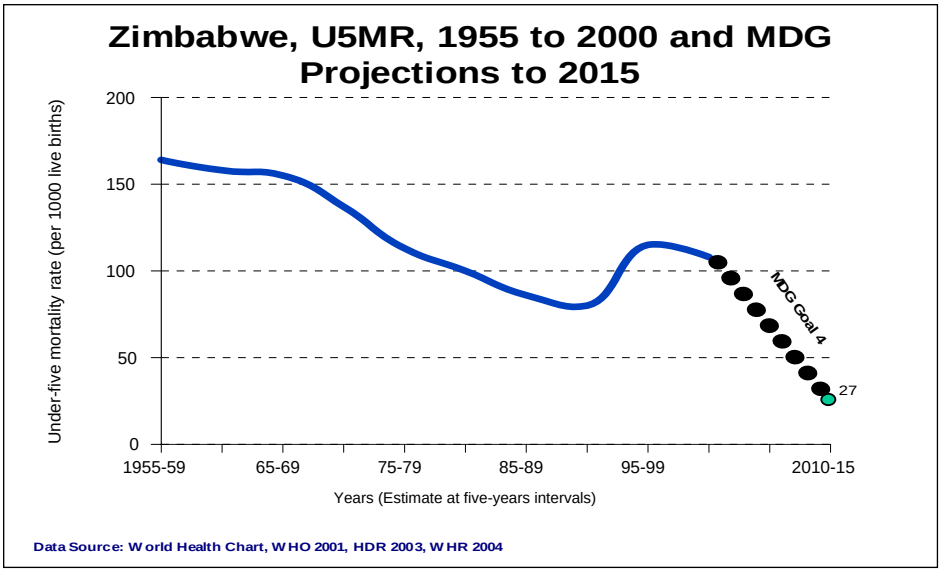
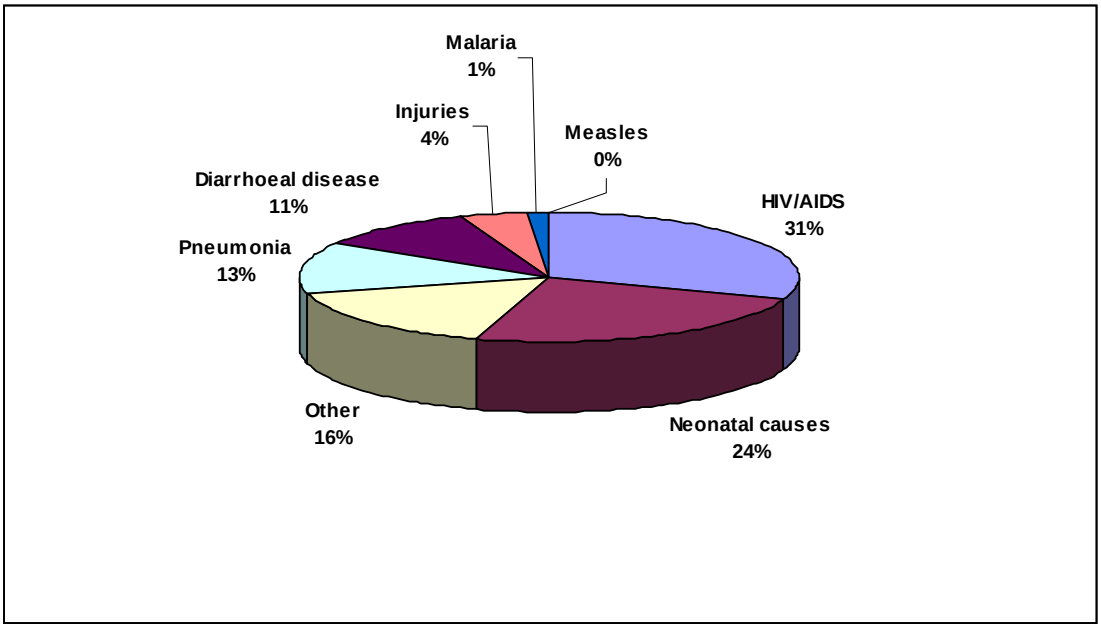


Fig. 3. **Estimated distribution of causes of under-five death, Zimbabwe, 2004**



Source: WHO, World Health Statistics, 2008

While acute malnutrition (as evidenced by wasting) is relatively low in children in Zimbabwe, chronic malnutrition (as evidenced by stunting) is not only high, but seems to be increasing (Fig. 4) with about one in three children being chronically malnourished. This may be a reflection of deteriorating household food security, though HIV and AIDS may also play a part (16).

1.3 Child Health Programmes

Various strategies/programmes have been designed and implemented to address the major causes of infant and child morbidity and mortality. These include the Integrated Management of Childhood Illness(IMCI), the Expanded Programme on Immunization (EPI), the Malaria Program and more recently,the prevention of Mother to child transmission of HIV and Paediatric HIV services.

Integrated Management of Childhood Illness (IMCI)

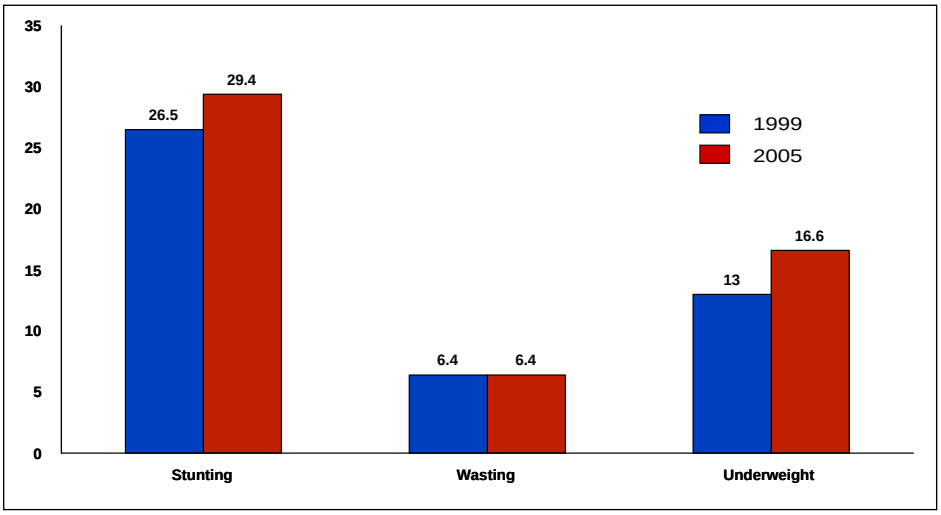
In developing countries 9.7 million children under five years of age die every year (14) most deaths are from preventable and easily treatable diseases (20). Ninety five percent of these deaths occur in just 42 less developed countries (21). It is estimated that over 60% of global child deaths could be prevented by available and affordable interventions (22). and their effective delivery is critical for achieving the Millennium Development Goal for child survival (23).

Although child survival worldwide has improved over the past 30 years, the rate of increase peaked around 1980 and there has been virtually no further improvement since

then in sub-Saharan Africa. In some countries, children's survival has even declined, and HIV/AIDS is only a partial reason (24).

The main causes of death of children worldwide are pneumonia, neonatal disorders, diarrhoea and malaria, although HIV/AIDS accounts for at least 10% of deaths in some African countries (21). Undernutrition is a major underlying cause and has been estimated to contribute to about a third of all deaths in children (25).

Fig. 4. **Nutritional Status (%), stunting, wasting and underweight, DHS, Zimbabwe, 1999 and 2005**



Effective interventions are available that could prevent more than 60% of all deaths in children (22). Yet mothers and children are not receiving these interventions and coverage remains unacceptably low (26). The Integrated Management of Childhood Illness (IMCI) is a strategy for improving children's health and development through the combined delivery of essential child health interventions. Originally, IMCI consisted of case management guidelines for sick children in peripheral first-level health facilities, to be adapted for each country (6). The strategy has now expanded to include guidelines from WHO and UNICEF for delivering interventions to increase children's survival at household, community, and referral levels, with three components: improvements in case-management; improvements in health systems; and improvements in family and community practices. By the end of 2006, the first two components of IMCI were in the early implementation or expansion phase in over 100 developing countries, including virtually all African countries (27).

The IMCI strategy was introduced in Zimbabwe in 1996 with eight districts identified to spearhead the implementation. By 2006, the first two components of IMCI (training of health workers and health system improvement) had expanded to 23 districts out of 59 districts in the country, though the third component (community IMCI) was still in only eight districts. Within those districts where training of health workers has been carried out, improving the second component (health system improvement) has been more difficult because of the current economic crisis in the country, since medicines and equipment availability and referral of patients remain a problem. IMCI training courses have been shortened from the original 11 days to 7 days to speed up expansion while maintaining the quality. Discussions between the IMCI Unit of the MOHCW and the

National Drugs and Therapeutics Practice Committee (NDTPC) has resulted in all the first line drugs for managing IMCI conditions, such as amoxicillin, being re-classified to be available at the primary care level.

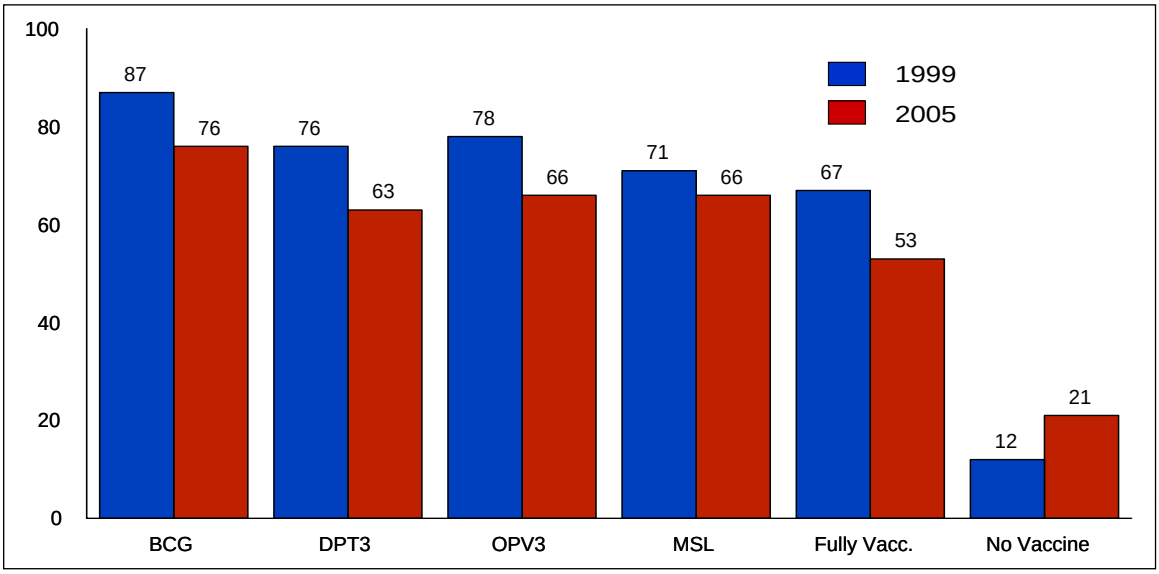
Great hope is pinned on IMCI improving the health of children. Given that IMCI is the strategy for directly addressing the leading causes of infant and young child morbidity and mortality, its scaling up is urgently necessary (4).

EPI Programme

The EPI has been relatively successful due not only to good programme management, but also to adequate funding until recently. There are no epidemics of any of the EPI target diseases any more. National immunisation days (NIDs) for poliomyelitis and measles have been held every four to five years, starting in 1998. As in other countries of Southern Africa, measles mortality has virtually disappeared following successful implementation of measles elimination strategies, including national immunization days.

Vaccination coverage reached the universal child immunization (UCI) target of 80% in 1990. However the 2005 Zimbabwe DHS revealed that 21% of children in the 12-23 months age group had not received any vaccinations at all. Figure 5 shows results from the 2005 Zimbabwe DHS indicating that DPT3, OPV3 and measles coverage were below 70% (16).

Fig 5. **Vaccination status (%), Children 12 to 23 months of age, Zimbabwe, DHS 1999 and 2005**



Malaria Programme

Zimbabwe has made significant progress towards attaining some of malaria related Abuja targets. A rapid Assessment conducted by the Ministry of Health in April 2006 in 5 of the 10 Roll Back Malaria (RBM) districts (highest malaria transmission in the country) showed that 66% of children received prompt and effective malaria treatment while 73% of pregnant women received Intermittent Preventive Therapy (IPT). However, the target had not been reached for Insecticide Treated mosquito Net (ITN) usage, with 46.8% of children under five having slept under a net the night prior to the survey while 35. 8% of pregnant women had slept under a net. The districts surveyed were: Mutasa, Centenary, Guruve, Gokwe and UMP (4).

ITNs are free for all children under five years and pregnant women in ten RBM districts, The nets are distributed through health facilities and through social marketing. In 2005, over 300,000 ITNs were distributed, while in 2006, 815,344 ITNs were distributed. Long lasting mosquito nets (LLN) are replacing the usual ITNs

HIV and AIDS, PMTCT and Paediatric HIV Services

HIV prevalence in the general population in Zimbabwe is estimated at 15.6% (HIV Estimates 2007, MOHCW Zimbabwe) while prevalence among pregnant women is also estimated at 15.6% in urban areas and at 18% outside major urban areas. There is estimated 110,000 children (0 to 14 years of age) living with HIV. (ANC Surveillance 2007, MOHCW Zimbabwe)

Treatment and management of patients, including children, with AIDS started in the public sector in April 2004 but it had started earlier in the private sector. In 2007, there were 8,237 children on ARVs out of an estimated 70,000 eligible for treatment, showing the huge gap still to be filled.

The estimated percentage of pregnant women living with HIV who received antitretrovirals for preventing mother-to-child transmission increased from 8% in 2004 to 69% in 2007. (MOHCW Annual Report 2007)

The number of infants born to women living with HIV receiving co-trimoxazole prophylaxis within two months of births was 9 975, representing a 19% coverage (MOHCW Annual Report 2007). The biggest bottleneck is scarcity of funds, particularly foreign currency to enable local manufacture or purchase of ARVs from outside.

With more than 90% HIV infection in children being due to mother-to-child transmission, an effective PMTCT programme should further accelerate the decline in incidence and prevalence among infants and young children. In 2007 PMTCT was being implemented in all districts in the country.

To increase the impact of various vertical child health programs in improving child survival, IMCI has been implemented at primary health care level to provide a holistic approach to child care. After nine years of implementation, an IMCI health facility survey was conducted in August 2007 in four districts implementing IMCI to assess the quality of care provided to sick children aged 2 to 59 months attending 1st level health facilities. This report provides the methods used for the survey, highlights key results, discusses the results and proposes recommendations for further action.

2. METHODS

2.1 Survey Objectives

2.1.1 General Objective

To assess health workers' performance in managing sick children aged 2 months up to 5 years and the health system support at first level health facilities in four districts in Zimbabwe.

2.1.2 Specific Objectives

1. To determine whether the current knowledge and practices of health workers at outpatient health facilities regarding the assessment and management of sick children aged 2 months up to five years are in conformity with IMCI guidelines,
2. To assess caretaker's understanding of prescriptions and counseling on home care done by health workers,
3. To determine the availability of drugs, vaccines and essential supplies required for the implementation of IMCI,
4. To produce estimates of health facility IMCI indicators developed by WHO.

2.2 Survey Methodology

This survey was a cross sectional analytical survey. It consisted of the following main phases: planning (one week), training of surveyors and supervisors (one week), data collection (one week), data entry and cleaning (2 days), data analysis (4 days). It is planned to hold national and districts dissemination meetings to present the findings of the survey and discuss its recommendations.

2.2.1 Planning

Plans for the survey were developed during 25-29 September 2006 in Murewa, Mashonaland East by a national planning team of the MOHCW in close collaboration with WHO. The planning team included: the national IMCI officer and four other members of the IMCI team at central level among whom was the Reproductive and child health coordinator of the MOHCW, the National Malaria Control Programme coordinator, a four-member WHO team from the country, inter-country and regional levels. Planning was an intensive process to decide on the objectives of the survey, adapt the survey instruments based on the IMCI Zimbabwe guidelines, agree on the sampling methodology, discuss plans for surveyor/supervisor training, data entry, data analysis and survey results dissemination.

2.2.2 Geographic scope of the survey and selection of health facilities to survey

From the list of all health facilities of Zimbabwe (updated at the Ministry of health for the purpose of the survey) a list of facilities was drown using the following criteria: the district has been implementing IMCI for at least 2 years, the health facility has at least one health worker trained in IMCI, the health facility can be reached by road, the facility has a minimum case load of 4 sick children per day. The result was 171 eligible health facilities, in 13 districts, in 8 provinces. (Appendix 4)

Four IMCI implementing districts were randomly selected from the above 13 districts. From these four districts, a total of 35 health facilities were randomly selected using systematic random sampling from a list of 61 health facilities (Appendix 5). The caseload threshold and the number of facilities selected aimed to ensure the recruitment of a sufficient number of children under 5 years old in the survey, i.e. an adequate sample

size, with limits of precision of the results not greater than ± 10% for the whole sample (28). Appendix 6 shows the list of facilities selected, their type and distribution in districts. Facilities were grouped into two types: Out patient department (OPD) of hospitals and health centres.

Table 1. **Final distribution of sampled health facilities by geographic location and type**

District	Distribution N=35	Type of facilities	
		OPD hospital	Health centres
Chipinge	15 (43%)	4 (27%)	11 (73%)
Mutoko	5 (14%)	2 (40%)	3 (60%)
Hurungwe	10 (29%)	2 (20%)	8 (80%)
Hwange	5 (14%)	1 (20%)	4 (80%)
Total	**35** (100%)	**9** (26%)	**26** (74%)

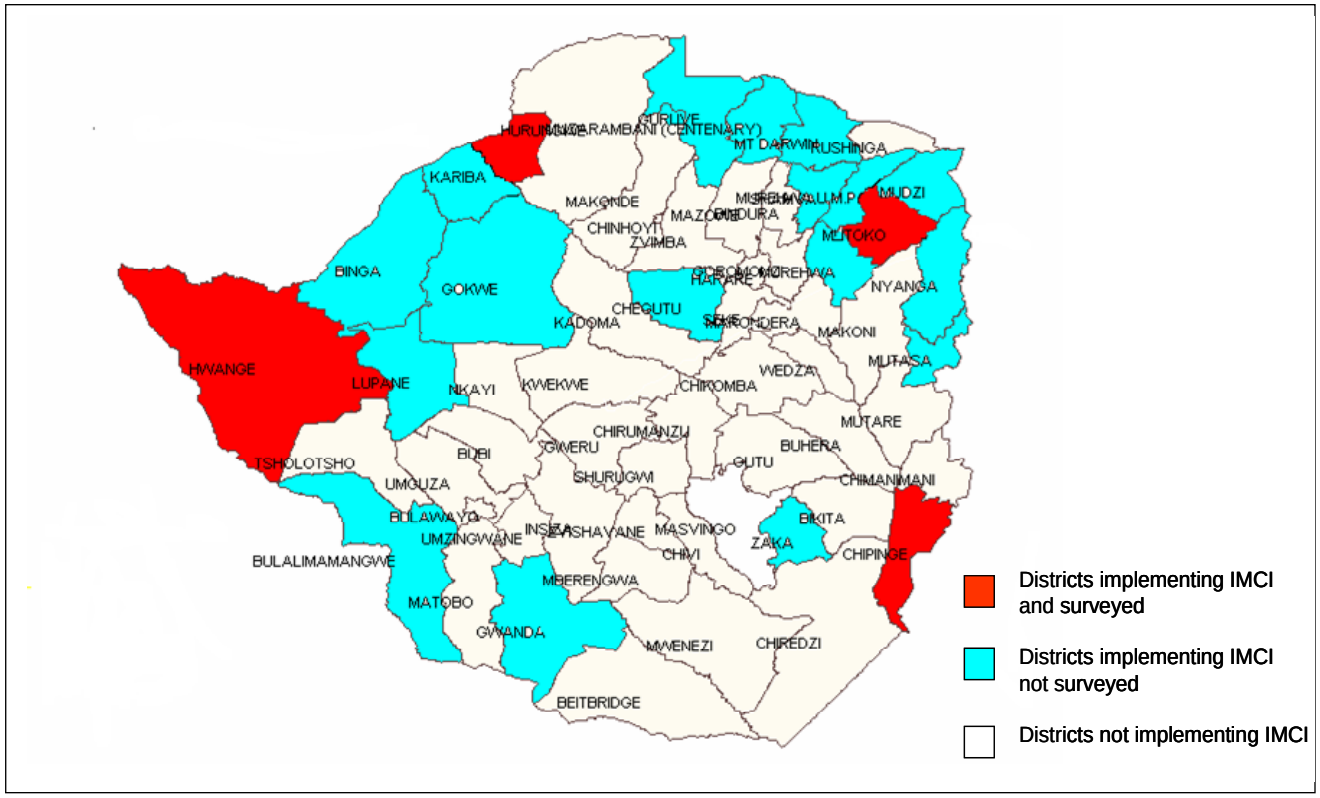
It was assumed that data gathered in the 35 health facilities would be adequate to assess the current level of quality of care provided by health providers to sick children aged 2 months up to 5 years old at facilities implementing IMCI in the 4 districts (Fig. 6) but most importantly in the 13 districts from which the 4 districts were randomly sampled.

2.2.3 Survey Procedures and Instruments

The methodology that was used in this survey was based on the one described in the manual on health facility survey developed by the World Health Organization (WHO): **Health Facility Survey:** Tool to evaluate the quality of care delivered to sick children attending outpatient facilities (28).

Data was collected using seven forms (Appendix 14). These forms had been carefully reviewed, adapted to the country situation and programme needs and tested during the survey planning and training phases.

Fig.6. **Map of Zimbabwe, districts sampled for the health facility survey**



Two consent forms and one enrollment card were designed and used to get an informed consent of the caretaker before the enrollment of the child and an informed consent of the health worker before observation. They were used to manage data collection at the facility. They were labeled as follows (0 to 000) so that the standards 4 other forms used for data analysis can maintain their original labeling (1 to 4).

Form 0: Consent Form for caretaker of the sick child

Form 00: Enrolment card

Form 000: Consent Form for health worker

The 4 forms used to analyse survey data are as follows:

Form 1: Observation of health facility provider's management of a sick child; After obtaining informed consent from the health worker, a surveyor observed each health worker during case management. The surveyor recorded what s/he heard or observed during the case management process on Form 1. This included recording observations on all the management steps from assessment, classification, treatment of the child and counseling the mother on home management if the child was not referred.

Form 2: Exit interview with the caretaker of the sick child;

A second surveyor administered this instrument. This was applied to mothers or caretakers whose children had been observed during the case management. The caretaker's understanding of prescriptions and counseling provided by the health worker on home care was evaluated.

Form 3: Re-examination of the sick child by a surveyor

The same surveyor who applied form 2 (exit interview) independently re-examined, using standard IMCI guidelines, each child who was previously managed by a health worker and observed by a surveyor. This was done in order to obtain the correct assessment and classification (diagnosis) so that this could be compared with that of the health worker. This particular surveyor who administered form 2 and 3 was carefully selected because of his/her excellent knowledge and use of IMCI Guidelines.

Form 4: Assessment of facilities, services and supplies

The supervisor used this form to record information on the facility by observing activities in the health facility, interviewing the person in-charge of the facility regarding the number of health workers in the facility and their IMCI training status, and recording the availability of essential equipment, drugs, vaccines, supplies and accessibility to mechanisms for referral.

The following three criteria for enrolment of children in the survey were all reported on the enrolment card for use by the supervisor:

1. Age (children 2 months up to 5 years old);
2. Initial visit (i.e. repeat, follow-up visits were excluded); and
3. Complaint (at least one symptom, sign or condition covered by the IMCI protocol. That is any condition specifically covered by the IMCI guidelines of MOHCW, Zimbabwe, such as those associated with general danger signs (“unable to drink or breastfeed, lethargic or unconscious, history of convulsion, vomits everything”)

and/or presenting with cough or difficult breathing, diarrhoea, fever, ear problems, malnutrition, anaemia, symptomatic HIV condition).

2.2.4 Training of Surveyors and Supervisors

A total of 14 surveyors, 7 supervisors, the WHO national professional officer, the national IMCI coordinator and the Reproductive and Child Health Coordinator of the MOHCW participated in the 40-hour surveyors and supervisors' training at Spilhouse in Harare from 31 July to 4 August 2007. Surveyors and supervisors were nurses, who had all been trained in IMCI case management, facilitation skills and had participated in follow-up visits after IMCI training. Many of them were also IMCI trainers. Thus, everybody was very familiar with the IMCI guidelines used in Zimbabwe.

The training schedule (Appendix 7) had been prepared considering the need to explain the first form thoroughly and clearly, to help the participants gradually understand the methodology of the survey and the difference existing between the procedures of this survey and the methodology used in the IMCI "follow-up visits" with which they were familiar.

For classroom practice, extensive use of examples was made, reinforced by role-plays and followed by active discussions. Surveyors then practiced how to use the forms through practical sessions at Mbare and Glenview health centres in Harare. These two facilities were not included in the survey sample. Practice consisted of observation of health centre staff's management of actual cases, interview with the child caretaker, and independent re-examination of the same cases and assessment of facility support. Practices were followed by a review in small groups of the forms completed by the

trainees. A reliability check conducted on day four of the training yielded an inter-surveyor agreement rate of 93%. This was a remarkable achievement that reflected the good selection of surveyors as well as high quality of training. Since this was the first time that such a survey was being conducted in Zimbabwe, the World Health Organization Health Facility Survey Generic forms were adapted to the Zimbabwean situation. Surveyors were given opportunities to discuss the adaptations and other relevant issues throughout the training. They played an active, dynamic and productive role which proved very valuable for the data collection process.

The survey rules to complete the forms and procedures to standardize the methodology were agreed upon and during the training. Teams had time to work together, they draw maps of the districts assigned to them, estimated mileages and fuel requirement, developed their schedules including overnight places. On the last day, a two-hour session was held to summarize all procedures and instructions with focus on those items which had caused more difficulties during the training. A one-hour session with the supervisors was held to review their responsibilities, before, during and after visiting health facilities. Finally, participants' evaluation of the training was very positive (Appendix 8).

2.2.5 Data Collection

Data was collected in the 35 health facilities from 6 to 10 August 2007. The 14 surveyors were divided into seven two-member teams, with each team directly supervised by a supervisor (Appendix 9,10). Each team was assigned an independent vehicle (so each team was composed of one supervisor, two surveyors and one driver). Five vehicles were provided by the Ministry of Health and Child Welfare, while two were hired from private

owners. Fuel was provided by the World Health Organization at the request of the MOHCW. No incident or logistical problems were noted during data collection. As fuel was not readily available in districts, all vehicles carried enough fuel in drums. Each team visited one facility per day.

Health facilities were not informed about the survey prior to the team arrival. At the health facility, the supervisor was responsible for introducing the survey team to the health worker in charge and explaining the purpose of the visit. The supervisor assured the health workers that surveyors were there to collect information about IMCI practices and not to judge them as such and no information on them specifically as individuals was included in the survey.

After obtaining the caretaker's informed consent, the supervisor identified sick children aged 2 months up to 5 years with an IMCI condition who were taken to the facility on that day and enrolled them in the survey. One of the two surveyors observed the management of these children by facility staff after seeking the health worker's consent using Form1. Soon after each child had been managed, a second surveyor interviewed the child caretaker in a separate place ("exit interview" - Form 2), to assess her level of satisfaction with the care provided and her understanding of the advice just received on drug use and/or home care. The same surveyor then examined the same child independently, so that the health providers' findings on each case could later be checked against the surveyor's findings using Form 3. Finally, the supervisor collected information on facility services, facility staff's IMCI training status, quality of supervision, case-load, availability of antibiotics/antimalarials and other drugs needed for

managing childhood illnesses, and other supply and basic equipment and materials using Form 4. At the end of the visit, a brief feedback was provided to, and comments were discussed with the staff of each facility. On average, 6 sick children were seen at each health facility visited. This ranged from 4 to 11 sick children seen in facilities visited.

2.2.6 Data entry, cleaning and analysis

All forms were checked in the field by each supervisor during data collection. Forms were then cross-checked again after the data collection, before data were entered into a computer programme using EpiInfo Version 6.04d by a five-member data entry team (Appendix 11) at the WHO country office in Harare. The data entry team was made up of experienced health information officers from the MOHCW familiar with survey data entry, cleaning and the use of EpiInfo package. The team was supported by a WHO staff member, who has supported data analysis of the same type of surveys in several East and Southern African countries.

Data was checked after it had been entered and during the preparation of data summary tables. Thus, quality control was ensured before, during and after data entry. All the information collected was then analysed, presented in tables and graphs, reviewed and discussed by the team at national level, all members of which had participated in the survey.

3 RESULTS

3.1 Sample Characteristics

Thirty five (35) health facilities were visited, namely nine hospitals, and twenty six health centre (Table 2), located in four districts implementing the IMCI strategy in Zimbabwe.

Table 2. **Facilities visited and number of case-management observations**

Planned facilities to be visited	*35*	Actual facilities visited	*35*
Cases planned to be observed	*210*	Actual cases observed	*226*

The management by health workers of 226 sick children aged 2 months up to 5 years old was observed (Sickness in this survey was defined as: any condition specifically covered by the IMCI guidelines of MOHCW, Zimbabwe as described earlier). 226 exit interviews with their caretakers were carried out and all 35 facilities were checked for health system support. This assured survey results on observation of case management within the limits of precision of ± 10%. Details of the sample characteristics by type of facility are shown in Tables 3, 4, 5 and 6, respectively.

Table 3. **Sample characteristics by facility type**

	No Children	**Percentage**
Health Centre	170	75
OPD hospitals	56	25
Total	**226**	**100**

Seventy one percent of the children enrolled and managed were under 2 years old. These children represent a more vulnerable group.

Table 4. **Age of cases observed**

	No. of cases observed	**Percentage**
2 to 11 months	89	39.4
12 to 23 months	71	31.4
24 to 59 months	66	29.2
Total	**226**	**100**

*T*he proportion of visits for female children was slightly higher than male children (52% Vs 48%).

Table 5. **Gender of cases observed**

	No. of cases observed	**Percentage**
Female	117	51.8
Male	109	48.2
Total	**226**	**100**

The large majority of caretakers who brought sick children to the health facilities were mothers (88%).

Table 6. **Caretakers of cases observed**

Caretakers	**No. of cases observed**	**Percentage**
Mothers	200	88
Others	15	7
Fathers	9	4
Info missing	2	1
Total	**226**	**100**

A large majority (88%) of sick children observed were managed by nurses.

Table 7. **Type of health workers who observed cases**

	No. of cases observed	**Percentage**
Registered Nurse	114	50
Primary Care Nurse	87	38
Midwife	7	3
Others	7	3
Clinical Officer	5	2
State Certified Nurse	4	2
Doctor	2	1
Total	**226**	**100**

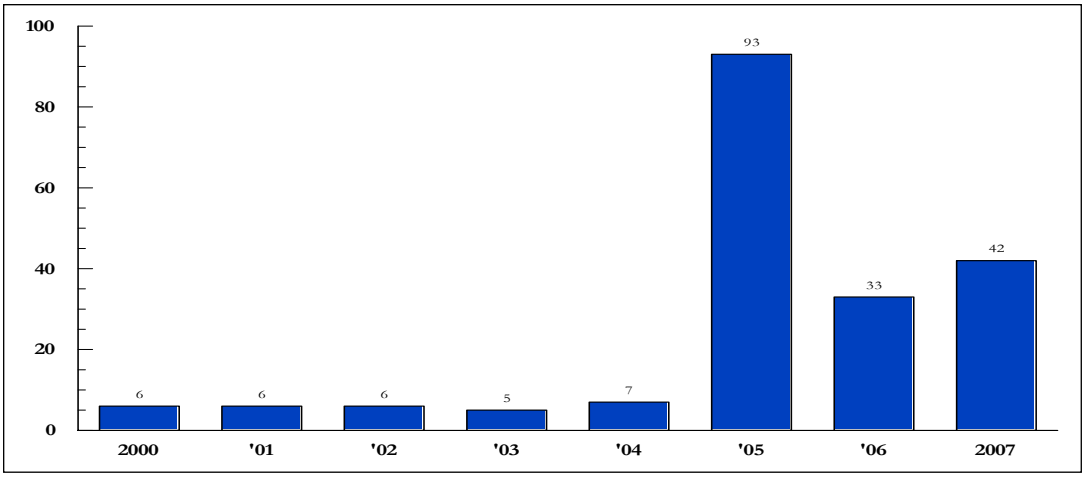
Almost 9 out of 10 (88%) of sick children observed were managed by health workers who had received IMCI training.

Table 8. **Cases observed by IMCI training status of health worker**

	No. of cases observed	**Percentage**
IMCI trained	198	87.6
Non IMCI trained	28	12.4
Total	**226**	**100**

The majority of health workers were trained during 2005, 2006 and 2007. (Fig. 7)

Fig. 7. **Health workers who managed sick children by year of IMCI training status**



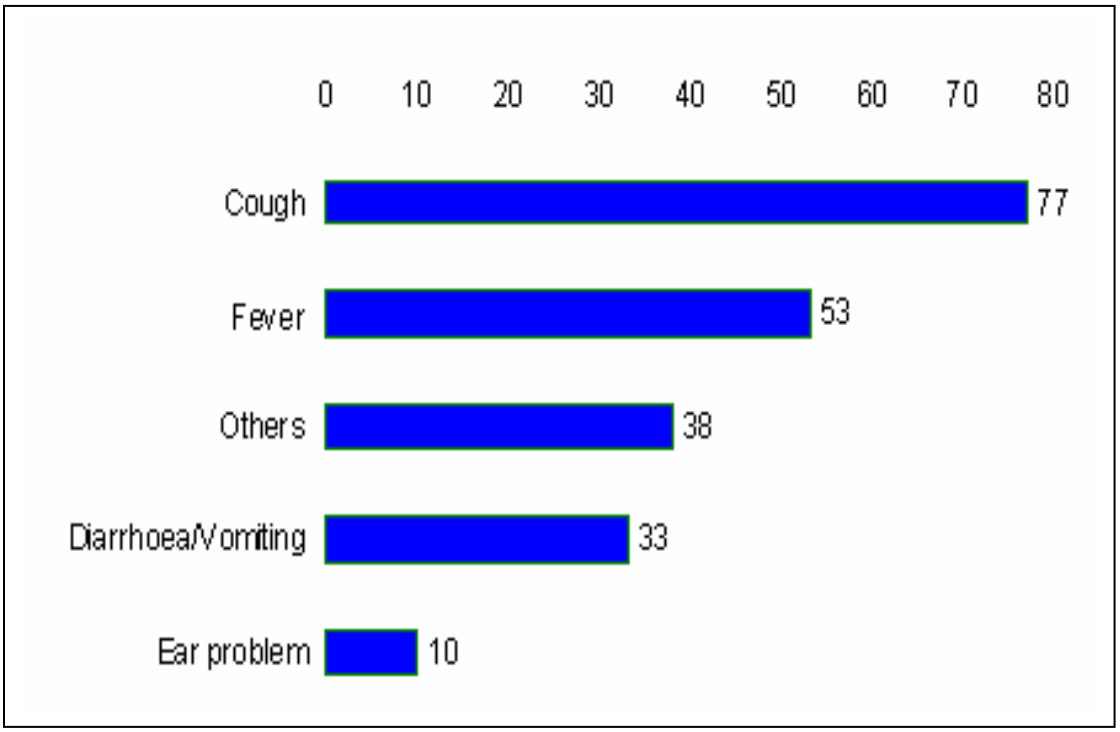
A significant proportion of cases were managed by health workers trained in IMCI pre service (43%). IMCI Pre-service consists of introducing IMCI into the teaching in basic health professional training schools so that the future health professional knows IMCI before entering the health services. This has been found to have the potential to increase coverage of IMCI trained health workers and ensure sustainability of IMCI training

Table 9. Cases observed by type of IMCI training received by health worker (In service versus pre-service)

	No. of cases observed	**Percentage**
IMCI trained (in-service)	112	57
IMCI trained (pre-service)	86	43
Total	**198**	**100**

Most children (77%) had an acute respiratory condition and over half of them (53%) were febrile or had a history of fever and a third (33%) reported diarrhoea . (Fig. 8)

Fig. 8. **Distribution (%) of the caretakers' reasons for visiting the health facility**



Classifications the sick children (done by surveyor who did Re-examination of the sick child as to ascertain the child's condition)

Table 10: **Classifications for 226 sick children**

Child classification	**IMCI classification**	**Percentage**
A. Severe classifications		
Child needing urgent referral		
Severe pneumonia or very severe disease	5	1
Severe persistent diarrhea	4	0.8
Very severe febrile disease	4	0.8
Diarrhoea with severe dehydration	2	0.4
Severe malnutrition	1	0.2
Severe complicated measles	0	0
Mastoiditis	0	0
Severe anaemia	0	0
	0	0

B. Other classifications	**IMCI classification**	**Percentage**
No Pneumonia, Cough or cold	102	20,6
Other problems	84	17
Malaria	72	14,6
Diarrhoea With no dehydration	67	13,5
Pneumonia	65	13
Fever, no malaria	42	8,5
No ear infection	16	3.2
Low weight or Growth faltering	8	1,6
Diarrhoea with some dehydration	8	1,6
Acute ear infection	6	1,2
Fever, malaria unlikely	3	0.6
Suspected Symptomatic HIV	2	0.4
Persistent diarrhea	1	0.2
Chronic ear infection	1	0.2
Dysentery	1	0.2
Measles with eye/mouth complications	0	0
Measles	0	0
Anaemia	0	0
Total: All classifications	**494**	**100%**

Fig.9 and Table 10 show that about 45% of sick children observed had malaria, pneumonia or diarrhea or a combination of the above conditions. Severe conditions requiring referral were 7% of all cases observed.

3.2 Quality of Clinical Care

A summary of selected results of the survey on the quality of clinical care is shown in Table 11. The next sections present the findings on the key components of case management in detail, namely *assessment, classification, treatment and counseling,* to describe the quality of integrated care that children received at health facilities visited.

Fig. 9. **Classifications for 226 sick children, HFS, Zimbabwe, 2007**

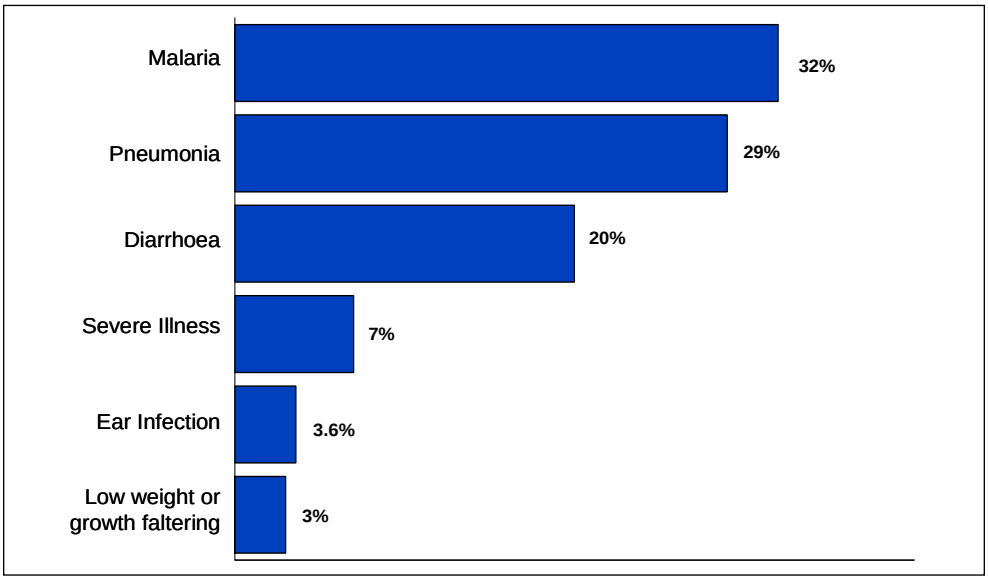


Table 11. **Summary table with selected survey results on quality of clinical care**

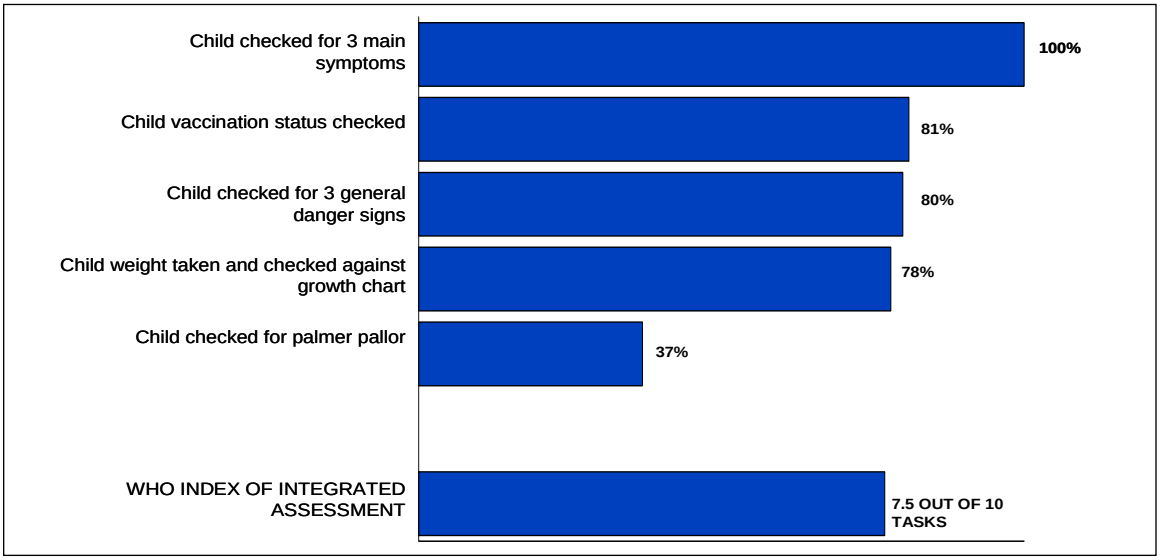
Quality of clinical care: tasks	**Findings N(%)**
Assessment	
Children checked for the presence of cough, diarrhea and fever	*226/226 (100*
Children below 2 years old and those low weight and/or anaemia assessed for feeding practices	*197/226 (87)*
Children checked for other problems	*183/226 (81)*
Child vaccination status checked	*183/226 (81)*
Children checked for three general danger signs	*181/226 (80)*
Child weight checked against a growth chart	*176/226 (78)*
Child slept under an insecticide treated net (ITN) last night	*122/206 (54)*
Classification	
Child correctly classified for main symptoms	*192/20 (95)*
Treatment	
Child with pneumonia correctly treated	*33/47 (70)*
Children needing an oral antibiotic and/or an oral antimalarial is prescribed it correctly	*93/137 (68)*
Child receives first dose of treatment at facility	*63/127 (50)*
Child with malaria correctly treated	*35/72 (49)*
Children needing vaccinations who leave the facility with all needed vaccinations	*46/96 (48)*
Child needing urgent referral is identified and prescribed urgent referral	*6/16 (38)*
Child with dehydration correctly treated	3/10 (33)
Counseling	
Children prescribed oral antibiotic and/or ORS whose caretakers is advised on how to give the treatment before leaving the facility	*108/127 (85)*
Health worker used IMCI chart booklet at any time	*141/226 (66)*
Caretaker of child who is prescribed ORS, and/or oral antibiotic and/or anti malarial and knows how to give treatment	*95/146 (65)*
Caretaker of sick child is advised to give extra fluids and continue feeding	*94/203 (46)*
Child with very low weight whose caretaker received correct counseling	*4/10 (40)*
Caretaker knows at least 2 signs for seeking care	*84/226 (37)*
Sick child whose caretaker is advised on when to return immediately	*47/2003 (23)*
Child leaving the facility whose caretaker was given or shown a mother's card (counseling tool)	*31/2003 (15)*
Caretaker of sick child is advised on her own health	*28/221 (13)*

Assessment of the sick child

The guidelines on integrated childcare (IMCI) require that a number of key assessment tasks should be performed in any sick child, irrespective of the specific complaint. This helps identify conditions that are not reported by the caretaker. To measure how complete the assessment that each child received was, an index of integrated assessment was used in the analysis. The index consists of 10 key tasks and gives equal weight to each task done (score per task done = 1). It is expressed as the mean of the number of tasks performed in each child (out of 10 tasks that should have been performed). The index of integrated assessment enables follow-up of care improvements and progress over time, taking into account each of the tasks of which it consists: the higher the number of tasks performed, the higher the index. The ten assessment tasks of the index of integrated assessment are: child checked for three general danger signs, (1,2,3), checked for the three main symptoms (4,5,6), child weighed (7) and weight checked against a growth chart (8), child checked for palmar pallor (9) and for vaccination status (10).

The index values found in this survey was a mean of 7.5 tasks performed out of 10 assessment tasks to be performed (Fig. 10). The high value of the index indicates that many children were systematically assessed for the main tasks through the IMCI protocol.

Fig. 10. **Integrated assessment: Main tasks and WHO index**



The signs that were assessed less frequently than those described above were: oedema of both feet (31 %) and visible severe wasting (18%) to detect clinical severe malnutrition.

Eighty seven percent of children under 2 years old and those with low weight or anaemia not referred by the provider were assessed for feeding practices, as recommended by the IMCI guidelines (including breastfeeding for those less than 2 years old, complementary feeding and feeding changes during illness). Also this task, which aimed at detecting and improving incorrect feeding practices, was therefore carried out in most children.

Although the IMCI guidelines focus on the most common causes of mortality and important causes of morbidity, what makes them thorough are the instructions to complete the assessment of each child by asking about other problems and assessing them if present. The caretakers of more than two-thirds of children (81%) were asked about the presence of any other problems.

Classification

Overall there was an agreement between the provider's classification and the surveyor's classification of the main symptoms in 95% of the cases.

Treatment

Management of severe cases

A total of 16 cases were classified by the surveyor as cases of a severe condition warranting urgent referral or admission to hospital.

As shown in table 11, about 70% of sick children with pneumonia received correct treatment for pneumonia. It was noted that less than half (49%) of the sick children with malaria received correct treatment for malaria.

Management of diarrhea was difficult to analyse as there were only 2 cases with severe dehydration (referred) and 8 cases with some dehydration. Only one case out of the 8 was treated correctly (prescribed ORT at the health facility as recommended by the IMCI guidelines).

IMCI promotes the provision of the 1st dose of treatment at health facilities. The survey revealed that half of the children observed (50%) received their 1st dose at the facility. Only just less than half of the children who needed vaccines left the health facilities with all the needed vaccines.

Counseling

Caretakers for children to whom an oral antibiotic/antimalarial is prescribed should be:

a) given advice on how much, how many times per day and for how many days they should give the antibiotic/antimalarial to the child;

b) shown how to give it to the child; and

c) asked open-ended questions to check for their understanding of the instructions received.

It can be assumed that if caretakers are given incorrect or no advice on treatment or are unclear about it, they may be less likely to administer it correctly to the child at home.

The last task is a key task as oral antibiotic/antimalarial treatments are delegated to families: checking for caretaker comprehension of the instructions given is the only way

to ascertain whether the caretaker has clearly understood all the instructions and to clarify any doubt before she/he leaves the facility.

In this survey, more than four caretakers in five (85%) were advised on drug treatment. As a result of the advice received, almost two third (65%) of the caretakers who had been prescribed an antibiotic/antimalarial were able to describe correctly to the surveyor during exit interviews how to give the antibiotic to the child.

Caretakers were advised on specific early danger signs that should prompt them to take the child back to the facility without delay. On recall, only 37% of caretakers were able to mention at least 2 signs for seeking care without delay.

Only 40% of the caretakers who had children with low weight received proper counseling. Showing of the mother's card as a job aid was done by the health workers in only 15% of the observations. The mother's card is a counseling aid that contains illustrated home care messages. In two third of the observations (66%) the health workers used an IMCI Chart booklet.

3.3 Health Facility Support

The survey also looked into some key aspects of health systems support that are required for the provision of quality services and affect their utilization, namely: caretaker satisfaction with the services provided; organization of work at the facility; availability of essential drugs, basic supply and equipment – including immunization – and transportation.

Table 12. **Main findings on health system support**

Health system component	**Findings(%)**
Caretakers satisfied with the child health care services	*78*
Health facilities with at least 60% of health workers managing sick children trained in IMCI	*54*
Availability of oral medicines	
Chloroquin	*97*
Sulfadoxine pyrimethamin(SP)	*94*
Cotrimoxazole	*94*
Vitamin A	*89*
Paracetamol	*86*
Iron and folate	*63*
Nalidixic acid	*49*
Amoxicillin	*46*
Mebendazole	*29*
ORS	*6*
Availability of injectable drugs for pre-referral treatment	
Benzylpenicillin	*97*
Quinine	*94*
Diazepam	*89*
Kanamycin	*86*
Availability of other injectable drugs/ products	
Sterile water for injection	*83*
Recommended IV fluid for severe dehydration	*43*
Availability of vaccines and equipments	
Health facilities have needles and autodisable syringes for vaccination	*100*
OPV	*97*
DPT	*97*
Measles	*97*
TT	*97*
HepB	*97*
DT	*97*
BCG	*94*
Health facilities have functioning fridge	*91*
Health facilities have all 7 vaccines available	*86*
Availability of equipment and materials	
Health facilities have IMCI chart booklet	*91*
Source of clean water	*86*
Thermometers	*83*
Health facilities have Blood slides	*79*
Supplies to mix Oral Rehydration Salts (ORS)	*53*
Ingredients to prepare Sugar Salt Solution (SSS)	*32*
Health facilities have Malaria rapid tests	*33*
Health facilities have Giemsa stock	*23*
Supervision	
Health facility received at least one supervisory visit that included observation of case management during the previous six months (excluding follow-up after training visits)	*11*

Most (78%) caretakers interviewed reported they were satisfied or very satisfied with the health services provided at the facilities.

Availability of drugs

Three measures – indexes – were considered about the availability at health facilities of drugs required to manage cases according to the national IMCI clinical guidelines, namely the indexes of availability of:

Essential oral treatments recommended for home treatment of pneumonia, dysentery, diarrhoea, anaemia and fever were amoxycillin, cotrimoxazole, Chloroquin/SP, ORS, nalidixic acid, vitamin A, iron, mebendazole and paracetamol). The index found a mean of 5 drugs available out of 8 drugs. Lack of ORS and/or ingredients to prepare the Sugar Salt Solution contributed to the low level of the index of availability of essential oral treatments.

Injectable drugs for one-dose pre-referral treatment for children with severe classifications needing urgent referral, namely kanamycin, benzylpenicillin and quinine. The index of availability of the above three drugs was 2.8, meaning that the three drugs were available in most facilities.

Forty three percent of health facilities visited had at least one of the intravenous solutions recommended for rehydration of diarrhoea cases with severe dehydration,

Availability of vaccines, supplies and equipment for vaccination

Most vaccines were available. 86% had all the 7 vaccines (BCG, OPV, DPT, Measles, TT, HepB, DT). The index of availability of four vaccines (BCG, OPV, DPT and

measles) was 3.9 while the index of availability of 7 vaccines was 6.7. All facilities visited had needles and auto-disable syringes for vaccination and 91 % had a functioning fridge.

Availability of other basic supplies and equipment for IMCI

The large majority of facilities visited (81%) were provided with the basic supplies and equipment needed for IMCI, including adult and baby scales, timing devices to count the respiratory rate and tap water. IMCI chart booklets were found in 91% of facilities visited. Thermometers were available in 83% of facilities.

Availability of child health services

Most facilities were reported to provide services, including child health services, six days a week. This would in principle make child health services basically available most of the time in the community served by each facility.

Supervision

Sixty six percent of the health facilities visited reported having received at least one supervisory visit during the last six months. However observation of case management was a supervisory task carried out during only 11% of the last supervisory visits conducted in the past 6 months.

Referral

Fifty seven percent of the health facilities visited reported having wanted to refer a child but were unable to do so.

4 LIMITATIONS OF THIS SURVEY

There are some limitations and potential biases noted in this study.

Surveyors and supervisors: The criteria to select surveyors and supervisors included previous training in IMCI and facilitation skills and involvement in IMCI follow-up visits after training. This enabled the selection of staff very familiar with IMCI and supervision who needed to be trained only in the survey procedures. The limitation of this choice is that people fully involved in IMCI may be unintentionally more biased than people not involved in it. This could introduce an observation bias (They may believe that IMCI improves child care, they may have received positive feed back from mothers etc). However, it would have been almost impossible to conduct a survey of this type – requiring excellent familiarity with the IMCI clinical guidelines as a prerequisite for surveyors – using staff not trained in IMCI. To reduce the effects of this bias, attention was placed on the supervision of survey activities and interpretation of data.

Health workers performance under observation: Health workers being observed may follow the IMCI guidelines more closely than they would have if they were not being observed. This may potentially over estimate the quality of IMCI implementation. It is impossible to estimate the magnitude of this bias.

Generalization of results: The results of this survey refer to the quality of care provided by health providers to children age 2 months up to 5 years old in 1st level health facilities with staff trained in IMCI. The results of this survey do not apply to the assessment of the quality of care for inpatient hospital care.

Representation of data: the results refer to the whole sample, consisting of the total of all facilities in all districts covered by the survey and meeting the enrolment caseload criteria. The sample was not stratified by district or type of facility, to limit it to a manageable size; therefore no stratified analysis was carried out. An interpretation of the results by district would not be appropriate.

Availability of drugs: the presence of just one course of treatment was sufficient to meet the definition of drug availability in this survey. Future surveys should apply definitions on drug availability that includes for example presence of a stock out of drugs in the last 3 months.

Factors underlying quality of care: The survey methodology provides measurements of the quality of care provided to sick children presenting at first level health facilities. It does not explore the reasons for the level of care observed. As a result the study was unable to determine reasons for poor performance observed. Further research is required to investigate the factors leading to poor health worker performance.

5 DISCUSSION AND CONCLUSIONS

These results should be appreciated with the background that Zimbabwe has been going through a severe economic crisis for the past 8 years. This situation has affected most severely the health system of the country. Despite the above unfavorable environment, this survey found key supportive elements of the health system in facilities where the IMCI strategy has been implemented, particularly in terms of assessing and treating sick children and the availability of the essential drugs required for IMCI, supplies and equipment.

Significant efforts to train health workers in IMCI were done since 2005. We learnt that Funds from the Global Fund to fight AIDS Tuberculosis and Malaria were used to scale up IMCI implementation. The data on case management shows that providers trained in IMCI follow a systematic approach to a sick child, according to the standard IMCI guidelines of the Ministry of Health and Child Welfare. This situation is likely to have been strongly promoted and supported not only by training courses but also through the skill reinforcement and follow-up visits after IMCI training.

The results show that 88% of the children were managed by health workers trained in IMCI. As a result, 100% of the children were assessed for the presence of 3 main symptoms of cough, diarrhea and fever, 80% were checked for the presence of 3 general danger signs. This is an encouraging development since recognition of danger signs can be critical. However only 38% needing urgent referral were identified and prescribed urgent referral. This finding is worrisome because the inability to refer a seriously sick child requiring urgent referral may affect the probability of survival. The reasons for non referral of urgent cases need to be explored and urgent remedial action taken. An

outpatient study in rural Kenya showed that the mortality risk associated with having at least one danger sign was 6.5 times higher than that for children without any signs (29,30). Numerous studies in developing countries have also established the presence of co-morbidity in many sick children and the benefits of taking an integrated approach towards assessment (31,32).

Ninety five percent of cases were classified according to IMCI guidelines. 43% of sick children were managed by health workers trained in IMCI pre-service. To our knowledge, this was the first time this information was collected in the African Region. It shows the efforts Zimbabwe has made to scale up the implementation of IMCI and make the strategy more sustainable. The scaling up of training that started in 2005 should be accelerated and reach rapidly the remaining districts. Some observations during data collection indicated that health workers trained in pre-service were less thorough. It is possible that their training may have less practical sessions. There is need to ensure that their training has enough practical sessions (about 30% of the training duration) and they receive more follow-up visits and supportive supervision for skills re-inforcement.

The IMCI approach to childcare appears to be much appreciated by the caretakers of the sick children, whose perception of quality care relies on a number of criteria that go beyond the mere drug treatment of a sick patient. In this way, the IMCI strategy acts as a powerful channel to improve the quality of services within the communities that these serve in Zimbabwe. It is generally recognized that IMCI case management protocols and approach, including counseling, should help make services more attractive to the clients and contribute to improving their reputation. Indeed according to the IMCI protocol, all

children are to be examined thoroughly, treatment is standardized, with the first dose to be administered at the facility whenever possible, and counseling is a prominent feature of the clinical process. Treatment standardization is expected to lead to rational use of antibiotics and minimize inappropriate use of antibiotics. In this study we found that 68% of children needing an oral antibiotic and/or an oral antimalarial were prescribed correctly. Although pre-IMCI measurements in these districts were not available for comparison, improvements in the case management of sick children following an IMCI intervention have been reported from Tanzania and other countries in the region. For example the inappropriate use of antibiotics in the Tanzanian study was less frequent in IMCI districts, where 86% of children not needing antibiotics left the facility without having been prescribed one, compared with 57% in the comparison districts (33). In a study conducted in Northeast Brazil to measure the effect of IMCI on the health worker performance showed significant differences between IMCI trained and non-IMCI trained health workers in the assessment of the sick child, classification of illness, and treatment of the child, as well as in communication with the caregiver of the sick child. These results were consistent with findings described in other IMCI Multi Country Evaluation sites in Tanzania and Uganda. (34).

A functioning referral system is a critical part of an appropriate health care delivery system. In this sample, about 7% of conditions seen during the vist were severe conditions requiring urgent referral. Other studies have shown that the proportion of children referred by health workers using the IMCI guidelines was 7%-16% in Ethiopia, Kenya, Gambia (35,36) . Referral is an essential part of preventing unnecessary deaths: primary health care workers should refer life-threatening illness which they are unable to

treat properly. A study conducted in Kazakhstan to determine if IMCI training would reduce the inappropriately high rate of referral in the country. The study, conducted by ZdravPlus (USAID), showed a hospitalisation rate 11% lower in the IMCI implementing sites in comparison to control sites. A significant decrease was observed in particular for diarrhoeal diseases (37).

The analysis of the results of this survey also identified some clinical and communication skills and tasks that require further emphasis in future training and follow-up visits after training. The analysis suggests that it would be beneficial to expand the scope of the IMCI strategy from the focus on illness to that of child care, both curative and preventive. The development of a child survival strategy which the MOHCW has started developing with links to the Maternal and Newborn Health Road Map is a good way forward.

The survey results show that the quality of care provided to sick children in rural health facilities in Zimbabwe is satisfactory but there is room for further improvement. Areas that need to be strengthened were identified. These include identifying children with severe illness, giving them pre-referral treatment and referring them urgently, giving first dose of treatment in the facility, management of malaria and diarrhea cases, reducing missed opportunities for vaccination and maternal health as well as counseling on when to return.

The use of IMCI guidelines which call for each child to be evaluated for the general danger signs, 4 major symptoms of cough/difficult breathing, diarrhea, fever and ear problem, nutritional status, immunization status and assessment of symptomatic HIV

need to be supported. The data on assessment shows that health workers in general and those trained in IMCI in particular follow a systematic approach to a sick child.

About 81% of the children were checked for immunization status, most of the vaccines were available, cold chain was well maintained but only about 48% of children needing vaccinations left the facilities with all the needed vaccination. This has resulted in missed opportunities for vaccination and could negatively impact prevention of illness or improvement of the sick child. IMCI guidelines recommend that sick child consultation include weighing and comparing the weight with the growth chart, in order to identify any deviation from normal. The survey shows that 78% of children had their weights checked against the growth charts. This is a good practice which should be supported as up one third of childhood mortality is associated with malnutrition that is preventable through early detection, appropriate counseling of the caretaker and prompt management (25).

The survey also revealed that 54% of the children slept under the ITN. Although this is a very small sample, the result compares well with results from a rapid assessment survey conducted by the Ministry of Health in April 2006 in 5 of the 10 RBM districts with the highest burden of malaria in Zimbabwe (Mutasa, Centenary, Guruwe, Gokwe and UMP). The results showed that 46.8% of children slept under ITN the previous night (4).

In the area of treatment and counseling, more efforts are needed. it is commendable that children with pneumonia were correctly treated in 70% of cases. The proportions for this indicator found in other surveys were: South Africa (93%), Malawi (73%), Kenya (63%)

and Mozambique (24%). (WHO Reports). It was noted that less than half (49%) of the sick children with malaria received correct treatment for malaria. In other survey conducted in malaria endemic countries this proportion was: Tanzania (71%), Malawi (68%), Kenya (42%), The low proportion of correct malaria treatment found in this survey is a major concern in view of the fact that malaria is easily treatable condition if treated timely. The reasons for this poor performance in malaria case management need to be explored urgently as it compromises the quality of care for children with fever and action taken.

It was noted that the management of diarrhea in children in Zimbabwe needs to be reviewed and strengthened. The country had successfully promoted the use of Sugar Salt Solution (SSS) for the management of diarrhea in children under five. As a result, sachets of ORS are not part of the standard list of supply of the National Pharmaceutical Company (NatPharm) and ORS was hardly found in health facilities. However due to the economic situation prevailing in the country, availability of sugar could be a problem and therefore compromise the management of diarrhea at community as well as at first level health facilities. The survey team learned that the MOHCW had taken up this matter and the country is now in the process of implementing the use of low osmolarity ORS and Zinc for the management of diarrhoea in children. The UNICEF office in the country has helped the Government procure the required amount of low osmolarity ORS and Zinc.

IMCI recommends that sick children receive their first treatment in the health facility to avoid unnecessary delay in the initiation of treatment. In this survey only 50% received their first dose of treatment at the facility. This also needs to be improved. The

proportion found in other surveys was: South Africa (62%), Mozambique (48%), Malawi (45%), and Kenya (30%). (WHO Reports)

A large majority of caretakers whose children were prescribed oral medication were advised on how to administer treatment (85%) and 65% of caretakers whose children were prescribed ORS, and/or antibiotic and/or antimalarial knew how to give treatment.

It was however observed that only 15% of caretakers were given or shown the mothers card as a job aid and only 23% of caretakers were told on when to return immediately. 13% of the caretakers of children not needing urgent referral received some advice on their own health. The poor level of counseling in this study is cause for concern. Possible reasons for inadequate attention to counseling may be pressure of work in view of the human resource crisis facing the country and indeed most sub-saharan countries and also difficulties of changing patient interaction habits on the part of the health workers. In addition the time spent on counseling during IMCI training appears to be inadequate.

The IMCI guidelines recommend that health providers should counsel the mother of the sick child about her own health if the child does not have a severe condition. The low rate of counseling on mother's health is common in many countries of the region, as IMCI training courses have to date focused on child health. This is a missed opportunity, as mothers represent 88% of all caretakers who brought sick children to the facilities in this survey and, with most children seen having mild conditions, IMCI would help build a bridge between child and maternal health. This is particularly important also for the child,

as there is a relationship between maternal health and child health. It would serve to improve pregnancy care – for mothers who are pregnant.

The availability of essential oral drugs, pre-referral injectable drugs was not optimal.

Eleven percent of health facilities surveyed received at least one supervisory visit that included observation of case management during the previous six months. This needs improvement. There is evidence that supervision can improve performance, quality of service provision, and may improve motivation and job satisfaction (38). However supervision remains one of the major problems in the health system in most African countries. IMCI recognises the importance of supervision in improving the effectiveness of the health system to deliver interventions. Supervision is the application of a set of techniques to improve the skills and the motivation of staff with a view to making them more efficient in the delivery of their tasks. Its aim as a managerial function is to promote the continuous improvement of staff in their performance

Constraints in carrying out supervision are found at:

(1) Strategic and decision-making level: Lack of political support from central level; Inadequate planning process;

(2) Organizational level: Absence of clarity in the roles and responsibilities at the different levels of the health systems; fragmentation and overlapping of supervisory activities from various players,

(3) Operational level: high turn over of the personnel, weak logistic and financial means: transport, use of different tools.

(4) Capacity building: Absence of systematic and formal training sessions of DHMT on supervision.

Despite the importance of supervision in the implementation of IMCI, reviews and health facility surveys have consistently shown that district health systems experience difficulties in conducting supervision. Health facilities that had at least one supervisory visit (that included observation of case management) during the previous six months were 53% in Zambia, 34% in Mozambique and 24% in Malawi. (WHO Reports) it is important that health leaders at national and district level give priority to supporting supervisory visits in order to motivate the personnel and to encourage staff to improve their competencies

This survey suggests that IMCI in the presence of some practical and affordable health system tools (training, drugs, referral and supervision) is feasible for implementation in Zimbabwe, and is likely to lead to improved quality of care in the health facilities. This combined with work to improve child health at community level should lead to rapid gains in child survival, if adequate resources (human, material and financial) are made available to rapidly reach high coverage levels.

As highlighted in previous paragraphs, similar surveys have been conducted in South Africa, Botswana, Mozambique, Malawi, Zambia, Tanzania, Kenya, Uganda, Ethiopia, Eritrea, Niger and Senegal. Key findings common to these studies were that IMCI case management training leads to correct assessment and classification of illnesses of children presenting to health facilities. In Tanzania where the analysis was stratified by

status of training of health workers the survey showed a statistically significant difference in the proportion of children correctly managed when health workers trained in IMCI case management examined the children. The same study in Tanzania showed that IMCI had contributed to 13% mortality reduction in children U5 years over a two years period (12).

6 RECOMMENDATIONS

6.1 At the first level health facilities

1. Use the IMCI guidelines in managing sick children under 5 years;
2. Explore reasons for some inadequacies noted in the survey and provide remedial actions as appropriately;
3. Pay special attention in identifying severe cases and provide them with correct management (this includes pre-referral treatment and urgent referral);
4. Improve management of diarrhoea, malaria and nutritional evaluation and counseling;
5. Provide first dose of treatment at the health facility and minimize missed opportunities for vaccination and mother's health.

6.2 At district and national levels

1. Support further studies to answer the question "WHY" of the weaknesses observed, especially in the areas of identifying children with severe illness, giving them pre-referral treatment and referring them urgently, giving first dose of treatment in the facility, management of malaria and diarrhea cases, reducing missed opportunities for vaccination and maternal health as well as counseling on when to return

2. Support scaling up of IMCI training. Training approaches should be reviewed to scale up availability of trained staff in order to provide equal opportunities for quality care to all children under 5 years old seen at the same facility. The use of IMCI abridged course (6 days) and acceleration of pre-service training in medical and especially nursing training institutions, will go a long way towards improving availability of trained staff. Particular attention needs to be paid to training

methodologies to ensure skills are well taught and newly graduate receive supportive supervision for skills re inforcment. This will lead to newly graduated health workers being familiar with national policies and guidelines on appropriate care of sick children at primary level health facilities

3. During IMCI training, re-enforcement and emphasis should be given to the following areas; identifying severely ill children and providing appropriate pre-referral treatment before urgent referral, general counseling and nutrition assessment and management.
4. Ensure that essential drugs, vaccines and supplies needed to manage sick children at primary level are always available.
5. Disseminate widely IMCI job aids such as chart booklets, caretakers' cards and promote their uses. These supplies should be part of the first level health facility inventories.
6. There is need to strengthen IMCI monitoring and supervision to facilitate periodic evaluation. Routine supervision that includes observation of case management should be done every 6 months in all districts.
7. Scaling up of IMCI should been seen within the overall child survival agenda of rapidly reducing under-5 mortality in Zimbabwe for the attainment of the Millennium Development Goal 4.

6.3 Partners

1. Support the implementation of the survey recommendations, especially in conduction furthers studies to answer the question WHY" for the weaknesses

observed, scaling up IMCI implementation within district and reaching the remaining districts not yet covered by the strategy.

2. Support the development of a child health strategic plan aiming at accelerating child mortality reduction.

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8. APPENDICES