Report

DATA QUALITY AUDIT – ZIMBABWE
2 – 19 October 2006

Global Alliance for Vaccines and Immunisations

EURO HEALTH GROUP
consultants

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Executive Summary

The Zimbabwe Ministry of Health and Child Welfare operates an integrated Health Information System (HIS) with detailed EPI information. The system runs manually at health facility level using pre-printed tally sheets as primary sources of data which is then monthly aggregated on to the monthly reports (T5s). From the district, provincial and national levels, all data are computerised. Reports from static clinics and outreach EPI activities are well defined and documented with EPI procedures and management guidelines. All data (including EPI data) flows from HU to District, to Province and then sent to the National level.

The annually reported DPT3<1 has increased from 318,950 in 2004 to 333,003 in 2005 (4.4 percent increase). With the exception of Harare, improvements in reported DTP3<1 were noted in the other three districts. The national coverage DPT3<1 has increased from 86.5% for 2004 to 89.3% in 2005. However, the child denominator has only increased by 1.1% from 2004 to 2005 from 368,653 to 372,708. This low increase could disguise a smaller increase in the overall coverage figure in real terms compared to the reported coverage. For example, with an increase of 2.5% in the child denominator from 2004 to 2005 the DTP3<1 coverage for 2005 will only be 88.1%. The difference between the national child denominator of 372,708 for 2005 and the tabulated value for all districts of 344,804 indicates a problem with the calculation of this denominator.

The “Drop out” rates from DTP1<1 to DTP3<1 slightly improved in 2005 to 14.5% from 15.4% in 2004. However, districts with drop out rates less than 10% increased from 16.4% to 24.6% in 2004 and 2005 respectively. 88.5% of the districts had over 80% coverage in the audit year as compared to 52.3% in the previous year. However, there are obviously difficulties in calculating a quality coverage with 20 districts out of 61 having a coverage for DTP3<1 above 100% (up to 203.8%), as illustrated by the difference between the national figure for child denominator of 372,708 for 2005 and the districts’ tabulated total denominator of 344,804. This is also illustrated by three out of the four visited districts using a denominator different from the denominator used at national level for the districts i.e. Harare with 43,107 at national level and 46,274 at district level and Mazowe with 5,774 and 6,593 and Zvimba with 6,747 and 6,940. In these instances the coverage for DTP3<1 for 2005 would change from 100.8% to 93.9%, 99.6% to 87.2% and 85.0% to 82.6% if using the district’s child denominator. These coverage rates are still over 80%, but illustrate the problem that the country should address.

The EPI programme in Zimbabwe has learnt many lessons from the previous DQA. Efforts have deliberately been made to address the issues identified during the previous audit, and improvements to address most of these issues were noted during the 2006 audit. One such improvement was to address confusion in reporting by shifting from tetravalent DTP-HBV to monovalent HBV and DTP in 2003. Proper guidance including training had been made during the current audit.

The expansion of child immunization registers to most of the districts (from the RED approach) that monitor vaccines due and track defaulters is one encouraging development that will boost immunization coverages in the country. These registers have brought in a strong linkage between Community Health Workers and community members, whereby they are able to conduct household visits to interact with parents/ caretakers and encourage/ remind them to bring their children for immunizations.

The shift to a tailor-made and more user-friendly electronic filing system at the national HMIS Office in 2004 is a very encouraging effort in supporting HMIS needs in Zimbabwe and has benefited the EPI programme. Reports were easy to retrieve and important information easy to obtain. However, issues of data validation, monitoring, timeliness and

completeness still remain a concern to the audit team if the HMIS is to achieve its maximum support and respect.

One of the major issues affecting the Zimbabwe EPI Programme is the lack of monitoring of vaccine wastage at national and district level. The potential to do so is there after introducing the effective ZEPI vaccine monitoring sheets, whereby data can easily be consolidated from HU to district and from provincial level to the national level. The programme is also compounded by unstable population figures that continue to vary through time and are declining in some targeted areas. The situation has confused managers, with many uncertain of their actual performance, making it difficult to set the right targets. In addition, targeting setting has been a historical tradition of using 100% projected population without reflecting the previous achievement. The audit clearly illustrates a problem with calculating a good quality child denominator, and denominator for pregnant women, which should be based on good quality population data and uniformly used at all levels for reporting and targeting purposes.

Specific District/HU issues are approached in the audited districts and HU sections below.

Objective of DQA:
The DQA has been designed to assist the countries receiving GAVI support to improve the quality of their information systems for immunisation data. In addition, it calculates a measure of the accuracy of reporting.

Method:
The DQA was undertaken by two external auditors together with two national auditors who worked at national level of HMIS and EPI before visiting four districts and six health facilities in each district. The four districts and 24 health facilities were selected randomly. The standard DQA method (GAVI, 2003) was applied, which included use of interviews, administration of questionnaires and recounting.

DQA Indicator Dashboard:

	2004	*2005*	***2006***	***change since 2005***
Verification Factor (>0.8) *(Compares recounted to reported DPT3)*		***0,930***		
Core Indicators:				
DTP3 Coverage	**318 950 (86.5%)**	**333 003 (89.3%)**		
Drop Out Rates	**15.4%**	**14.5%**		
Safety of Injections and Vaccine Safety	**Yes**	***Yes***	***Yes***	
Wastage Rate	***ND***	***ND***	***ND***	
Completeness of Reporting	**ND**	***85,9%***	***63%***	
Vaccine Stock-Outs		***No***	***No***	
Action Plans for Districts		***Yes***	***Yes***	***All 4 districts***
QSI at National Level		***76.0%***		
Average QSI for Districts		***76.03%***		
Average QSI for Health Units		***83.48%***		

The Quality System Index (QSI) score is very high for Zimbabwe at all three levels, with exceptionally high scores for the HUs: 16 HUs out of 24 scored above 80% and 9 HUs above 90% with one HU scoring 100%.

Summary of principal findings and prioritised issues:

Reporting: The reporting system is robust, with records properly filled and filed. The child immunization registers have strengthened the link between HU and CHWs to boost the immunization coverage in the country. The reporting system would benefit from including reporting of TT2+ for pregnant women at all levels. Vaccine stock ledgers/stock cards are available and up-to-date at the time of audit. However, despite introducing proper vaccine wastage monitoring tools, the tools are not being used to their maximum potential to inform the country regarding the actual wastage rates. The lack of use of procedures on the process to deal with late reports has led to laxity amongst those managing information, whereby deadlines are no longer either monitored or adhered to – this is a threat to any existing information system as it encourages the mushrooming of parallel/ vertical reporting systems.

Use of Data: Performance monitoring was evident at all levels during the audit. There were up to date graphs on most of the antigens both for infants and TT for pregnant women. However, use of data for wastage and stock out monitoring remains an issue.

Design: The integrated system remains one of the best that allows optimisation in the use of the resources available. The data collection and reporting tools are standard. However, the software in use, though very ideal and simple to support the country's HIS functions, currently lacks some important functions that meant those using it, particularly at district level, struggle to produce effective reports.

Key Recommendations:

- Strengthen vaccine wastage monitoring management at provincial and district levels and introduce it at national level.
- Include reporting of TT2+ for pregnant women at all levels.
- Support the finalisation of the computer software development at national level and extend the functions to district level and where possible to big hospitals/ clinics.
- Ensure timeliness of reporting is monitored at all levels of the reporting system with deadlines strictly adhered to.
- Build trouble shooting capacity skills amongst managers to ensure effective support during supportive supervision (targets determination, monitoring of timeliness, denominators etc).
- Disseminate correct population figures to all provinces, districts and health facilities and ensure that the country is using one set of population figures and denominators for children (surviving infants), pregnant women and children <5 years of age etc., which should be derived from one source and used in all health related programmes at all levels.

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1. Introduction

The Data Quality Audit (DQA) is part of the Global Alliance of Vaccines and Immunisation (GAVI) programme. It has been designed to assist the countries receiving GAVI support in improve the quality of their information systems for immunisation data. In addition, it calculates a measure of the accuracy of reporting , the country's 'verification factor' for reported DTP3 vaccinations given to children under one year of age (DTP3 <1 but also referred to as DPT3<1). In 2006, the DQA is being performed in nine countries. It is hoped that participation in the DQA will assist each country in understanding the extent and details of the verification while providing guidance on how the country's system for recording and reporting immunisation data can be improved. It is the explicit goal of the DQA to build capacities in the participating countries.

This DQA was undertaken in Zimbabwe from 2nd to 18 October 2006, by the following team:

Name	***Position***	***Districts Visited***
Maxwell Moyo	*External Auditor*	*Zvimba and Harare*
Clement Djumo	*External Auditor*	*Mazowe and Insinza*
Kenneth Chindedza	*National Auditor*	*Mazowe and Insinza*
Masikeni	*National Auditor*	*Zvimba and Harare*

The team worked at the national level of HMIS and EPI before going to district and health facility levels. There was no need to visit the Provincial level as the districts' reported immunisations data were sent to national level. Based on a random selection carried out in advance, the following four districts were visited: Mazowe, Zvimba, Harare and Insinza and six Health Units (HU) were selected randomly in each district. Only two health facilities in Mazowe and four in Zvimba Districts were non-eligible for audit because they were closed down as there was no personnel and thus reports could not be retrieved. The eligible sampled 24 HU were visited and no team visited the reserve health unit.

A debriefing meeting with the ICC was held on 18th October 2006 chaired by the ICC Chairman with representatives from Ministry of Health, EPI programme, partners (including WHO, UNICEF, HKI, DFID-UK and Rotary). A comprehensive list of persons met during the DQA including the debriefing is included in Annex 1 of this report. Major recommendations/action points discussed during the debriefing included the following:

- The challenge of different denominators after 2002's census.
- The challenge of transport and fuel for undertaking outreach sessions in the HU.

The ICC accepted these as challenges that they should address immediately.

2. Background

2.1 National Context

The population of Zimbabwe in 2004 was 11,892,000 with 385,495 children under one year Zimbabwe is divided into 9 provinces with altogether 59 districts and 3 of the largest towns (Harare, Bulawayo and Chitungwiza) constituting the 61 reporting units. District data are reported to the National Health Information Office. The reporting system is fully integrated and the flow of reports is well defined and consistent. The administrative set-up of the country is: Primary health care facilities (Health Units, mission hospitals), District Hospitals, Provincial Medical Directorates, and finally the Ministry of Health and Child Welfare Headquarters in Harare.

The Zimbabwe Expanded Programme on Immunisation was launched in 1992. It aimed at providing immunization to mothers and children against the six target diseases. In 1996 the programme was expanded to include Hepatitis B vaccination of children under one.

The vaccine launched was the combined HBV-DTP. However in 2002 the programme was forced to exchange the combined vaccine with monovalent HBV and DTP due to economical constraints.

The national Health Information System (HIS) was reviewed in 1984 with the design and implementation of the integrated reporting system that involves tallying of outpatient data, including EPI data and disease surveillance. The information is transferred to a monthly report (T5), and sent to the district office where data is computed and forwarded to the provincial Health Office for analysis and for onward transmission to the national level (the HIS office) through email.

Child health cards have been used since the launch of the EPI programme. These cards contain all important information on the medical and social history of the child, including vaccination records. Batch numbers of the vaccines are recorded together with the notation of each vaccination.

The present DQA is the second performed in Zimbabwe.

3. Key findings

3.1 Data Accuracy

Data accuracy is measured by the verification factor (VF). The latter refers to the ratio of the DTP3<1 recounted from tally sheets (or under-one immunisation registers) at the selected health facilities to the DTP3<1 reported by the health facilities to the district, which is extrapolated to the whole district and the national level. The prerequisites for a high verification factor are:

- Complete, accurate and well organised, and easily retrievable tally sheets (or under one immunization registers) for the audit year available at all health facilities.
- Complete and accurate monthly reports available at the National (district report and WHO/UNICEF Joint Reporting Form [JRF]), District (health facility and district reports), and Health Facility (health facility reports) levels.
- Most recent reported National DTP3<1 value reflects the exact number of children less than one year of age vaccinated and tallied.

The verification factor found for Zimbabwe was 0.930 (confidence interval [CI] 0.742 to 1.118). This is a big achievement compared to the first 2003 audit when the country achieved a verification factor of 0.6669 with CI 0.157 to 1.182. The main reason for a high VF can only be explained by the almost consistent data reported at all the levels including the recounts where tally sheets were available in almost all HU.

Table 1: National EPI office DTP3<1 2005. Reporting from different tabulations

2005	JRF	Last National Tabulation (Nat. Input)	Difference from JRF	National Sampling for DQA	Difference from JRF
Denominator Children <1	372,708	372,708	0	344,844	-27864
DPT3<1	331,590	333,003	1413	341594	10004
Coverage	89%	89.3%	0.3%	99.1%	10.1%

One aspect of data accuracy is the consistency of the total national DPT3<1 in 2005 reported in different sources. There was a slight difference between the WHO/UNICEF JRF and the last national tabulation of reported DTP3<1 figures of 1,413 and also the figure for national sampling for the DQA of 10,004. For the national tabulation, the extra 1,413 resulted from data updates of late reports from the districts after the JRF was already submitted, whereas that for national sampling for DQA DTP3<1 data also included 8,591 DPT3>1 immunizations from all HU in the district except for Makonde, Harare and

Zvimba. The discrepancies between the figure used for sampling for the four sampled districts and the last national tabulation for the districts were almost negligible with no big impact on the VF (60 for Insinza, 6 for Mazowe, -78 for Harare and -43 for Zvimba). However, the discrepancies between the physical reports from the districts found at district and national level (for Mazowe 6,093 at district level and 5,951 at national level with 5,751 used in national tabulations, for Zvimba 5,708-5,735-5,735, for Harare 43,357-43,357-43,470 and for Insinza 3,037-3,125-3,125) illustrates a greater lack of data consistency and accuracy.

Tally sheets were complete, well organised and retrievable in eighteen (75%) of the HU audited. Despite the recording hiccups faced in 2003 when the country changed from combined DTP/HBV to DTP only, records showed that there is marked improvement in recording at the primary source. An illustration of one HU is depicted below:

Data Consistency

Table 2: Annual DTP3<1 reported at different levels for the selected districts

	Mazowe	**Zvimba**	**Harare**	**Insiza**
Nat-Samp tab	5757	5692	43392	3185
Nat-Imp dist. Tab	5751	5735	43470	3125
Nat Dist Rep	5951 (12 reports)	5735 (12 reports)	43357 (12 reports)	3125 (12 reports)
Dist tab	6087	5708	43743	3125
Dist reports	6093 (12 months)	5708 (12 months)	43357 (12 months)	3037 (12 months)
Dist samp HU	5944	5708	43357	3125

There are inconsistencies in reporting at all the three levels in general seemingly characterized by transcription errors and lack of validation of data from each level to the other by those managing the information in all the four districts and the national level. It is questionable whether supervision encompasses data validation checks.

Table 3: National District tabulation of monthly DTP3<1 2005

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Differences Nat/ Dist
D1 - nat	580	503	431	509	554	632	421	506	470	538	357	450	
D1- dist	485	495	432	510	554	632	421	507	470	566	539	482	-142
D2 - nat	451	539	413	439	467	549	563	346	496	538	507	427	
D2- dist	442	507	397	435	463	549	576	350	496	548	521	424	27
D3 - nat	3424	3817	3877	3951	3778	3493	4017	3272	3392	3549	3427	3360	
D3- dist	3424	3817	3877	3951	3778	3493	4017	3272	3392	3549	3427	3360	0
D4 - nat	194	254	273	215	250	235	236	379	203	219	217	450	
D4- dist	182	255	273	221	250	235	242	358	203	219	217	382	88

D1- Mazowe; D2 –Zvimba; D3 - Harare; D4 - Insiza

Only district three (Harare) has twelve monthly data matching at national and district levels whereas Insiza has six districts, Mazowe four and Zvimba 2 districts matching respectively. Irrespective of whatever explanation of the inconsistencies, this illustrates that data is not properly managed in the flow from District to Province and then to National. Dual reporting by some HU from District to National and as well from Province to National should also be looked into in terms of reporting protocols to avoid duplications at

the national level. It is important to mention that there were no signs of inflated reporting or creative accounting in the figures accounted.

Figure 1: Reported and Recounted Vaccinations

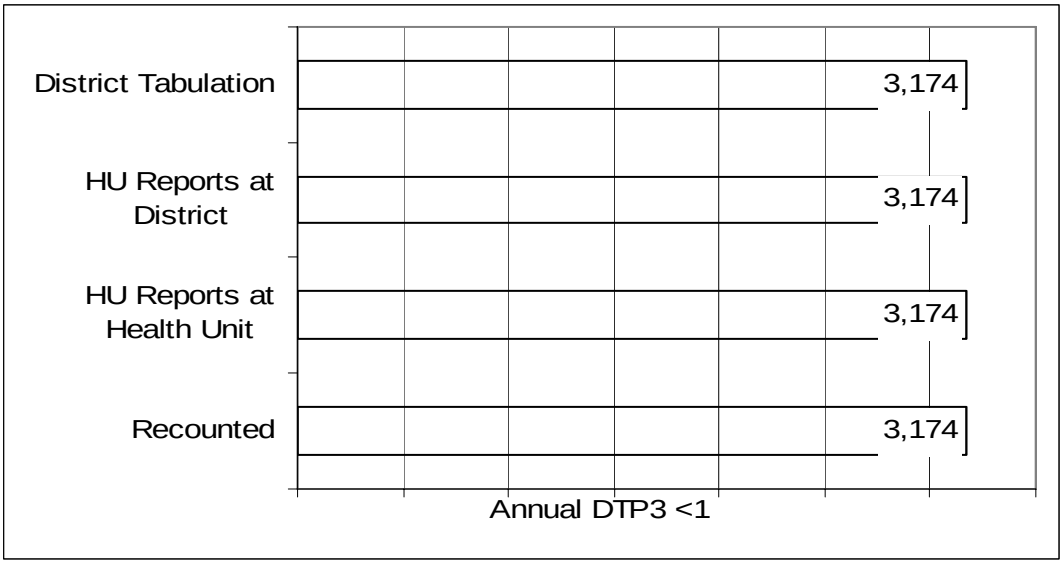


Figure 1 above of Budiriro HU in Harare illustrates consistency in reporting which was missing in most HUs where the scenario was always characterized by different reported figures mostly due to transcription errors (differences between tallied and reported figures and as well as tabulations at the district).

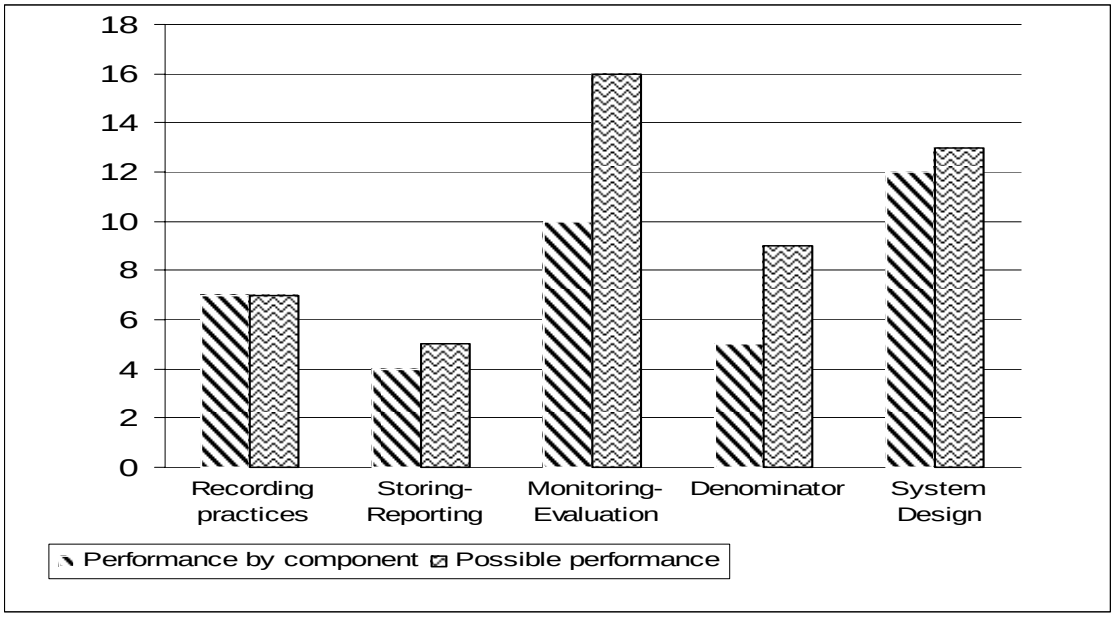
3.2 Key Issues at National Level

The quality of the system index (QSI) is a composite indicator of the overall quality of the immunization reporting system, which is calculated for each health unit and district visited, as well as for the national level. Please note the national QSI is not a composite of the scores at all other levels, but rather a score for findings at the national level only. At the national level the QSI is composed of scores in five specific areas, namely: “recording practices, storage, M&E (including feedback & supervision), denominators, and system design.”

The national level QSI average for audit year 2005 is 76.0%.
Areas that were particularly strong include:

- The recording practices in the recording of vaccines data, including batch numbers and expiry dates, was complete and up to date. Reports of previous months were done and there were sufficient tally sheets and reporting forms in all districts and HUs visited.
- System design – Reporting system is integrated from HU, District to National using pre-printed reporting formats. Standard operation procedures for EPI management and the reporting of DTP3<1 were separate. AEFI written procedures were clear to each health worker interviewed and records available at each HU.

Figure 2: A graphic presentation of the scores in the five QSI components



System Design (12/13): The computerised vaccine monitoring system at the national level was found to be well functioning. However, despite that the ordering forms and the ZEPI vaccine monitoring sheets gave information of vaccine wastage from each HU, the data was not used for monitoring.

Storing and Reporting of Data (4/5): The computerised EPI data was easily retrieved from the computers and was in very good format for use. However, the national level do not make print-outs either by district or province for filing.

Denominators (5/9): Denominators for child and tetanus immunization were consistent with the WHO definition and updated annually. However, denominators continue to decline since the 2002 census whereby there was a 10.3% decline of the denominator from 2004 to 2005 (see Figure 3 below). 22 Districts had immunization coverages greater than 100% (with as high as 203.8%), explained to be a problem with denominators. This has been explained as being due to three different versions of population sets circulated by the Ministry based on (1st) the preliminary 2002 results from which the Ministry made projections and circulated; (2nd) a set produced by the Ministry's statistical section which was different and circulated and (3rd) the final report that was released June to July 2006 and has also been circulated. The situation has caused confusion as it has affected performance (coverage) levels amongst the various programmes.

Table 4: The Coherence with Denominators, Coverage Rate and Dropout Rate

Year	Denominator (National tabulation)	Coverage (No of DTP3<1)	Dropout Rate
2004	368,653	318,950	15.4%
2005	372,708	333,003	14.5%

Monitoring and Evaluation (10/16): Completeness of reporting is well monitored for all districts and updated regularly on a computerised chart once a report is received. However, timeliness of reporting is not monitored and there were no maps posted showing performance by district. The current year immunization coverage and drop-out rates were not displayed on charts or tables. Evidence of written feedback with analysed EPI data could not be produced despite mentioning that routine feedback was being done.

National Level DTP3<1 Reporting: The figures reported in the JRF for 2005 are different from the most recent tabulation and was explained as a result of updates done at the national level on data received late from the districts.

3.3 Key Issues at District Level:

The four components of the district QSI are demographics and planning, recording, storing and reporting, and monitoring and evaluation. The QSI per district was 70.3 % for Mazowe, 78.9% for Zvimba, 68.4% for Harare and 86.5% for Insiza. The mean district score was 76.0%.

Figure 3: Quality Indicator Score from Zvimba Health District

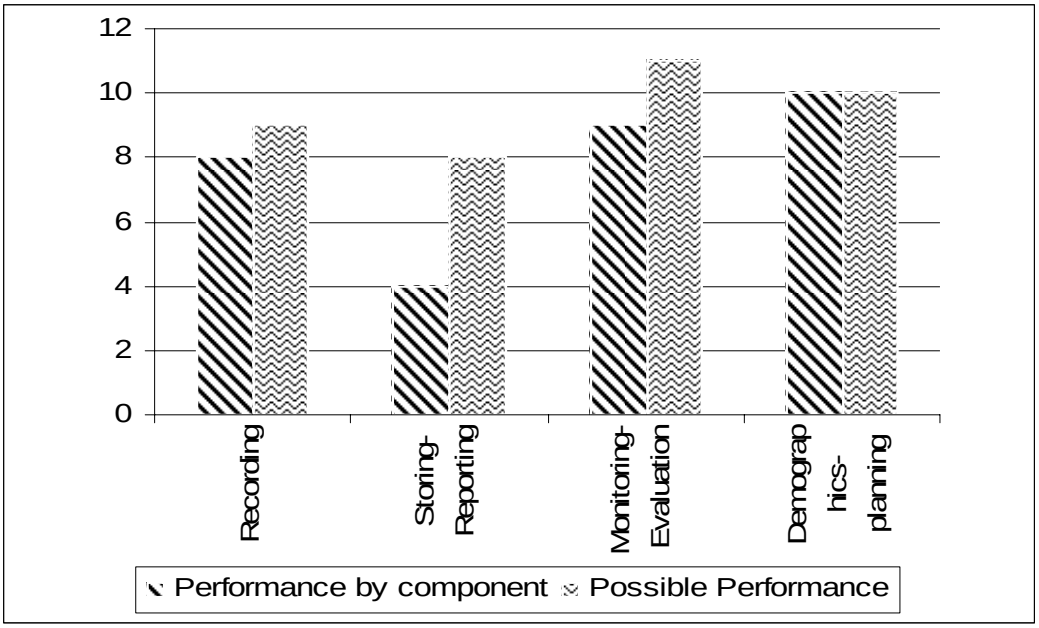


Figure 3 presents the graph of the performance of Zvimba Health District whereby the highest mean score was for demographics/planning and the lowest was for storing/reporting. This was typical for each of the four districts visited.

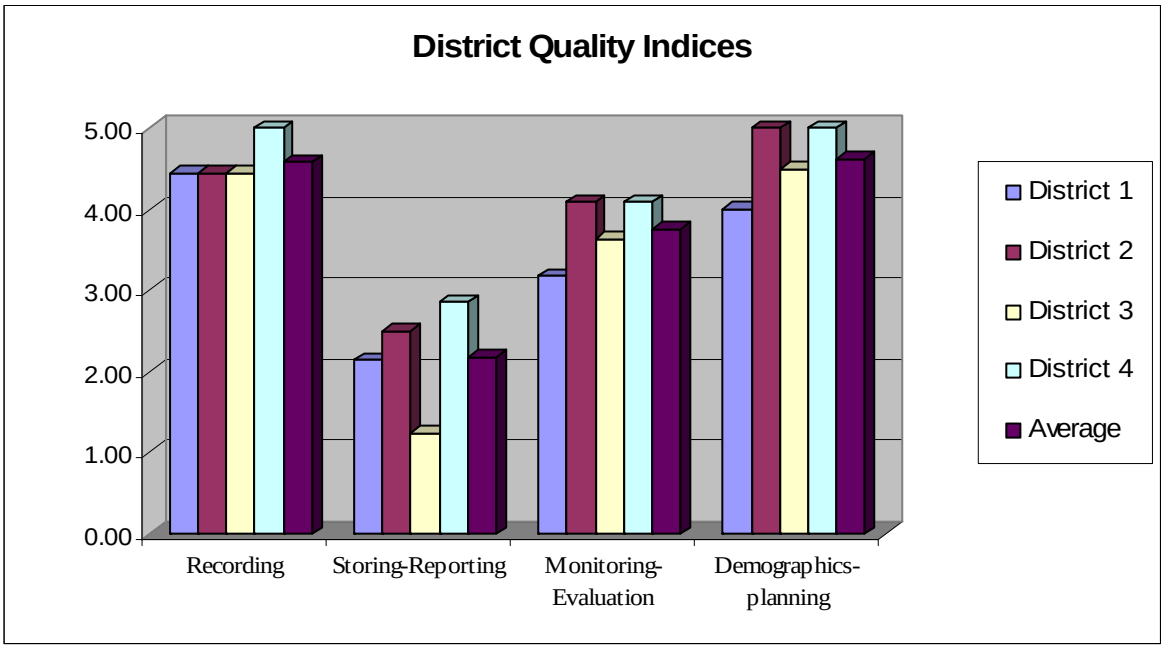
Recording: All four districts scored well in the recording component with a mean score of 4.6/5. All vaccine ledger books were up-to-date with complete vaccine receipts for the audit year. Other supplies, including syringes, are well monitored in all districts. Immunization forms used the same format in all districts, despite that Harare City has added other data elements tailored towards their local needs.
Demographics/Planning: All four districts also scored well in this area with a mean score of 4.6/5. Each district had set realistic targets both for infants and pregnant women, and had developed micro plans.

The denominator values for infant immunizations were, in three districts, different from the denominator value found at national level. Both the national and districts pointed out the problems with the figures provided from the statistics office, saying they are always questionable.

Districts maps were displayed in all the four districts to support community strategies. However, there was no awareness of the proportion of infants per strategy type in any of them.

Figure 4 below presents a graphic depiction of the QSI component scores for each district.

Figure 4: Quality Score Indicator all Districts



Monitoring/Evaluation: All four districts did fairly well in monitoring and evaluation, achieving a mean score of 3.8/5. There was evidence of demand for data by District Managers being used for monitoring programme performance as seen from the analysed data, posted charts displaying updated immunization coverages, drop out rates, and publications containing analysed data. AEFI reporting procedures are in place and all HU staff are very conversant with the procedures. Completeness of the HU reports was monitored in all districts. Despite having regular meetings with HU staff to discuss immunization data, districts were not providing written routine feedback to HU.
Despite each reporting level having a deadline for submission of reports to the national level, districts wait until all reports are received from all HUs for each reporting period before they submit a consolidated report to the national level. None of the districts is adhering to deadline dates of reporting.
Storing/Reporting: The most significant determinant of the poorer scores in this area was the absence of written backup procedures, no procedures for dealing with late reports and no written dates of printing/production on tables and charts. Thus the districts managed a meagre mean average score of 2.2/5.

Quantitative Analysis

Table 5: Performance Indicators for the 4 Districts visited, 2004-2005

District	DTP3<1 2004	DTP3<1 2005	Percentage Improvement	Drop-Out 2004	Drop-Out 2005
Mazowe	6601	6087	-7.8%	-0.3%	13.7%
Zvimba	5528	5708	3.3%	12.6%	13.5%
Harare	45482	43743	-3.8%	7.1%	12.1%
Insiza	2429	3125	28.7%	16.4%	12.3%

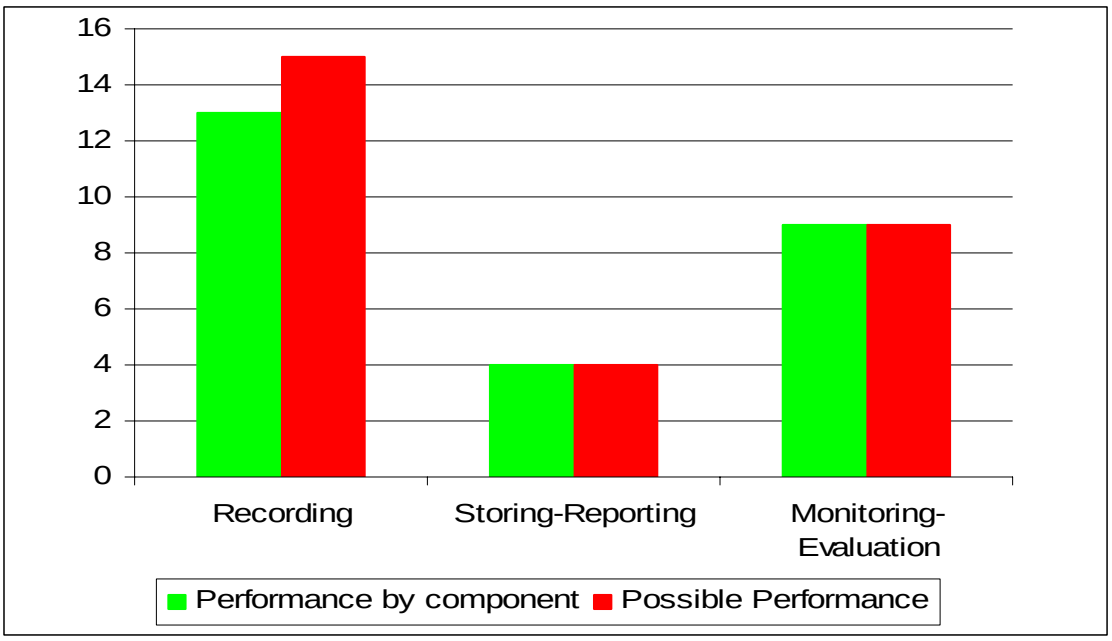
As seen from Table 5, two out of the four districts audited experienced a decrease in the absolute number of infants who received DTP3. The percentage decrease based on district data was 7.8% for Mazowe 3.8% and 3.8% for Harare. Insiza managed to improve by a remarkable 28.7% and Zvimba by 3.3%. Drop-out rates worsened in three districts in 2005 as compared to 2004, whereas Insiza District managed to reduce its drop-out rate

from 16.4% in 2004 to 12.3% in 2005. The decreased vaccination numbers in 2005 were attributed to the suspension of outreach and mobile clinics due to transport problems.

3.4 Key Issues at Health Unit Level

The three components of the Health Units QSI are recording, storing and reporting, and monitoring and evaluation. The mean HU QSI per district was 70.2% for Mazowe, 85.7% for Zvimba, 94.0% for Harare, and 83.9% for Insiza. The mean HU score was 83.48 %. Figure 5 below presents the radar graph of the performance of Wanezi Mission Hospital in Insiza district, which is typical of the 24 HUs assessed.

Figure 5: System Index by Component year 2005, Wanezi Mission Hospital, Insinza



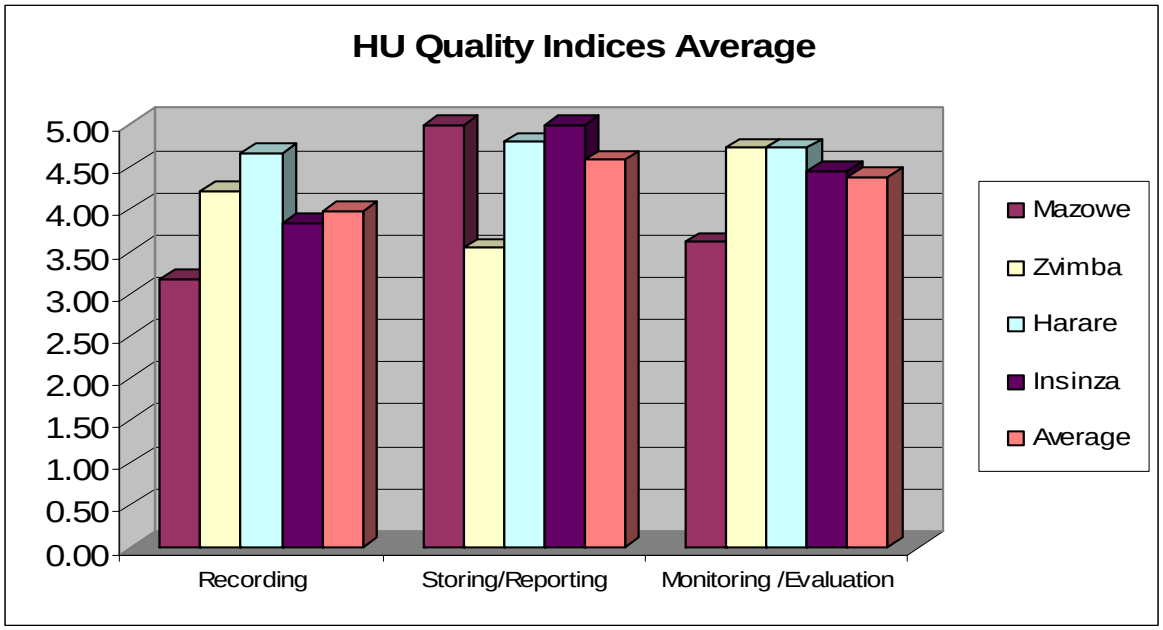
As seen from Figure 5, most HUs fared relatively well in recording and high in storing and reporting and monitoring and evaluation.

Recording Practices: Immunization recording depends on tally sheets for each antigen, as well as child health cards and registers for both infants and pregnant women. Eighteen (75%) of the twenty four HUs visited had tally sheets available and updated (an integrated tally sheet for infants and pregnant women). Only twenty (83%) HUs kept TT vaccination registers for pregnant woman and only fifteen (63%) HUs had vaccination registers for children under 1 year. The mean score was 4.0/5.

Monitoring and Evaluation: Twenty two (92%) HUs monitored wastage rates. All 24 HUs used targets for vaccination of children and pregnant woman, twenty (83%) HUs were aware of new births in their catchment areas and all used maps of catchment areas, though strategies by target groups were not known or displayed. However, the fifteen (63%) HUs with vaccination registers for children under 1 traced defaulters and twenty one (88%) HUs interacted with the community regarding immunisation. The mean score was 4.4.

Storing/Reporting: Twenty one (88%) of the HUs visited had complete immunisation reports for the audit year properly filed by date and easy to retrieve. Also we found that all 24 HUs were aware of standard operating procedures and reporting of AEFI. The mean score was 4.6/5. It is worthy to note that there is no clear policy regarding the duration for keeping records before they are destroyed or moved to an archive.

Figure 6: **Average HU Quality Indices**



3.5 Core indicators

Vaccine Safety

AD syringes and safety boxes are available and used by all the health facilities visited. No shortage of vaccine stocks were seen during the audit. Reception and issuing of AD syringes are well recorded in central and districts levels. At the level of health facilities, 58.3% (14/24) didn't have registers for AD syringes in the audit year, while almost all have AD syringes registers for the current year.

AEFI are notified by health facilities and are consistently monitored and the district compiles the synthesis monthly. All the health facilities visited had the AEFI's notification forms.

Wastage

Table 6: DQA Vaccine Wastage Rates (Weighted Means)

	Mazowe	Zvimba	Harare	Insiza
District WR (unopened)	**0,7%**	**0,0%**	**0,0%**	**0,1%**
Average WR for Hus (opened and unopened)[1]	**-4,3% (5 of the 6 HU NA)**	**91,9% (3 of the 6 HU NA)**	**65,6% (1 of the 6 HU NA)**	**13,8% (4 of the 6 HU NA)**

National WR (unopened): 0%
Weighted Mean of the 24 HU wastage rates: 40,1%

The wastage rate is not compiled at the national level from the district synthesis forms. At the district level, all 4 districts monitor wastage rates by the synthesis of forms from the health facilities. Stock cards exist at all the levels (national, district and health facilities) but were incomplete in twelve (50%) of health facilities visited. Most health workers explained

[1] Weighted mean of the 6 HUs in that district. Note beginning balance + receipts – ending balance = total use. Total units used (at all 6 HUs)/Total wasted (at all 6 Hus) = weighted mean for district

that much wastage is due to the opened vials as the policy requires them to immunize every day.

Completeness of Reporting

Completeness of reporting at national level is 84%, based on the number of HUs reported to district and reports submitted electronically to the national level via the provinces. The national level expects 18,912 individual HU reports (1576 reports/month) but had in its database 15,185 electronic reports, representing 84% coverage. Health facilities filled the integrated form (T5) which include OPD general diseases/conditions, OPD chronic diseases/conditions and EPI data and diseases, and have up to the 10th of the following month to submit the report to the DMOs. At district level, the reports are received by the Community Health Nurse and send to the District Health Information Officer, who is responsible for completion of T5, consolidation of the individual facilities T5 forms into one T5 for the whole district and submission of the T5 to the DMO. The DMOs have to supervise and validate the data and send the forms to the provincial level.

The synthesis of each district report is received at the national level by e-mail via each province where the national report is finally compiled. However, some districts in the province still submit data of individual HUs to the national level electronically, while others rely on one consolidated T5 report. The anomaly comes in as the national level count those districts that send one consolidated report as one HU without verifying how many facilities constitute that consolidated T5. In the existing database where completeness is monitored, Harare City (District) which has 31 HU has only one T5 expected every month whereas others are based on the number of HUs in the districts.

Table 7: Completeness of HU reports at District

	Mazowe	Zvimba	Harare	Insiza
Completeness HU reports at District	99,3%	92,8%	100%	96,1%

As seen from Table 7 above, all districts did well, achieving over 90% completeness reporting, ranging from 93% in Zvimba to 100% in Harare.

Other Core Indicators

The national immunization coverage rate of DTP3<1 and drop out rate (DTP1<1 to DTP3<1) are respectively of 90% and 12.7%, and the difference between notified DTP3 (2004 – 2005) is 22,644. The number of districts with proportion of DTP3<1 increased more than 80% from 31 to 56 districts (81% increase) whereby the drop out rate decreased from 15.4% to 12.7%. The percentage of districts with a drop out rate less than 10% of DTP1<1 to DTP3<1 increased from 11.47% to 31.15%. Generally, this is a good sign that things are moving in a positive direction.

Table 8 below shows these indicators in 2005 for visited districts.

District	Coverage DTP3<1 2005	Drop out rate (DTP1 &3) 2005	Variation of under one immunization 2004-2005
Mazowe	92.3%	13.7%	- 514
Zvimba	82.2%	13.5%	180
Harare	94.5%	12.1%	- 1739
Insiza	129.6%	12.3%	696

As seen from Table 8 above, all districts fared well, achieving over 80% coverage of DTP3<1. Two districts Mazowe and Harare had fewer children receiving DTP in the audit

year as compared to the previous year. However, drop outs rates were still high and above 10%.

3.6 Changes Since last DQA

Several actions have been taken following recommendations from the last DQA. Amongst these are:

- Enhanced implementation of the Under 1 Immunization registers, helping to track vaccines due as well as defaulters. CHWs including Health Promoters and Farm Workers have utilized these registers to obtain information and do house to house follow-ups to encourage/ remind parents to bring their children for immunization.
- Strengthened vaccine stock management: ZEPI vaccine stock management forms have been introduced at all health facilities providing immunizations to monitor vaccine wastage. Encouragingly, staff in all HUs have been trained on the use of these forms.
- Improved performance monitoring through the use of available data: graphs, charts and proper documentation.
- Effective supervision at all levels.
- Improved electronic HIS version (the T5) which is tailor made and user friendly at the national and district levels and all DHIOs trained.
- Marked improvement in data management at national level – easy retrieval of reports from current software. Need to extend facility to district level.
- Confusion in reporting for HBV and DPT corrected in the reporting formats.

4. RECOMMENDATIONS

4.1 Priority recommendations

- Strengthen vaccine wastage monitoring management at all levels. Currently done at the health facility, district and provincial levels but not at the national level. Data from the lower levels should be sent up to the national level to get a national picture.
- Support the finalisation of the computer software development at the national level and extend the functions to district level and where possible to big hospitals/ clinics.
- Ensure timeliness of reporting is monitored at all levels of the reporting, with deadlines strictly adhered to.
- Build trouble shooting capacity skills amongst managers to ensure effective support during supportive supervision (targets determination, monitoring of timeliness, denominators etc)
- Disseminate correct population figures to all provinces, districts, and health facilities and ensure that the country is using one set of population figures and denominators for children (surviving infants or <1 and children <5, TT2+ for pregnant women etc., which should be derived from one source and used uniformly in all health programmes.

4.2 Other recommendations

Recording

- Standardise the register used to record individual information about child immunizations.
- Add a section for recording TT given to pregnant women in the new ANC register. This data element (TT given to pregnant women) must also be clearly indicated on the integrated tally sheet.

Storing/Reporting

- Standardize protocols for late reporting

- Institute written backup procedures at the national and the district levels.

Monitoring/Evaluation
- Standardise the monitoring system of completeness of reporting.
- Institute mechanisms for proper feedback sessions to the lower levels (not ad hoc)
- The national level should monitor the vaccine wastage rate from the districts synthesis reports.

Demographics and planning
- Build trouble shooting capacity skills amongst managers to ensure effective support during supportive supervision (targets determination, monitoring of timeliness, denominators etc)

System Design
- Review T5 guidelines so that they encompass procedures on how to deal with late reporting, backup procedures, tallying of PW separate from WCBA.

ANNEXES

I. Key Informants -

II. Quality Index Analysis Table

III. Core Indicator Tables (national and 4 Districts)

a. National, district and HU performance indicators (any additional analysis that is not presented in the body of the report) represented by facility, district and country of the data quality questionnaire.

ANNEX I

KEY INFORMANTS (DISTRICT AND NATIONAL) AND HEALTH UNITS VISITED

Names and functions of those seen/visited and place and time of each visit to a facility : includes central and district staff, those attending the debriefing, and a list of the facilities visited*, but not* the names of each HU staff.

Health Units by District

Mazowe	Zvimba	Harare	Insiza
Tsungubvi	DARWENDALE	KUWADZANA	Gwatemba RHC
Concession	ZVIMBA	BUDIRIRO	Avoca Rural Hospital
Nyakudya	RAFFINGORA	RUTSANANA	Insiza (PBS) RHC
Howard	MTORASHANGA	HIGHFIELD	Zhulube Clinic
N.E.M.C	ARYSHIRE	MARLBOROUGH	Kombo Health Post
Henderson	ADA SISI	SOUTHERTON	Wanezi Mission Hospital

District 1: MAZOWE

Name	Position
Dr Solomon Mukungunugwa	DMO
Ms. Anna Chinyemba	Acting Provincial Nursing Officer
Ms. Martha Chokukaidzana	Acting Community Health Sister
Ms. Mapuranga Shupitai	District Health Information Officer
Ms. Scholastica Muparutsa	Provincial EPI Officer
M. Nyamayaro	Provincial Health Information Officer

District 2: ZVIMBA

Name	Position
Dr W. Nyamayaro	Provincial Medical Director
M. Utseya	Provincial EPI Officer
Sande S.	
Chikwekwema A.V.	District Health Services Administrator
Marufu F.	DNO
Chivende	Community Health Nurse

District 3: HARARE

Name	Position
Queen Nanyanga	Senior Health Officer
Mildred Bosha	Research Officer
Gnatius Mharadzirwa	Health Officer
Nhlanhia Koni	Senior Research Officer
Queen Nanyanga	Senior Health Officer

District 4: INSIZA

Name	Position
Dr Mkandla	Acting DMO
Ms. Angelia Ndlovu	Provincial EPI Officer
Ms. Bekezela Ndlovu	Acting DNO

Ms. Thokozile Dliwayo	Acting Community Health Sister
Ntabisa Ncube	Health Information Assistant
Solomon Kapelo Moyo	EPI technician

National Level	
Name	**Position**
Dr E. T. Mabiza	Permanent Secretary
Dr DG Dhlakama	D.TS
Dr Festo P. Kavishe	Unicef Representative
Dr SM. Midzi	DDDPC
Kenneth Chindedza	EPI Logistics Manager
Gloria Nkomo	EPI Officer
Munée Matova	EPI Stores Office
M.N. Munyoro	NPO/ EPI
Chambunta Sabastian	Logistician
Margaret Nyandobo	Coordinator EPI
J. Katiyo	A/ Health Information and Surveillance Coordinator
B. Masvikeni	Health Information Ass. EPI
Debriefing	
Name	**Position**
SG C Simbi	MOHCW
C Machena	MOHCW
D Panagides	HKI
K. Chindedza	MOHCW
J Z Chiware	MOHCW
B Makunike	WHO
C Hakulandaba	Rotary
R Monash	UNICEF
C Kibassa	UNICEF
A Beattie	DFID – UK
R Matema	UNICEF
J Katiyo	MOHCW
M Kamupota	MOHCW
S Midzi	MOHCW
D MacDonald	Rotary (Chairman)
R Haller	Rotary
W Sithole	MOHCW
B Masvikeni	MOHCW
P L Beyar	ICST/WHO
M Mumba	ICST/WHO
L Kamara	WHO HQ
H Kamaragi	WHO/Kenya
A Onyeze	ICST/WHO
M Munyoro	EPI/WHO
G Nkomo	MOHCW

ANNEX II

CORE INDICATORS TABLES

Core indicators at National level

	JRF	Reported at time of audit
Districts with DPT3<1 coverage > 80%	49 (80,33%)	54 (88,52%)
Districts with measles<1 coverage > 90%	22 (36,1%)	27 (40,1%)
Drop-out rate	NA	15%
Type of syringes	AD syringes	AD syringes
Districts with AD syringes	100%	100%
Introduction HVB	1996	1996
Introduction Hib	No	No
Vaccine wastage DPT	ND	ND
Wastage rate HVB	ND	ND
Wastage rate Hib	NA	NA
Interruption in vaccine supply 2005		No
Number of Districts with interruption in vaccine supply 2005	0	0 in the 4 districts
% District disease surveillance reports received/expected	100%	85,9%
% District coverage reports received/expected		85,9%
% District coverage reports received on time		63%
Number of District supervised at least once in 2005		61
Number of Districts which supervised all HUs in 2005		All the 4 districts visited
Number of Districts with microplans including routine immunisation		All the 4 districts visited

Core indicators at District level

		Mazowe	Zvimba	Harare	Insiza
District DPT3 coverage	At national	5 757 (100%)	5 692 (84%)	43 392 (101%)	3 185 (132%)
	At District	6 087 (105,4%)	82%	43 743 (95%)	3 173
District measles coverage	At national[2]	5 488 (95%)	5 288 (78%)	41 119 (95%)	2 580 (107%)
	At District	5 829 (101%)		41 982 (91%)	4 123
District Drop-out DPT1-3[3]	At national	13,6%	13,0%	12,1%	11,3%
	At District	13,7%	12,8%	12%	11,20%
Syringes supplied in 2005	At national				
	At District		44 727	501 750	8 300
Number of District coverage reports received/sent	At national	12/12	12/12	12/12	12/12
	At District	12/12	12/12	12/12	/12
Number of coverage reports received on time/sent on time	At national				
	At District				
Number of HU coverage reports received/sent	At national				
	At District	99,3%	92,8%	100%	96,1%
Number of HU reports received/sent on time	At national				
	At District				
District vaccine stock out	At national	NA	NA	NA	NA
	At District	Yes	No	No	No
Has the District been supervised by higher level on 2005	At national				
	At District	Yes	Yes	Yes	Yes
Has the District been able to supervise all HUs in 2005	At national				
	At District	Yes	Yes	Yes	Yes
Did the District have a microplan for 2005	At national				
	At District	Yes	Yes	Yes	Yes

[2] Information not collected at national level.
[3] Unable to estimate due to the fact that the HMIS does not routinely collect DPT1 data.

ANNEX III

QUALITY INDEX ANALYSIS TABLE

District Quality Indices and District average (over 5)

	Recording	Stor/Repo	Monitoring	Demo/Pla
Mazowe	**4,4**	**2,1**	**3,2**	**4,0**
Zvimba	**4,4**	**2,5**	**4,1**	**4,5**
Harare	**4,4**	**1,3**	**3,6**	**4,0**
Insiza	**5,0**	**2,9**	**4,1**	**5,0**
District Average	**4,6**	**2,2**	**3,8**	**4,6**

HU Quality indices and HU average (over 5)

	Mazowe				Zvimba		
	Record.	Stor/Rep.	Mon/Eval		Recording	Stor/Repo	Mon/Eval
Tsungubvi	**4,3**	**5,0**	**4,4**	DARWENDALE	**4,7**	**3,8**	**5,0**
Concession	**3,7**	**5,0**	**4,4**	ZVIMBA	**4,7**	**3,8**	**3,3**
Nyakudya	**2,3**	**5,0**	**3,9**	RAFFINGORA	**4,3**	**1,3**	**5,0**
Howard	**3,3**	**5,0**	**3,9**	MTORASHANGA	**4,7**	**5,0**	**5,0**
N.E.M.C	**2,3**	**5,0**	**2,2**	ARYSHIRE	**4,3**	**5,0**	**5,0**
Henderson	**3,0**	**5,0**	**2,8**	ADA SISI	**2,7**	**2,5**	**5,0**
HU average	**3,2**	**5,0**	**3,6**	**HU average**	**4,2**	**3,5**	**4,7**

	Harare				Insiza		
	Record.	Stor/Rep.	Mon/Eval		Recording	Stor/Repo	Mon/Eval
KUWADZANA	**4,3**	**3,8**	**5,0**	Gwatemba RHC	**3,0**	**5,0**	**4,4**
BUDIRIRO	**4,7**	**5,0**	**5,0**	Avoca Rural Hospital	**3,7**	**5,0**	**4,4**
RUTSANANA	**5,0**	**5,0**	**5,0**	Insiza (PBS) RHC	**4,7**	**5,0**	**5,0**
HIGHFIELD	**4,7**	**5,0**	**5,0**	Zhulube Clinic	**4,3**	**5,0**	**4,4**
MARLBOROUGH	**4,7**	**5,0**	**3,3**	Kombo Health Post	**3,3**	**5,0**	**3,3**
SOUTHERTON	**4,7**	**5,0**	**5,0**	Wanezi Mission Hospital	**4,3**	**5,0**	**5,0**
HU average	**4,7**	**4,8**	**4,7**	**HU average**	**3,8**	**5,0**	**4,4**