



Immunisation Data Quality Audit

Uganda

16th September – 1st October 2002

Prepared by: The LATH Consortium*
On behalf of: Global Alliance for Vaccines and Immunisation (GAVI)
1st October 2002

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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 to 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 DPT3 vaccinations given to children under one year of age (DPT3 <1). In 2002, the DQA is being performed in 16 countries. It is hoped that participation in the DQA will assist each country in understanding the extent and details of the audit 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.

The first (pilot) Data Quality Audit (DQA) was conducted in June 2001 in Kabale, Masindi, Mukono and Jinja districts.

This DQA, the second for Uganda, was undertaken from 16 September to 2 October 2002 by two external auditors, Maxwell Moyo and Valerie Remedios and two national auditors, Annet Kisakye (Disease Surveillance, UNEPI) and Amos Nzabanita (HMIS, MoH HQ). The team worked at the National level (UNEPI HQ), before dividing into two teams and going to the Districts and Health Units (HU).

Based on the Districts' reported DPT3<1 for the audit year at National level a random selection of four Districts was carried out in advance and the following were selected: Hoima, Rukungiri, Katakwi and Mbale. Six HUs plus one "reserve" HU were selected randomly based on reported DPT3<1 for the audit year at District level. The "reserve" HU was to be visited only in the event that one of the first six was unreachable due to impassable roads.

A summary analysis worksheet was created for each site visited (the National Office, 4 Districts, and 24 Health Units) and can be found in Annex 1.

The team were able to present their findings at a briefing meeting, held at the MoH on 1st October and chaired by the UNEPI Programme Manager. The participants appreciated the high level of analysis and information provided through the DQA exercise. Major points of discussion concerned the following: lack of information on completeness of reporting at national level even though the district reports contain this information (the DQA measures availability but not completeness at national level), different paces of development of UNEPI and HMIS where UNEPI is constrained by the slower rate of development within HMIS partly due to the limited funds and resources of HMIS, financial implications of the audit, long term plans for the costs of stationary and allocation of a budget for these costs to the districts. The meeting was informed that some developments had already taken place regarding the harmonisation of software for the districts.

A list of the persons met during the DQA including the briefing meeting can be found in Annex 2.

2. Background

The Uganda Expanded Programme on Immunisation (UNEPI) was established as a unit within the Ministry of Health (MoH), with the goal of providing immunisations against six vaccine preventable diseases (diphtheria, whooping cough (pertussis), tetanus, poliomyelitis, tuberculosis and measles) to all children in Uganda. The UNEPI immunisation schedule also includes the provision of tetanus vaccinations for women. In June 2002 UNEPI introduced the combined "Diphtheria-Pertussis-Tetanus (DPT), Hepatitis B (HepB) and Haemophilus Influenzae B (Hib)" vaccine.

The UNEPI Manager reports to the Director of Health Services (Clinical and Community Health) in the MoH. UNEPI operates in all 56 districts of Uganda.

An integrated Health Management Information System (HMIS) was introduced in 1996 as the official MoH reporting system with the aim of replacing all pre-existing routine reporting systems for a number of vertical programmes including UNEPI. The HMIS system is a comprehensive system comprising a database to be maintained at HU and district levels and includes a number of tools for collecting, reporting and monitoring activities at the various levels. The monthly reporting format from HU to districts and upwards includes information on all health services including outpatients, MCH /family planning, essential drugs/vaccines and contraceptives, outreach activities and finances. Each district and HU is required to maintain a database of information which includes a summary of information reported up through the system as well as monitoring and evaluation of key indicators. The HMIS system is directly under the Director General of Health Services.

During an ongoing process of decentralisation, supervision and monitoring of health facilities' immunisation activities falls under the responsibility of the District Health Team (DHT) managed by the District Director of Health Services (DDHS). The District Health Visitor (DHV) is the key person at district level regarding supervision of immunisation activities although all members of the DHT are involved in supervision. A records officer is the HMIS focal person responsible for reporting HMIS information (including EPI). Vaccines are delivered from the UNEPI HQ to the districts who supply the health sub-districts (HSD) and or the HU depending on the capacity of the HSD.

Decentralisation is extending further from the district to the HSD, which is managed by the Assistant District Director of Health Services (ADDHS). The ADDHS is responsible for managing and supervising the HU within the HSD. The extent to which the HSDs are functioning varies from district to district and even within a district.

UNEPI HQ staff monitor and supervise the districts, and continue to be responsible for development of policies and standards, donor coordination, vaccines and other supplies procurement, technical assistance to lower levels, operational research and monitoring and evaluation.

The operational level is the health facility, which includes government, mission, NGO and private facilities registered to provide immunisations with vaccine supplied by MoH free of charge. Immunisations are provided to children and women from the health facility's static clinic, normally for smaller units once a week and for larger units on a daily basis, and for most health facilities also from scheduled monthly or weekly outreach clinics.

Information flow

A "Child Register" is used to register the child's first and follow-up visits to the facility including immunisations given to the child. However, the register is not a standard pre-printed format. HU are instructed on the format and expected to reproduce it themselves. At first registration a "Child Health Card" is issued by the facility, which identifies the child by a unique "child number". Immunisation and other key information are recorded on this card. Tetanus vaccinations given to pregnant women are normally recorded on an "antenatal card" which remains with the woman and in an improvised register reproduced in a similar way to the child register.

HMIS immunisation tally sheets (076 and 075) are used at the health facility on a daily basis to record individual immunisations given to children and women (tetanus). In some HUs the tally sheets are summarised on a monthly basis onto a UNEPI immunisation summary sheet, which forms the basis of completing the EPI section of the monthly reporting form (HMIS 105) submitted to the health sub-district/district. Daily tally sheets are used both for static and

outreach clinics. Outreach tally sheet figures are either transferred to the static tally sheet or reported separately, but in general they are not captured child register. The HMIS 105 also contains information about disease surveillance for the vaccine preventable diseases. The monthly reports are either delivered by health facility personnel when they collect supplies or collected by staff from the district/sub-district.

The HU is not required to retain a copy of the report if a database is routinely maintained.

The sub-district/district aggregates all health facilities data into a monthly district report (using form HMIS 123a from the health sub-district to the district and HMIS form 123 from the district to the national level). This report is sent directly to the HMIS Resource Centre at the MoH HQ. A copy of the HMIS 123a/HMIS 123 is retained at the health sub-district / district level respectively.

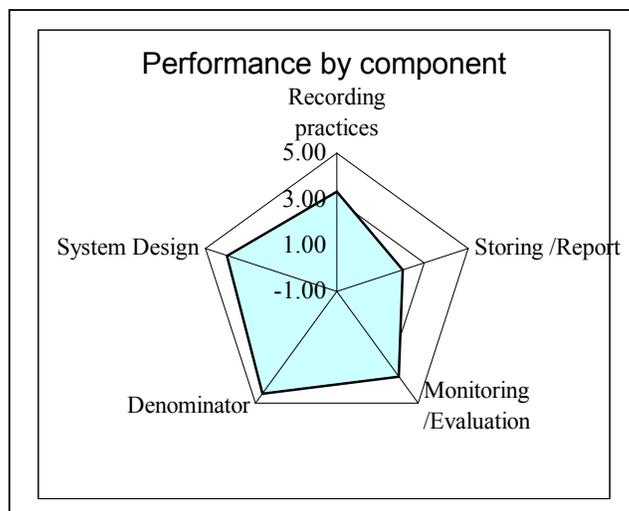
The Resource Centre (HMIS) in the MoH receives the district reports and as the MoH's official database should provide managers of the various programmes (UNEPI with national data for planning, monitoring, supervision and other purposes. Due to a problem with the national HMIS system, UNEPI have developed a duplicate system of data collection (using the national data), storage and analysis and maintain a separate database on EPI information. The annual WHO/UNICEF Joint Reporting Form on Vaccine Preventable Diseases (JRF) is prepared from this database.

3. KEY FINDINGS

3.1 NATIONAL LEVEL

Part of the DQA is a Quality Index based on, for national level, five components with a number of observations/issues per component. The DQA Quality Index for National level is **73.3%** (see Annex 1 for the analysis worksheet).

The individual components are shown in the following radar-graph:



Recording Practices:

The HMIS system is generally well followed, however it is very much dependent on the availability of forms (for collection of primary data and reporting to the higher levels) and the 'databases' for recording information at the HU and district levels. When these forms are not available HU revert to previous reporting formats (UNEPI tally sheet) or no recording at all.

Processing of data on time at the National level requires some attention. District reports are often faxed to the national level but as the faxes are

received in a different office to the Resource Centre, delays exist between the faxes being received in the MoH and reaching the Resource Centre. Districts are frequently contacted by the national level requesting their reports which they have already faxed.

In 2001, on average over half of the reports from each district were received late at national level. UNEPI collect the reports from HMIS on a monthly basis but does not update its

database with updated late reports received at the national level. Data inconsistencies arise if the database is not updated systematically with late and updated reports. The national vaccine ledger is well maintained and includes monitoring of batch number and expiry date. Immunisation commodities (AD syringes, BCG syringes, safety boxes, ice packs, etc) are also recorded well.

Storing/Reporting :

The management of computerized immunisation data is not optimal either at UNEPI or HMIS. In UNEPI two computers appear to be currently used to enter raw data but are not linked. There are no written procedures and guidelines for data handling between the computers including the identification of master files, consistent timing of different versions vis-à-vis generated reports and archived files as well as systematic back-up procedures. Some of the tabulations include the date of production (very useful in identifying the latest updated version) but this needs to be more consistently carried out.

Reports are filed well with each district having its own file but the reports are incomplete. For the four districts audited, one or two of the monthly reports (hard copies) were missing even though the UNEPI database has data on all 12 months.

Various electronic computerised systems are being used in the districts to capture HMIS data including EPI INFO 2000, SPSS, Access, Lotus 123, etc. Problems will arise if data need to be transferred electronically from the district level to the national level and neither have compatible software systems.

Monitoring/Evaluation:

Up to date charts on immunisation performance were not displayed in the UNEPI offices visited.

One of the GAVI indicators is the monitoring of TT2+ given to pregnant women. Although data are collected on TT2+ at all levels, no monitoring of TT takes place at any level. There is no specific TT template in either the district or HU database, however there are a number of blank templates that could be used to monitor TT.

Wastage is not reported in the JRF. Although there is a section in the HU and district databases to monitor wastage it does not seem to be followed and is not reported upwards through the HMIS monthly report.

Districts are still not receiving regular adequate feedback from the central level on their performance but are receiving on the timeliness and availability of reporting from HMIS. Although a routine feedback format was developed in 2001 in the form of a quarterly UNEPI bulletin (a colourful glossy 8 page), which included information on coverage rates of all districts, only one version has been produced to date and was issued in late 2001. The second edition was not produced and the third edition is currently being printed. The quarterly reporting format is now considered to be over ambitious and has been revised to a bi-annual.

Denominator:

Denominator issues are a problem. Although the UNEPI and HMIS definitions are both consistent with the WHO definition of children under one (estimated number of surviving infants), the figures used to calculate the denominator differs. UNEPI use 4.7% of the population and HMIS use 5%.

This problem is further exacerbated by the different population figures received by the districts and at the national level due to different growth rates applied by the districts compared to the national level. Denominators for the districts are calculated by UNEPI based on population data provided by the Ugandan Bureau of Statistics (central level). At the same

time the Districts calculate their own denominators based on information provided from the District Bureau of Statistics as they do not agree with the UNEPI figures. Six districts indicated coverage rates over 100% in the audit year including Katakwi (108%). In all four districts audited the UNEPI figures were lower than those calculated by the districts (see table 1). This exemplifies the problems in the calculation of the denominator.

Table 1: 2001 District denominators and National denominators allocated for the district

<i>District</i>	<i>District denominator</i>	<i>National denominator for District</i>
Hoima	16,163,	12,497
Katakwi	11,285	7,402
Mbale	31,634	29,136
Rukungiri	15,070	13,842

Again with estimating the number of pregnant women, UNEPI use 5.2% of the population whilst HMIS use 5%. The use of different percentages causing confusion at the lower levels.

System design:

An integrated reporting system (HMIS) exists for reporting immunisation data with other health data from the health unit up to national level. Guidelines¹ which are incorporated into the district and HU 'databases' have been disseminated widely, however some areas need to be strengthened e.g. recording and reporting from HSD, reporting of updates to the monthly report, reporting wastage, AEFI reporting, etc.

As reported in 2001, a major problem still exists with the duplication of effort at the national level by HMIS and UNEPI staff concerning data collection, storage and analysis.

Up until August 2002, the Resource Centre in the MoH were unable to capture the EPI information in electronic form. In order to address this issue, UNEPI developed a duplicate system where their staff collect original sections of the district HMIS 123 reports (Page 2 related to MCH/FP activities), enter the EPI information into their own database and return the originals to the Resource Centre. However during the DQA the team found a number of original reports in the UNEPI files for 2001. This results in an unnecessary duplication of effort by HMIS and UNEPI staff in the collection of data, its storage and analysis as well as incomplete records in the Resource Centre as some get lost in the process.

Since August 2002, the problem of data capture in the Resource Centre seems to have been rectified with the introduction of EPINFO 2000. Currently, all data reported (including EPI data) from January – June 2002 have been entered into the system.

Previously it was suggested that UNEPI resources, human and financial, should be used to strengthen HMIS regarding the immunisation reporting system. The current DQA team concurs with this view, however, as HMIS is an integrated system, all programmes who utilise the information from HMIS should agree on a process of strengthening the system such that the system delivers timely and accurate data to all the programmes.

The national monitoring system for monitoring injection supplies that will include AD syringes and safety boxes is not yet operational in Uganda. According to UNEPI Officials, the ledgers that include these supplies have just been developed and are to be printed and distributed before the end of the year.

Availability of forms and databases are a recurring problem. As the health units and districts have become used to capturing the information using the various recording tools (tally sheets

¹ Latest versions December 1996

and databases) their absence in some districts has meant that many of the recording and monitoring practices are not being undertaken in 2002.

The HMIS system does not currently take into account the HSD level sufficiently. This is causing confusion regarding reporting, formats for reporting, storage of data and recording (ledgers).

Performance Indicators:

Seven Performance Indicators are included in the DQA. The final table is shown below followed by specific comments to selected indicators:

Calendar year	Reported DTP3 <1	Change in reported DTP3 <1	DTP3 <1 coverage rate	%Districts DTP3 <1 coverage >= 80%	%dropout DTP1 <1 to DTP3 <1	%Districts dropout < 10%	%DTP vaccine system wastage	Quality of the System Index Score
2000	572,221		57.5%	31.6%	26.1%	11.1%		
2001	626,268	54,047	61.3%	19.6%	27.1%	8.9%	0%	73.3%

Change in reported DTP3<1 (2000 to 2001):

The change in reported DTP3<1 from 2000 to 2001 is 54,047. This has resulted in a rise in the coverage rate of nearly 4% and nearly reaches the same level as recorded in 1999 (61.4%).

Drop-out DTP1<1 to DTP3<1 (2000 and 2001):

Drop-out rates have increased marginally from 26.1% in 2000 to 27.1% in 2001, i.e. the number of children 'dropping out' before receiving DTP3 has increased slightly.

DTP3<1 coverage rate (2000 and 2001):

The coverage rate has increased from 57.5% in 2000 to 61.3% in 2001. However, the number of districts achieving a coverage rate of more than 80% has decreased over the same period by nearly 12%. In the 2000 DQA, the coverage is reported as 56.2% differing slightly to that reported in 2001 (57.5%), and is due to an updating of the UNEPI database with late reports.

DTP vaccine system wastage (2001):

This indicator cannot be calculated as no System wastage has been reported in 2001. The current reporting system does not allow for System wastage to be recorded. Vaccine wastage has not been included in the JRF. It is important to measure this indicator taking into account damaged and expired stocks throughout the system.

The Pentavalent form of DTP/HibB/Hepatitis vaccine was introduced country-wide from June 2002 and at the same time some HU/districts returned stocks of DTP to the national level. Stocks returned from HU and districts will be separated, the HU stocks destroyed and the district stocks re-supplied to another country willing to accept these stocks and the transport costs involved. 1,953,220 doses of DTP have been returned, although the stocks for destruction and transfer to another country have not yet been separated in the UNEPI ledger; the System wastage for 2002 should take into account stocks that are destroyed.

Completeness and timeliness of reporting from Districts to the National level:

Table 2: Completeness and timeliness of reporting for 2000 and 2001:

Date on WHO /UNICEF report	Districts reporting rate to National Level	% Districts reports on time at National Level
16/04/01	75.10%	16.50%
15/04/02	94.50 %	53.30%

There is a definite improvement in the timeliness of reporting from 2000 to 2001 in that the number of Districts reporting on time to the National level has risen from 16.5% in 2000 to 53.3% in 2001.

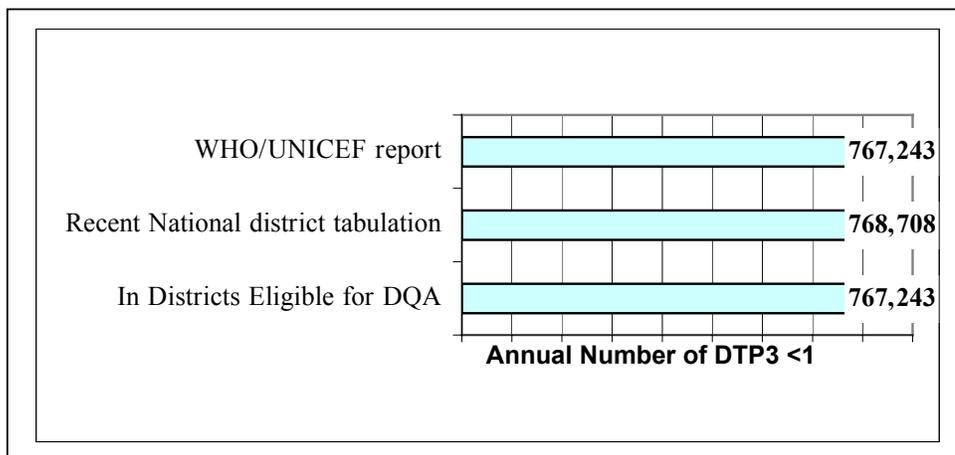
The level of reporting has also improved considerably. For 2001,

94.50% of all reports can be found at National level, compared with 75.10% in 2000. However the issue of completeness of data does not seem to be fully addressed by either UNEPI or HMIS even though the information is reported on the monthly reporting form.

The issue of late reporting is not clear, some districts update their monthly summaries and submit these reports to the national level whilst others update their own records but do not send any updated figures to the higher level immediately but may do this at the end of the year. This indicates a lack of completeness of data at the National level. This problem is exemplified by the different DTP3<1 figures reported for the same period (2000) during the DQA's in 2001 and 2002 as well as the lack of consistency in the reporting for the audit year (see below). Districts should be encouraged to submit **completed** reports **on time** to the National level. A policy on **late reporting** should be agreed and disseminated to all districts.

Ideally the national reporting completeness monitoring tool should reflect if a district has submitted first a preliminary report followed by a "late" (updated) report. In such cases, again ideally, the report is "complete" when the "late" report has been received.

Reporting consistency for Audit year (2001):



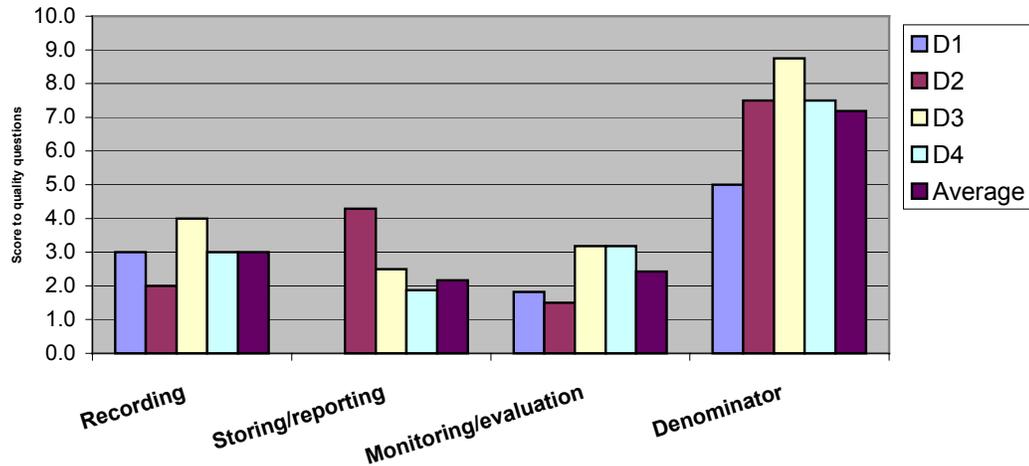
A difference of 14,285 cases of DTP3<1 is seen between the figures reported in the JRF report and the Districts eligible for the DQA versus the National district tabulation. This has been attributed to late reporting from five districts (see Data Accuracy).

3.2 DISTRICT LEVEL

The "Quality of the System Index" for the four districts is:

Katakwi: 29.7%; Mbale: 45.9%; Rukungiri: 64.7%; Hoima: 51.4% (See Annex 1 for the analysis worksheets).

The graphical presentations below show the four components of the quality of the system index of the four districts including the average values:



Recording:

Districts have a system for processing data as and when they arrive. However, none of the districts have a written procedure for dealing with late reports from the service delivery points (HUs).

Only two districts record the “date received” on the reports as they arrive at the district. However, this is done sporadically with some of the months missed. It should be noted that the dates written on the timeliness chart are not indicative of the exact day the report reached the district as some may have remained in the Director’s Office for sometime before being dispatched to the Records Office.

Ledger books were not up-to-date for TT vaccine in three districts and for DTP in one district. Only two districts had complete entries of receipts of DTP for the audit year. In addition, only receipts and issues for vaccines are recorded and on rare occasions are physical inventories checked and recorded in the ledger books.

The change in the reporting forms in July 2001 included the introduction of new tally sheets. The tally sheets for TT vaccinations are currently separate from those of children immunizations. At the time, only children immunization tally sheets were supplied to HUs. This has made some HU staff conclude that TT is no longer an important performance indicator and have thus been immunizing without tallying.

Storing/Reporting

Three districts routinely use computers for data management but none backup their files to diskettes or have a written backup procedure. Software in use is different in all the three districts, one using Lotus 1-2-3 and another using EPI2000 and SPSS (Software for Social Scientists). In the third district, the software crashed in December 2001. The district using Lotus 1-2-3 has to struggle every month recycling the template file, erasing monthly entries and only saving hard copies on file (thus no electronic copy of the previous months could be retrieved from the computer).

In only one district are the reports sent to the national level signed by the Medical Officer in-charge (ten out of twelve reports).

The electronic formatted monthly reports do not provide a space for signing and dating of reports at the district.

All four districts prefer to use the fax as the most reliable method of sending their reports to the national level. However, the districts complain that the national level frequently demand for re-submission of reports that have already been faxed claiming that they have not been received. In two districts, fax machines have broken. The postal service takes about four weeks, so Districts turned to hand deliver their reports when there is an activity to do at the national Office, which does not necessary coincide with reporting deadline. Reported timeliness for the four districts for the audit year at UNEPI ranges from 8.3% to 16.7% based on the date printed as “compiled” by district and date stamped/written as “received” at HMIS Office. If the compiled or received dates are missing, it is difficult to measure timeliness.

Data storage (particularly hard copies) is a problem in two districts which do not have files for each individual HU. It was difficult to retrieve data in these districts. In one district, reports were found in different places, some at the HSD, some borrowed by staff to use for their own research and yet the District Records Office did not keep a track of these important documents. Even for those reports available in these districts, the reports were not properly organized by date or were loosely filed. A replica of last years DQA finding.

Wastage is not reported anywhere at the district. The database provides room to calculate wastage but this is not done.

Monitoring/Evaluation

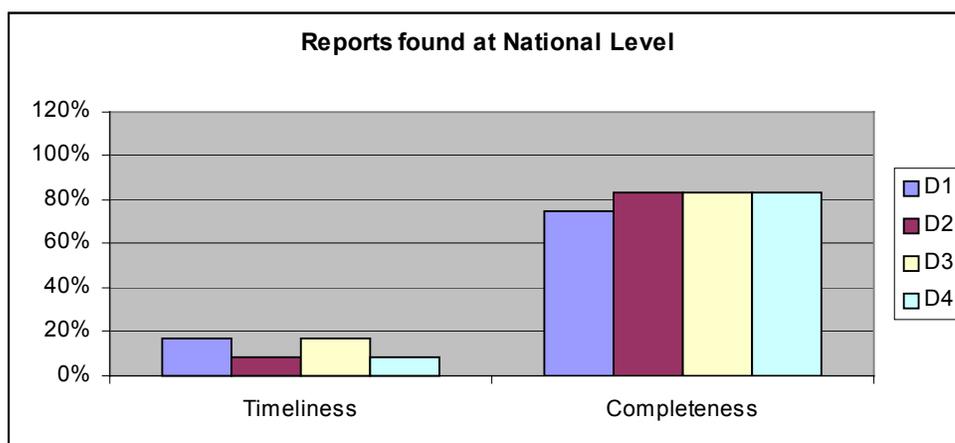
The major issues for the low score by the districts are due to the following:

- Evidence of supportive supervision was lacking at the district level. No district amongst the four had a realistic written schedule for supervision to the HUs. The “EPI MCH Supervisory Books” were available in very few HUs but were rarely used.
- No district provides any written feedback to the next lower level that includes some analysis or discussion of data. This could be a routine documentation of activities with some analysis of data or review meetings whereby minutes are distributed to all HUs and filed properly. Even for verbal feedback, a culture of sharing information is lacking amongst staff in the HU.
- Only two districts had targets for DTP3<1 and targets for pregnant mothers striving to vaccinate in 2002 but none of the districts displayed charts of immunization performance for the current year. However, all the four districts had a publication of tables showing their performance for the audit year.
- Three districts had up-to-date chart/table of the completeness of the current year’s immunization data.
- All the HUs visited in the four districts used same format of monthly reports.
- Only three of the four districts had a system for submitting aggregated reports of adverse events following immunizations (AEFI). However, some members of staff claimed not to be aware of the forms and the information does not appear to have been disseminated sufficiently to the HU staff.

Denominators

Denominators were available in all the four districts. However, denominators set at the national level are different from those set at the district level which impacts on a number of issues including the amount of vaccines/vaccine commodities supplied to the district. The district’s concern is that the denominators set at the national level are lower than those set by the districts themselves. (See National Level).

Reporting completeness and timeliness



The reporting of completeness and timeliness is based on the district reports found during this DQA at national level. Timeliness is based on the “date received” as stamped or recorded at UNEPI vis-à-vis the reporting deadline.

From the picture above, timeliness is a major problem for all the districts ranging from 8% to 17%. This implies that almost all reports from the four districts arrived late at the national Office.

All the four districts had some reports missing at the national level and thus the range of completeness is between 75 % and 83%. See Storing and reporting at National Level.

DTP3<1 coverage, drop-out and change:

The table below gives the DTP3<1 coverage rates for the audit year (2001) and year before (2000), the drop-out rate from reported DTP1<1 to reported DTP3<1 for the two years, and the change in reported DTP3<1 from 2000 to 2001 for the four districts in the DQA:

	DTP3<1 coverage 2000	DTP3<1 coverage 2001	Change in reported DTP3<1	Drop-out rate 2000	Drop-out 2001	District denom. 2000	District denom. 2001	Nat. denom. 2000	Nat. denom. 2001
D.1	67.70%	73.60%	977	31.60%	26.00%	10830	11285	7336	7402
D.2	81.90%	91.20%	-7841	20.20%	20.80%	44780	31634	40646 ¹	29136
D.3	62.30%	57.60%	-425	15.50%	19.20%	15625	16163	22937 ¹	13842
D.4	54.90%	66.70%	1984	16.80%	16.50%	14703	15070	12133	12497

The DTP3<1 coverage rates are based on the reported DTP3<1 reported figures and district denominators found at the district. From the table above, it can be seen that denominators set by the districts are different from those set at the National level. In the year 2000, one district (D3) had a higher denominator at the National level before it was split whereas. In

¹ Population figure of two districts before its was split

2001, all denominators at National level are less than those found at the district. The district denominators at the national level are yearly adjusted upwards by the average population growth rate of Uganda (2.5%) projected from the 1991 census figures whereas those calculated at the district use specific population growth rates of the individual districts. This means that when the national denominators are used, coverage rates are higher than the picture portrayed above.

Two districts managed to reduce drop-out rates. The first district had a marked improvement in reducing the dropout rate by 5.6% and the fourth a slight improvement by 0.3%. Dropout rates increased by 0.6% and 3.7% for the second and third district respectively.

Reported figures of change in DTP3<1 from 2000 to 2001 indicate a tremendous improvement in the performance of two districts where the number of children immunized increased by 977 and 1984 respectively.

3.3 HEALTH UNIT LEVEL

Twenty-four HUs were visited and included Level II, III and IV health centres and hospitals managed by Government, mission and NGO sectors, (see Annex 1 for the individual analysis worksheets).

Quality of system

Each HU was evaluated according to the criteria set below for recording, storing and reporting and monitoring and evaluation and a score was derived. For the twenty-four HUs a wide variation in performance was observed ranging from 28.6% to 82.1%, with an average score of 58%. Although the average performance is acceptable, there is clearly a need to address the following issues in those health units not performing so well.

Recording:

- The UNEPI vaccine control ledgers were found at all HUs visited and although nearly all units monitor batch numbers and expiry dates, less than half of the units were up-to-date in their inventories. For the audit year, 2001, the ledgers were complete in only 13 of the 24 health units visited so that administrative wastage could be calculated (see section 3.5 on Wastage). Without up-to-date and complete ledgers it is not possible to calculate wastage.
- The majority of the health units do not monitor vaccine commodities (AD syringes, safety boxes, etc).
- Child Registers and Antenatal Registers, for child immunisations and tetanus vaccinations for women, were found in most HU but were not always filled in properly, i.e. entering follow-up visits for infants, recording all TT vaccinations. There is no standard pre-printed format for either register, health staff have been given the format and are required to re-produce this format in their own ledgers. However, the format was not always reproduced consistently, which leads to problems in recording of child immunisations and TT.
- The availability and use of tally sheets is a problem. Tally sheets for tetanus (075) were missing in many of the HU visited, some of the staff had resorted to other means of recording the information, i.e. on the reverse of the child immunisation tally sheet, directly into the Antenatal register. In some cases this information was not captured at all. Health units are instructed to use one tally sheet per immunisation session, however for smaller units and outreach this results in a high wastage.

- Tally sheet wastage is very high. They are filled in on a daily basis with separate tally sheets for outreach and static activities. Even when a HU just immunize one child, the tally sheet is taken for filing and a new one is introduced at the next session.
- Some HUs (new ones and NGOs) get vaccines and supplies from nearest HUs which have refrigerators. Many outreach points have been established in an effort to reach as many children as possible. Reporting procedures of these service delivery points are not consistent, some reporting to the HU where they are getting supplies and some reporting straight to the district.
- Health units continue to use the UNEPI monthly summary immunisation reports and submit these to the district on a monthly basis in order to claim allowances for outreach activities. Others also use the information to compile the HMIS monthly report (105).
- Although databases for 2001 were available in the majority of health units visited, this is not the case for 2002. Their availability varied considerably in the four districts audited. In one district they were available, in another they could not be found at any HU visited, in another they had only recently arrived, and in the last they were available in some HUs but not in others. Health staff have grown accustomed to using the databases to routinely capture and record information when these tools are not available many do not capture the information.
- Many of the 2001 databases were incomplete or not maintained properly, i.e. missing annual reports, incomplete graphs. In three of the HUs visited it was not possible to find all the monthly reported figures for the various antigens for the audit year. To maintain data integrity, it is important to ensure that the database is complete.
- The records staff are required to maintain graphs on performance in the database but these should be shared with the relevant staff of the HU during the HU meetings. Graphs should be displayed and maintained by the staff responsible for the different areas, i.e. DTP3<1 charts maintained by the EPI staff. The individual staff responsible for service provision can thereby monitor their own performance.
- Where observations of immunisations were not possible an assessment of the vaccination schedule was conducted using an exercise based on 20 surrogate children (pre-filled Child Health Cards). Thirty-two vaccinators were interviewed and scored an average of 17.1 for correctly responding to the questions (ranging from 11 – 20). Knowledge of the immunisation schedule by the majority of staff is good. In several units immunisations were taking place during the actual audits, but it was not always possible to observe the immunisations as well as undertake the DQA without disrupting services. In one case where an observation was possible, inaccuracies were seen in 3 of 5 vaccinations observed, e.g. DTP1 and OPV1 given at 5 weeks (instead of 6 weeks), and return dates noted as '1½ months time' (the actual dates should have been recorded).
- In one district, no BCG immunisations had taken place in several HU for over a month due to the absence of BCG syringes in the HU and District, whilst the syringes were found in stock in other districts. This is a serious problem as there are clearly many missed opportunities which could have serious implications.
- Although a reporting form is available on AEFI reporting, it does not appear to be consistently disseminated to all staff carrying out immunisation services in the HU.

Storing/reporting:

- Storage and filing of tally sheets continues to be a major problem in spite of a circular from UNEPI on the subject (as reported in the last DQA). Complete individual records of immunisations in the audit year (tally sheets) could only be found in 11 of the HU's visited, and in five of these the recounted figures from the tally sheets exceeded what was reported. Without all the tally sheets it is impossible to verify reported figures. HU

and DHT staff are still unclear how long documents should be kept (again, this was highlighted in the previous DQA).

- All records from the end of the calendar /financial year should be stored in one place, i.e. all tally sheets from the audit year 2001 should be kept together with the other records from that year. This was not the case in many of the HU visited.
- The reports found at the Districts were not always consistently signed and dated which posed difficulties in assessing the timeliness of reporting.
- Five HU's under-reported their DTP3<1 immunisations in 2001 and for three of the HU's the same pattern was seen for DTP1<1. There was only one case observed where the district annual total (849) was exceptionally high compared to the health units' total (559), but this was explained as a transcription error.
- A programme of using Parish mobilisers to systematically collect information on new births in the community and bring the children to outreach facilities has been operating since June 2002. Whilst this is commendable it is also necessary to consider the long-term sustainability of such activities. TBA's in some health units are trained and are linked to the health units but do not receive any financial remuneration from the HU unlike the Parish mobilisers.

Monitoring & Evaluation:

- In general the issue of denominators and targets is not well understood by the HU staff. As with the districts, the HUs are not aware of their annual performance as they do not complete their annual reports. Where databases are maintained well, health units are aware of their catchment population and are able to calculate their denominators but are not always able to calculate realistic targets using their previous performance. In the audit year only 54% of the health units had a target for DTP3<1.
- Only a few of the health units (29%) displayed charts on any antigen to monitor their progress, and in many of these cases the charts were maintained in the records room and not used by the staff carrying out the services. This is important to build a culture of performance monitoring into the health staff's activities.
- No monitoring takes place of TT+ given to pregnant women.
- Although the district staff are actively involved in carrying out supervisory visits, supervision related to immunisation activities continues to be weak. Less than half of the HUs had received a supervisory visit within the last four months where written comments were made. Although visits may have been made to other HUs, written records of the visit (other than a mere signature in the visitor's book) could not be found. An 'MCH/UNEPI Supervisory Book' was found in a number of HUs, but does not appear to be routinely used, perhaps as it is only considered when related to EPI supervision. If completed, it can provide a useful record, of a supervisory visit that remains in the HU
- Feedback is extremely weak, only one HU had received any written feedback from the HSD level on their performance in the last four months.

Completeness/timeliness of reporting:

- Completeness of data reporting is on average very good. For the HUs audited, on average 89% of the reports could be found at District level (range between 25 -100%). However, on average, only 44% of these reports arrived on time at the district (range between 0 – 83.3%). The zero figures are where it was not possible to assess timeliness due to missing dates on the reports. It is clear that some units have problems in getting their reports to the District on time and some districts have resorted to collecting the reports.

- There is high level of completeness of data at the health unit level, all 12 months reported figures on DTP3<1 for 2001 could be found in 21 of the HUs visited.

Change in reported DTP3<1, coverage and drop-out rates:

- The change in reported DTP3 between 2000 and 2001 is only of relevance if complete data are available for both years. This was possible in the majority of the health units audited (21). Of these units 8 reported a negative figure, implying a higher level of immunisation activity in 2000 than 2001.
- Drop-out percentages in 2001 for DTP3 ranged from minus 10% to 39.9% with an average of 15%. The negative dropout cannot be fully explained but could be due to a lack of data at the HU and reporting errors. HU with high figures (10% and more) should be encouraged to consider further social mobilisation activities as well as increasing their outreach activities.

3.4 VACCINE AND INJECTION SAFETY

Vaccination safety

The EPI programme in Uganda has just introduced a new form for the recording, reporting and monitoring of Adverse Events following Immunisation (AEFI) in the year 2002. The AEFI form has three parts:

- Form A – Notification Form. Filled in triplicate by HU staff, one copy sent to the District, one to UNEPI and one kept at the HU.
- Form B – Summary Form. Filled by the District Medical Officer, filled in duplicate. One copy sent to UNEPI and one kept at the District.
- Form C – Laboratory Investigation Form. Filled by the District Medical Officer and his team after investigation and sent to the Laboratory.

Copies of AEFI were found in some of the HU visited and some staff trained on how to fill the form. However, in some HU, this information does not appear to be shared with all the staff involved in immunization services.

Injection safety

Safety boxes for discarding used syringes were available in all the HU visited and were being used. However, at one HU, four safety boxes were filled with empty vials as the staff claimed that they did not have an adequate method of disposing the vials.

The disposal of safety boxes varies from place to place. Some districts have a policy for the static and outreach clinics. At the static clinic, the box is used until full and then burnt for disposal. For the outreach clinic, any box used is burnt immediately² after the immunization to avoid infections (many outreach clinics are carried out using bicycles). The majority of HU use the pit latrine to discard remains of the burnt safety box and the three hospitals use incinerators.

One major problem is that the current monitoring system does not take into account AD syringes and safety boxes which makes it difficult to quantify whether the available quantities are enough for the country. In addition, the disposal policy should be reviewed to ensure that

² The UNEPI Policy is to burn when a box has a maximum of 100 used syringes for both outreach and static

the safety boxes are safely destroyed. The places where outreach sessions are conducted close to schools or churches could become health hazards to the residents if the process is not properly followed.

3.5 VACCINE WASTAGE

In the calculation of vaccine wastage a distinction is made between **System wastage** and **Administrative wastage** where:

- System wastage is doses of vaccine damaged by breakdown in the cold chain, poor management (expired vaccine) or accidents (breakage, etc). DTP system wastage calculation is applicable for National and District levels.
- Administrative vaccine Wastage is the unavoidable waste due to the administration of multi-dose vaccine vials where “left overs” will have to be discarded.
- Global wastage is the combined system and administrative wastage.

Vaccine wastage is calculated as a percentage wastage: (No of doses issued) minus (No of doses used for vaccination) times 100, divided by (No of doses issued).

The HMIS databases for district and health units include a section on wastage. However, there is no system in place to measure the losses due to System Wastage at the district level or national level. Neither System nor Administrative wastage is routinely reported through the EPI system and therefore cannot be calculated at National or District levels. In the Districts visited, the auditors were informed that no System wastage had been encountered in the audit year and the national level reported the same.

A condition for calculating administrative wastage is 1) a proper vaccine stock registration, with registration of stock balance for DTP vaccine at the beginning and the end of the year and registration of incoming and delivered vaccine 2) reliable recording of all DTP vaccinations given within the health institutions covered.

The majority of HU keep stocks of vaccines and issue daily to a vaccine carrier for immunisation each day, returning unused stock to the refrigerator at the end of the day. At the HU level it is possible to measure Administrative wastage if the ledger is maintained and has complete entries for receipts and issues (opened vials) and the total number of reported DTP vaccinations.

Administrative wastage could be calculated for sixteen HUs, although three of these units reported negative wastage figures which could be a result of over-reporting and poor inventory control, or a combination of both. One of these units had a very high negative wastage (-84.4%) which is a serious problem. This unit acts as a HDS supplying vaccines to other HUs as well as itself³. At least two members of staff issue vaccines from the ledger. On the day of the audit, stocks of Pentavalent had been issued to another HU which were not accounted for in the ledger, confirming the poor record keeping.

For the remaining thirteen HUs, the wastage rates varied from 2.6 % to 57.4% with an average of 20%. The wastage for the remaining eight HU cannot be determined because of incomplete records for the audit year.

³ This calculation is made after the visit to the HU, which is unfortunate as it is not possible to discuss the results with the HU staff and obtain their views.

As a target for multi-dose vials, GAVI recommends countries to aim for a maximum wastage rate of 25% with a plan to gradually reduce it to 15% by the third year of support. Wastage rates need to be calculated in order to identify those units with high levels (5 units had wastage rates over 25%) and mechanisms to reduce wastage

Vaccines wastage is not routinely calculated at any level. The National vaccine wastage has not been calculated and has therefore not been reported in the JRF. None of the reporting forms include a separate section for recording Administrative or System Wastage which is required in the JRF.

3.6 DATA ACCURACY

The verification factor is the ratio between the DTP3<1 recounted from tally sheets during the DQA and the figures reported in the monthly summary reports: Recounts/ reported. The verification factor found for Uganda is 0.788. This is an improvement compared to the 2001 DQA (0.714).

The national reported (JRF 2001), the figure used for sampling and most recent national tabulation for DTP3<1 for 2001 are all different as follows:

JFR 2001: 611983;
 Sampling: 619315;
 Most recent tabulation: 626268

The JFR report is lower than the rest due to “late reporting” from five districts. The sampling total DTP3<1 was derived from coverage figures from UNEPI as they did not submit the crude figures for DTP3<1 as required by GAVI. UNEPI could only account for 13,600 out of the 14,285 DTP3<1 difference between the most recent tabulation at the national level and the JRF reported figure in 2001. The remaining 685 could not be explained.

The four sampled districts reported or recorded DTP3<1 for 2001 in the National tabulation is as follows

	National tabulation	District report at National	District tabulation	District report at District	Difference National tabulation- District tabulation	Difference National tabulation- District report at National	Missing district reports at National
Katakwi	7974	6030	8304	8317	-330	1944	3
Mbale	28871	23820	28851	28851	20	5051	2
Rukungiri	9812	8482	9312	9493	500	1330	2
Hoima	9383	7974	10055	10055	-672	1409	2

The largest reported figure of DTP3<1 found on the “National tabulation” or the “district reports at national level” is used in the formula for the verification factor. All four districts have different figures, with the differences ranging from 1330 to 5051. The values used in the verification factor for the four districts are: 7,974; 2,8871; 9,812 and 9,383. All the figures for the national tabulation are higher than those from the “district reports at national level”. This is explained as follows:

- The figure for Katakwi (7974) is lower than the “district tabulation” and “district reports at district”. This is explained by three missing reports at the national level.

- For Mbale district, (28871) is (20) more than both the district tabulation and district reports at district resulting most likely from a transcription error.
- The Rukungiri figure (9812) is (500) more than the district tabulation and district reports at district which are equal. This has probably arisen from a transcription error.
- Hoima (9383) is lower than both the district tabulations and district reports at district which are equal. This is explained by the missing three reports at the national level.

Another observation is that the “District report figures at District” are all higher than “district reports at National”. This is because most Districts do not send their updated reports to the National level and the lack of a policy in this area has further compounded the problem. In addition, the national level has no written procedure for dealing with late reports to maintain integrity of the data.

The large difference in the national tabulation and district tabulation found in Rukungiri (500) has had the greatest negative effect on the verification factor.

The verification factor confidence interval is very large, (0.488 to 1.088) which is partly due to the differences in the figures reported at the various levels.

Reported Vs Recounts

The following table highlights the picture of the reported against recounted figures in the four districts:

Table 3:Reported vs recounted DTP3<1 for 2001

District	Reported	Recounted
Katakwi	4678	3721
Mbale	5956	4404
Rukungiri	4922	4316
Hoima	2561	2645

Under-as well as over-reporting were observed in some HUs mainly due to transcription errors or calculation errors from tally sheets to monthly immunization reports. In some HU, tally sheets were missing particularly for outreach services, whilst in others tally sheets for outreach activities were not included in the monthly summary sheets.

The team did not observe any evidence of “inflated” figures or any sign of “creative accounting” with impact for the DQA.

3.7 CHANGES FROM DQA 2001

The Verification Factor has improved from 0.714 (for the audit year 2000) to 0.788 (for the audit year 2001). A positive development is that while it was observed during the DQA in 2001 that UNEPI and HMIS forms were being used concurrently, this has now been harmonized.

The major problem with regard to storage and filing of reports and tally sheets observed in the 2001 DQA still continues in 2002, health workers are still unclear how long to keep records. These issues were raised at the last DQA and districts have been instructed to ensure that their health staff retain all records and file and store these well but the message

does not seem to have been adequately disseminated to all staff. This may explain the limited progress in some of the areas related to this DQA.

Other points raised in the previous DQA are:

- Although regular supervision appears to be taking place from the district downwards, no records are made of each visit that is retained by the health unit or the supervisor and therefore it is difficult to assess how focused the supervision is, the same problem was seen in 2001.
- The inconsistencies found between the national tabulation totals and the reported totals from monthly reports for the districts audited in both years continues to be a problem.
- Availability of forms still continues to be a problem.
- Storage and organized filing of monthly reports from the HU still continues to be a problem in some districts.
- At the HU level, immunisation data are collected and some health units monitor their performance. But this information does not seem to be adequately shared or used by the other staff of the HU to measure their performance. The same problem was observed in 2001.
- The issue of the 'dual system' being maintained by HMIS and UNEPI continues, but the fact that HMIS are able to capture all information electronically is a vast improvement and should be further encouraged and supported.
- Analysis of data and feedback continues to be a problem. Feedback to districts started well with the first edition of the UNEPI quarterly bulletin in late 2001 (in 2000 this was reported as not being adequate), but UNEPI have not been able to sustain the timeliness of this feedback. Nearly a year will have passed before the next edition is disseminated. Ideally quarterly feedback is required.

4. RECOMMENDATIONS

UNEPI is well established and operates well with committed and hard working staff. The challenge for UNEPI is to maintain the momentum of programme activities and to collaborate closely with the HMIS staff on whom it relies on for timely and accurate information. As stated by a management expert in his publication 'The Goal', "if you can't measure it, you can't manage it" which is important in the management of any programme.

Recording practices:

- Ensure at that completeness of reporting (i.e. percentage of HUs reporting in a given period) and not just availability is captured at national level.
- Standard pre-printed ledgers, for child immunisations and antenatal tetanus would greatly assist the HU in monitoring all immunisations. In addition follow-up supervision is required to ensure that the ledgers are being maintained appropriately.
- Ensure that separate vaccine control ledgers/stock cards are used for recording and issuing of vaccines and vaccine commodities for the HSD.
- Ensure the availability of all forms and databases for recording and reporting; Government should budget for the forms at all levels.

- To avoid unnecessary wastage, encourage the optimal use of tally sheet by drawing lines between columns to differentiate between different immunisation periods.
- Provide electronic forms of the HMIS database (monthly report formats 123a and 105) to Districts, ensure that there is a space for signing and dating the reports.
- Use the supervisory visits to strengthen knowledge on the vaccination schedule, monitoring the correct completion of the vaccine ledger, calculation of wastage, proper maintenance of the Child and Antenatal registers, AEFI reporting.
- Provide computers to competent districts and train staff in electronic data management.
- Install a “fax without phone” in the Resource Centre (MOH) to receive incoming reports.
- Discuss with the districts the necessity of HUs still completing the UNEPI monthly summary form and if other HMIS information can be used for claiming of outreach expenses.

Storing /Reporting:

- Ensure that all EPI completed records (tally sheets, completed ledgers, etc) are routinely and regularly stored with other HU records. All records should be stored for the duration of time stipulated in the national policy.
- Strengthen the storage and filing of reports at District and HSD, ideally each reporting unit should have its own sub-file and be filed by month. Reports should be clearly marked especially when updated.
- All monthly reports should be signed and dated by the ‘In-Charge’ of the HU and District, and signed and dated on receipt at District and National levels.

Monitoring/Evaluation:

- Together with the Districts, UNEPI should agree on a mechanism for collecting information on wastage from HUs and Districts and reporting this information upwards.
- UNEPI should use the District population figures derived from the districts to calculate the denominators for the districts.
- UNEPI should liaise with HMIS to ensure that the same formula and base figures are used for the calculation of denominators for ‘children under 1’ and ‘pregnant women’ at District and National levels.
- Ensure that TT+ is monitored at all levels as well as other selected antigens.
- Strengthen the monitoring of completeness of reporting as well as timeliness and availability at district and national levels.
- Ensure that all key staff in the District and HU are trained on how to use the HMIS tools to monitor performance, i.e. charts, and encourage a process of analysis and interpretation of the information rather than the mere collection of data. Encourage the display of all monitoring charts for all antigens at HU and District levels.
- Encourage regular written feedback from all levels which should include some analysis of the data provided. UNEPI may need to assist the districts in developing different feedback formats. From the national level, consider a simple (compared to the glossy productions, which could continue as an annual publication but not for regular routine feedback), mechanism for reporting more regularly to the districts say on a quarterly basis.
- Ensure that realistic schedules of supervision are made with reports on the outcome of each supervisory visit, and that a record of the key issues is left with the HU and used for follow-up. The MCH/UNEPI Supervisory Book should be completed for all supervisory visits and not just for EPI related matter; further copies should be produced (renamed) for all HUs.

- Encourage the Districts to develop supervisory checklists that can be used for an integrated style of supervision and not only for EPI related activities. Focus on on-the-job training utilising the HU's own data.
- Ensure that 'databases' are completed, including the completion of 'annual reports' at both districts and HU's through integrated supervision.

System design:

- Agree on policies for late reporting and duration of storage of documents and disseminate this information widely with follow-up supervision to ensure that all staff in the District and HUs are aware of the policies.
- Maintaining a dual system for collection and storage of EPI information leads to problems in data integrity, to avoid these problems all reports should be stored in one location only (Resource Centre) and data transferred electronically. The HMIS database is the MoH's official database, which should provide managers of the various programmes (UNEPI, FP, etc) with national data for planning, monitoring, supervision and other purposes. The original reports should not leave the Resource Centre. UNEPI as well as other programmes can update their records electronically regularly as they are currently doing in terms of timeliness of reporting.
- Data are currently being entered in HMIS using EPI INFO 2000. UNEPI should be using the same system and identify which files can be electronically captured on a regular basis.
- HMIS to set a schedule of data entry support from other programmes and train staff on HMIS, all programmes benefit from the information so should support the data collection.
- HMIS should identify a suitable computerised software package for data collection in the districts and ensure that the same package is used in all districts. Training in computerised data entry is also required and if resources are scarce in the MoH, this could be supported through other programmes benefiting from the HMIS information.
- All data should be regularly 'backed-up' at all levels, UNEPI, HMIS and in the districts. 'Zip' programmes should be installed to assist in the back-up process. A copy of the back-up should be stored outside the district/national offices.
- UNEPI should review their policy on use and disposal of safety boxes in line with outreach activities.
- UNEPI should explore possibility of introducing incinerators (the technology of choice could be the low cost De Montfort University type incinerator).

ANNEXES

- 1. Key Informants (including those attending the debriefing)**
- 2. Summary Worksheets (national, 4 districts and 24 HU)**
- 3. PowerPoint presentation from debriefing**

GAVI DQA Uganda 2002 (Audit Year 2001) 16 September - 2 October 2002.**Auditors**

Mr Maxwell Moyo	GAVI External Auditor
Ms Valerie Remedios	GAVI External Auditor

National Level (16 September 2002):

Dr Annet Kisakye	Disease Surveillance, WHO, UNEPI / National Auditor
Mr Elly Tumwine	Cold Chain & Logistics
Ms Justine Waibi	Data Entry Clerk
Ms Betty Irwasi	Operations Officer
Mr Amos Nzabanita	MOH, HMIS, Biostatistician / National Auditor
Dr Eva Kabwongera	UNICEF
Dr Miriam Nanyunja	NPO/EPI Sureveillance, WHO
Dr Rosamund Lewis	EPI Advisor, WHO
Mr Peter Kintu	Data Manager WHO

Katakwi District (17-20 September, 2002)

Dr Thomas Onyige	DDHS
Mr Richard Emeru	Records Officer/HMIS FP
Mr Ben Owiror	DCCA
Mrs Grace Edyegu	DHV

Usuk HC, Level III (18 September, 2002)

Sister Margaret Ikiror	Deputy I/C R/N
Sister Immaculate Iyura	IC R/N
Mrs Grace Edyegu	DHV

Toroma HC, Level III (18 September, 2002)

Sister Proscovia Aguti	I/C
Ms Rose Apio	Comprehensive Nurse
Ms Juliet Amodui	Enrolled Midwife
Ms Joyce Amyodi	Laboratory Attendant
Ms Betty Ameede	Aid Nurse
Ms Christine Akol Acom	Aid Nurse
Ms Christine Akello	E/Nurse
Mrs Grace Edyegu	DHV

St Michaels HC, Level III (19 September, 2002)

Mr Ekkamu Deo	Registered Comprehensive Nurse/IC
Mrs Helen Agwang	EMW
Ms Harriet Acom	Nursing Assistant
Mr Ben Owiror	DCCA

Amuria HC, Level IV (19 September, 2002)

Sister Dina Apolot	IC of EPI
Ms Catherine Asiko	Nursing Assistant
Mr Joseph Ocular	Records Assistant
Mr Ben Owiror	DCCA

Magora, Level II (20 September, 2002)

Mrs Vicki	EMW
Mrs Kevin	Nursing Assistant
Mr Ben Owiror	DCCA

Katakwi HC, Level IV (20 September, 2002)

Dr Elijah Wakamuke	Medical Officer, IC of Sub-district
Mr Beda Oese	Records Assistant
Mrs Brenda Ilingat	Registered Midwife
Mr Ben Owiror	DCCA

Debriefing Katakwi District (20 September, 2002)

Dr Elijah Wakamuke	Medical Officer, IC of Sub-district
Mr Ben Owiror	DCCA
Mr Richard Emeru	Records Officer/HMIS FP
Mrs Grace Edyegu	DHV

Mbale District (23-26 September, 2002)

Mr William Mangali	Cold Chain Stores Officer
Mr Yusuf Namaicoola	Record Officer I/C
Mr Patrick Madaya	Records Assistant

Naiku HC, Level III (23 September, 2002)

Mr Moses Kuranga	Nursing Assistant
Mrs Howah Mazaki	Vaccinator
Mrs Irene Namasobo	Vaccinator
Mr Patrick Madaya	Records Assistant

Bugobero HC, Level IV (24 September, 2002)

Dr Godfrey Mulekwa	I/C of HSD (Bubulo West)& I/C of HU
Mrs Lucy Kugonza	Midwife
Mr Michael Emron	UNEPI County Supervisor
Mr Patrick Madaya	Records Assistant

Bunambale HC, Level III (24 September, 2002)

Mr Joshua Wetende	Nursing Assistant
Mr Patrick Madaya	Records Assistant

Nyondo HC, Level III (24, 25 September, 2002)

Mr Johnson Wesonga	Clinical Officer
Ms Lofina Mutonyi	I/C, Midwife
Mr Paulo Mulati	Vaccinator
Mr Patrick Madaya	Records Assistant

Bukalsi HC, Level III (25 September, 2002)

Mrs Ekizabath Khainza	Nursing Assistant
Mrs Joyce Mainya	TBA, Masakhanu Village
Mrs Phoebe Namwano	Nursing Assistant
Mr Patrick Madaya	Records Assistant

Bududa Hospital, Level IV (25 September, 2002)

Dr Gideon Wamasebu	ADDHS & Med Superintendent
Mrs Emily Omoding	Senior Nursing Officer/UNEPI Coordinator
Mrs Specioza Nabwire	Enrolled Midwife
Mr Alfred Tsililya	Vaccinator
Mrs Afua Kituyi	Support Staff
Mr Patrick Madaya	Records Assistant
Mrs Kisembo Jane	Nursing Assistant
Mr Yusuf Tibulihija	Administrator

Debriefing Mbale District (26 September, 2002)

Dr Francis Abwaimo	DDHS
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Rukungiri District 3 (17, September, 2002)

Mwesigwa Collins	DCCA/SFP
Juliet Olema	PHN
Mugwanya Edward	Medical Officer
Ruyooka Topher	DADI/HMIS
Katsimbazi C	DTLS
Ndazaamwe Francis	DHE

Kisiizi Hospital HU 1 (19, September 2002):

Byandisya K Mathias	CBHC trainer
Aharimpisya Stanely	AID nurse
Owobusingye Richard	Records In charge
Muwanguzi Emmanuel	I/C immunisation
Margret Makobole	AID nurse
Kasana Nelson Matovu	Records assistant

Nyakibaale Hospital HU 2 (19, September 2002):

Bamanyire Scholar	E/Nurse
Dr Baguma	PHC coordinator

Buhunga HC III HU 3 (20, September 2002):

Nabaasa Salaphine	E/Nurse
Musumi Charles	Nursing Assistant

Bungangari HC III HU 4 (20, September 2002):

Tumuhairwe David	Clinical Officer
Muherwe Hildah	E/Midwife

Karuhembe HC II HU 5 (19, September 2002):

Kokunda Joy	Nursing Assistant
Tumwesigye John	E/Nurse

Rukungiri HC III HU 6 (18, September 2002):

Akankwasa Alex	Records assistant
Mbabazi Christine	Nursing Assistant
Mutabanura Agnes	E/Nurse
Atukunda Medad	Medical Ophthalmic Clinical officer
Katushabe Jane	E/Midwife

Hoima District 4 (23, September 2002):

Christopher Asiimwe	DHI
Tibaijuka Hannington	Health Assistant/EPI Focal person Buhaya HSD
Gawerra Fred	DCCA
Albert M Balijura	HE/CBHC coordinator HMIS FP
Dr Ruyonga Joseph	ADDHS Buhaguzi HSD

Kigorobya HC III HU 1 (26, September 2002):

Kahaibale Robert	Clinical Officer
Biribonwa Grace	Nursing Officer
Ahabyoona Grace	Health Assistant
Kasana Patrick	Records Assistant
Kyanda Alfred	Health centre LC III chairperson
Betty Isingoma Asili	Parish Mobiliser

Kikuube HC IV HU 2 (24 September 2002):

Byenya Philemon	Records Assistant
Katusabe Mary Grace	E/Nurse
Ochen Akodia Philbert	Health Assistant
Kamuhanda Fred	Clinical officer
Byenkya Margret	Nursing Assistant

Mparangasi HC III HU 3 (25 September 2002):

Mbabazi Sarah	E/Nurse
Asiimwe Patrick	Records Assistant
Katusiime Elizabeth	Public Health Assistant

Kasonga Refugee HC HU 4 (24 September 2002):

Amandu Gift A	Clinical officer
Mbonabulya Pomptean	Nursing Assistant

Kitoole HC II HU 5 (25 September 2002):

Kemigisa Julian	E/Nurse
Nabukalu Jane	E/Midwife

Hoima Islamic HC III HU 6 (25 September 2002):

Kisembo Jane	Nursing Assistant
Yusuf Tibulihija	Administrator

Debriefing - Hoima (27 September, 2002):

Dr. Ruyonga Joseph	ADDHS
Bakarunga Richard	EPI Focal Person - Buhahuzi Sub District
Hannington Tibaijuka	EPI Focal Person - Buhahya Sub District
Garwerra Fred	DCCA
Asmwe Edward	Records Officer
Albert Barijura	CBHC Coordinator
Byenume Fredrick	Health Inspector
Bonny Tinka	Dist. FP Coordinator
Dr. Emer Mathew	DDHS

Debriefing MoH, Kampala (1 October, 2002)

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