GAVI
DATA QUALITY AUDIT

COUNTRY: LIBERIA

From 18th July to 4th August 2005

LIVERPOOL ASSOCIATES IN TROPICAL HEALTH, UK

in association with

EURO HEALTH GROUP,

DENMARK

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Executive Summary

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 senior external auditors and two national counterparts, who worked at national level of HMIS and EPI before visiting four districts and six health facilities in each district. All 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:

	2003	*2004*	***2005***	***change since 2003***
Verification Factor (>0.8) *(Compares recounted to reported DPT3)*		*0.78*		
Core Indicators:				
DTP3 Coverage	47,40%	*30.70%*		***-16.70%***
Drop Out Rates	20.60%	*36.30%*		***15.70%***
Safety of Injections and Vaccine Safety	NA	*NA*		
Wastage Rate	NA	*NA*		
Completeness of Reporting	41.70%	*65.00%*		***23.30%***
Vaccine Stock-Outs	NA	*NA*		
Action Plans for Districts	NA	*NA*		
QSI at National Level	NA	*58.50%*		
Average QSI for Districts	NA	*59.08%*		
Average QSI for Health Units	NA	*60.71%*		

Summary of the principal findings and recommendations.

Category	Positive	Key Issues
National Level	✓ The standard operational procedures (SOPs) for EPI activities have been worked out, ✓ National standardized formats for registration and reporting ✓ Integrated reporting ✓ Storing and backups well done ✓ Completeness and timeliness of reports monitored ✓ Charts and tabulation on core EPI indicator displayed (excepted drop-out rate) ✓ Written monthly feedback	✓ The denominator definition not consistent with WHO definition ✓ Data inconsistency to the next lower level ✓ No national SOPs or formats for reporting AEFI; ✓ Monthly monitoring of stock outs of vaccines in districts; ✓ Drop-out not monitored ✓ No vaccine ledger for the audit year ✓ Annual report not produced
District Level	✓ All districts used the same denominator as the National Level ✓ Health structures reporting to Districts consistently defined, ✓ Report formats from HU level consistent ✓ Immunization chart/table displayed, ✓ Monitoring of the vaccine batch numbers and expiry dates, ✓ Same reporting forms used in all Districts for 2005, ✓ All available HU reports processed	✓ 3/4 Districts have a micro plan ✓ 2/4 districts with feedback format from district to HUs (oral feedbacks) in some districts, ✓ Data inconsistency to the next lower and higher level ✓ Inconsistent monitoring of completeness/timeliness of incoming reports (in 3/4 districts), ✓ Supervision activities not monitored in all districts ✓ No annual report/publication established, ✓ No coordination unit for social mobilization at district level, ✓ Ledger book for vaccine used in 2/4 districts in the audit year ✓ Current ledger book for vaccine not up-to-date for DTP and TT in 2/4 districts ✓ Vaccine stock out not recorded in all districts, ✓ Irregular coordination meetings for HU staff (3/4 have monthly meetings).
HU Level	✓ The SOPs and standard formats for vaccination are being used, ✓ All reports for audit year available (excepted war period with no activities), ✓ Tally sheets are being used and filed according to SOPs, ✓ Reports and tallies also filled in when no vaccination activity, ✓ Vaccination registers complete and well kept, ✓ Vaccine ledger books being introduced in 2005 ✓ The vaccination monitoring charts displayed.	✓ Few vaccine ledger books updated, ✓ No or incomplete Vaccine ledgers for audit year, ✓ Generally, no record keeping of syringes and safety boxes, ✓ No annual tabulation of vaccination activity, ✓ Stock outs noticed for EPI forms. ✓ No monitoring of vaccine wastage, drop out ✓ Few catchments area map

Main Recommendations:

- ✓ Redefinition of health structures for districts levels,
- ✓ Avoid data inconsistency at all level
- ✓ Improvement of monitoring and evaluation activities
- ✓ Introduction of vaccine ledger book at all levels according to the international guidelines
- ✓ All fixed vaccinating HUs shall keep vaccine ledger books
- ✓ Introduction of out reach activities and data should be reported by tallies to, and filed at, fixed HUs
- ✓ Capacity building at levels below national level
- ✓ Computerization of the districts

1. Introduction

The Data Quality Verification (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). In 2004, the DQA is being performed in up to 14 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 Liberia, from 18th July to 4th August 2005.

2. Background

Liberia is a West African country which is just coming out of multiple civil crises which have resulted all the time in armed conflict. The consequences of all this has worn heavily on the general health delivery system. Essential health sectors such as immunisation were almost completely grounded otherwise offered at minimal level, the whole country over. The general state of insecurity forced the personnel to flee from the health facilities; the health records and property were either looted or destroyed. Health financing agencies either completely folded off or reduced their activities to the barest minimum. At the moment it is only the principal partners of UNICEF and WHO who are trying hard to help the immunisation services. Financing from GAVI (Global Alliance for Vaccines and Immunisation) now is a principal support to the program.

The health structure of Liberia is decentralised into the 15 counties which constitute the country. Each of these counties represents a health district and is headed by a Medical Officer. At this level there are curative and preventive medical services. The immunisation program is part of the preventive medicines services and headed by an EPI County Supervisor or Officer.

The Liberia Immunisation Program at central level is run as one of the Divisions of the Directorate of Preventive Medicines in the Ministry of Health and Social Welfare. It has a Manager at its head assisted by an Assistant Manager. The services under it include: Logistics; Social and Resources Mobilisation; Routine EPI/Data Management and Surveillance.

Approach and Methodology of the Audit

An audit is fundamentally based on evaluating the Quality System Index (QSI) in five aspects: 1) Recording; 2) Reporting and Filing of reports; 3) Demography and Planning; 4) System Design and 5) Monitoring and Evaluation. These five are applied at national level meanwhile four are evaluated at district level and three at health unit level. The verification factor which is calculated from the DPT 3 recounted against the reported, constitute the yard stick on which GAVI bases it support to the system of each country.

Four district are randomly selected, one each from four strata (each strata representing 25% of the districts with a big population down to the ones with small population). This selection is usually done prior to the arrival of auditors in the country by the LATH/EHG (Liverpool Associates in Tropical Health and Europe Health Group) Consortium. For Liberia, this was not the case as the selection had to be done by the auditors with permission from LATH/EHG. This was due to a misunderstanding of the definition of a district in the country. This led to the initial choosing of what can be qualified as health areas as some were without the sufficient number of HUs legible for audit and no official structures. For example, Montserrado North and South constitute two health areas which make up the Montserrado district.

An adapted questionnaire was administered at each of the different levels – National; District and Health Unit levels. These were used to evaluate data and stock (especially vaccine stock) management. This information is then put a designed excel workbook which automatically calculates thee quality indices and the verification factor.

Besides the different courtesy calls at national level, the audit was carried out in four districts: Margibi, Montserrado I, Montserrado II, and Bong. It was conducted by the two teams at national level, one team each to two districts and twelve HUs. The teams each were constituted of an external auditor, an internal auditor (see table below) and a district counterpart

Name	***Position***	***Districts Visited***
TOLLO Bienvenu	*External Auditor*	*Montserrado I and Margibi*
NJWEIPI Jet	*External Auditor*	*Montserrado II and Bong*
TUOPILEYI Roland	*National Auditor*	*Montserrado II and Bong*
TARR Angelina	*National Auditor*	*Montserrado I and Margibi*

Though the off-the-paved-roads are not too good at this season, both teams managed to get to all the districts and Health Units selected. Security was not much of a problem since the war is over and the peace keeping forces are quite comprehensive.

The audit therefore took place normally in the four districts selected though the National Day and the resultant public holiday, on the 26th July chopped one precious day. However the auditors were able to arrange their schedules to compensate this. All the 24 HUs selected were visited, so none of the reserve HUs replaced the regularly selected ones. One HU – Our Lady of Fatima – had to be visited later on the 1st of August, out of its regular schedule, 27th July, as on the scheduled date of the visit, the personnel responsible were absent.

A debriefing meeting with the ICC was held on 4th August, 2005, with representatives from the Ministry of Health and Social Welfare, UNICEF, WHO and other partners. The Vice Minister was presiding in place of the Minister who later joined during the session. No issues were raised after the debriefing exercise but the EPI Manager and Vice Minister each took turns to appreciate the work and said it was a true reflection of the situation of Liberia.

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:

3. Key findings

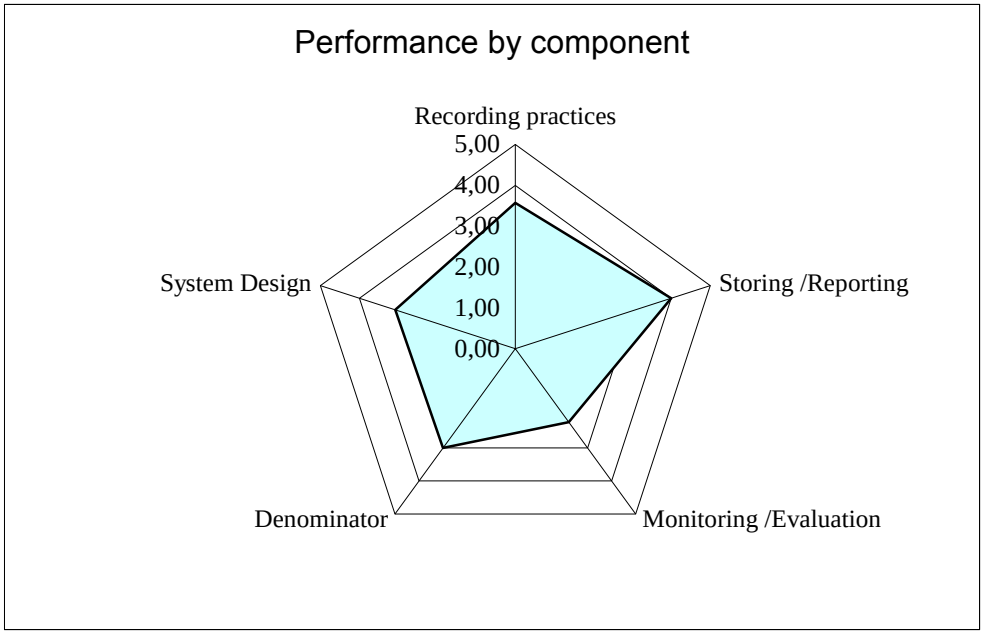
Data Accuracy

The Verification Factor (VF) is the ratio between the DTP3<1 recounted from tally sheets or registers during the DQA and the figures reported in the monthly summary reports: Recounts/ reported. The verification factor found for Liberia during this audit was **0.78** with a lower limit of 0.47 and the upper limit of 1.09 at a 95% Confidence Interval (CI).

This VF is relatively low, under the requested number of 0.80, reflecting the relative low level of data accuracy in the 24 selected and visited HUs. In all districts the DQA team found more DTP3<1 reported than recounted. A particular case in point is Margibi district with the biggest total difference (978) between DTP3<1 reported and recounted. In the other districts, the difference is lowest in Montserrado I and II (21 and 79) whereas Bong showed a relative high difference of 137 reported DTP3<1.

The reason for the situation in Margibi was due to missing tally sheets, particularly at the HUs Harbel Center (709 DTP3<1 over reported) and Divison 28 (300 DTP3<1 over reported). There is no evidence of missing information in Montserrado I and II and Bong. In these districts, the team suspected a transcription error at some HUs.

3.1 Key Issues at National Level



Key Issues

The above spider-web graph shows 44% of bad performance for monitoring and evaluation. The best performance is storing and reporting with 80%. The other aspects have scored: 71% for recording; 62% for system design; 60% for Denominator.

The few lines below discuss the factors, which have contributed positively or negatively to each of the five indicators evaluated.

Recording practices

Data processing is a key issue at the EPI at national level. They work in close collaboration with the HMIS Unit. There is even a radio to help the process of timely assembly of information. The staff in charge of data entry for incoming reports do this immediately as the reports arrive. For instance, the audit team noticed that all June 2005 EPI data that had arrived had been treated on computer.

Recording formats (tally sheets and reporting forms, child cards and vaccination registers, etc.) have been introduced and are being used widely all over Liberia. All Districts visited were sufficiently supplied with these tools.

The National Cold Chain immediately updates the receipts and issue of vaccines and syringes. The team was able to read in the ledger books the last receipt of 142 000 doses of DTP on 20th April, 2005 registered as well as the most recent record of receipt of TT vaccine (95 000 doses on 29th October 2004) and the last receipt and issues of autodestruct syringes. The team is aware of and registers batch numbers and expiry dates on all supplies and issues. However, the Cold Chain did not maintain a ledger book for vaccine in the audit year 2004.

Storing and Reporting

The 80% achieved on storing and reporting is as a result of the care given to keeping and processing data. However, one shortcoming is the fact that there are few computers at this level which do not work in network. Back-up for data is done at individual level with no clear official instructions on this matter. There is no information pasted relating to the performance of the EPI for a given period. If a copy of information is required it needs to be obtained from the computer.

The Standard Operational Procedures (SOPs) have been elaborated for use in the whole country, giving guidelines on the reporting format, period, retention deadline, the handling of incoming reports, but the use of this is doubtful in the field. Instructions on treating late reports are unclear.

Denominator

The denominator used changes from year to year. However, the definition of denominators is still a problem out of EPI control. The auditing team has noticed that the denominator matter is a problem since the figures continue to be based on projection from an old census. On the other hand, civil war, displacement and migration/movement of people and continuous restructuring of the administrative system have contributed to the relatively high versus very low coverage rates in

some districts. It would appear that the main partners (UNICEF and WHO) do not agree or give conflicting instructions on denominator matters, eg the growth rate percentage, the percentage of each target group in a given population etc. The general lack of regular calculation of indicators such as vaccination coverages can partly be attributed to the none mastery of population figures.

The EPI HQ is responsible for calculating the County's Denominators using the recently projected population data by the CBS/UNFPA (a joint Government and UN agency Population Statistic Sector) and/or the Ministries of Planning or Population matters. The Counties are responsible for calculating of Denominators for each lower structure below it. The County is responsible for reporting back to EPI HQ the denominator adopted for each Health Area (catchments). Because this is done in this way it appears that the vaccinators are navigating in darkness. Some even use denominators completely differently from those used at other levels. In addition, other health programs use any population figures that they imagine. However, during the visit to the selected Districts, the team noticed that some districts had denominators that agreed with the one at national level.

The country still uses different denominators for different health programs with the excuse that they don't have the same target population.

System Design

The system design has some revision to be made, especially as regards defining the health structures. For health matters the County should be called District, under which are Health Areas and then the Health Facilities. This will agree with international nomenclature and reduce problems of identifying these structures that was experienced at the beginning of this audit.

The matter of integrated reporting (immunisation data with other health data) is still not smooth. More needs to be done to properly define roles between the HMIS and the EPI, especially with the use of the radio for receiving and transmitting information. Evidence of integration only appeared at the national level. Since EPI has its vaccination staff working as independent teams, there were no integrated reports/tabulations found either at from the HU to the District or from District to the National level.

It was explained that in general, the whole health information system in Liberia was very weak and just being put in place. The EPI decided to implement an independent information system through which should be able to report promptly and completely on immunisation data to the Ministry of Health.

The country still has no national SOPs (Standard Operational Procedures) or formats for reporting AEFI (Adverse Events Following Immunisation).

Monitoring & Evaluation

The weakest point at this level is monitoring/evaluation. There are no displayed charts, tables and other monitoring indicators (eg. DO rate of DTP 1-3 (<1), report completeness and timeliness, stamping and signing of incoming reports, with written

monthly feedback to the districts and production of an annual report, country's map of performance by district, vaccine stock out monitored by radio, supervisions, vaccine wastage, injection safety etc.) are not available. If these exist they are calculated and used at individual level. No map of the country is displayed. Supervision or monitoring supervision activities are non-existent. Monitoring documents are in computers and not displayed for public viewing.

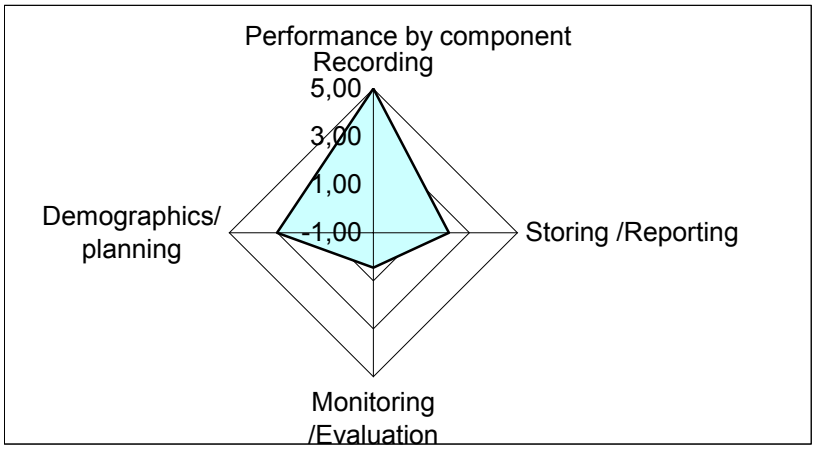
Therefore monitoring and evaluation will need a lot of improvement.

The coverage for the audit year is 31%, and the drop out rate was not monitored but has been calculated at 36%. The change in the reported DPT3 between 2003 and 2004 is negative (-1356)

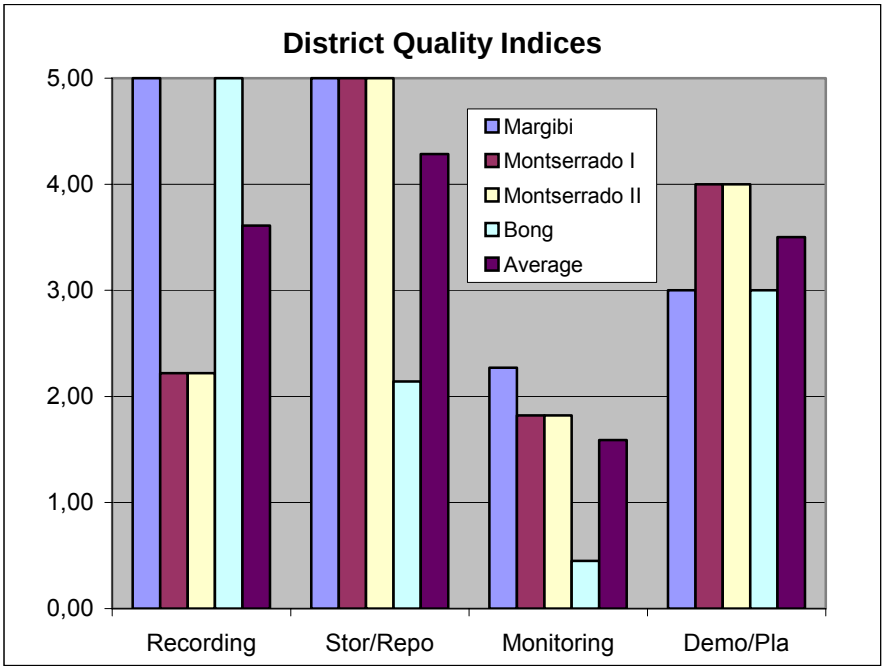
4.3 Key Issues at District Level

The system indices for the four districts are as follows:

DISTRICTS	Quality System Index
Margibi	69.7%
Montserrado I	57.6%
Montserrado II	57.6%
Bong	51.4%
Average	**59.08**



The performance by component in the above spider-web graph is an example of the Bong District (County), which shows that monitoring is the weakest of the four components and recording is the best. Demographic matters and storing/reporting continue to be a problem and need to be improved. At this level especially the matter about defining the structures below and the flow of information need to be addressed.



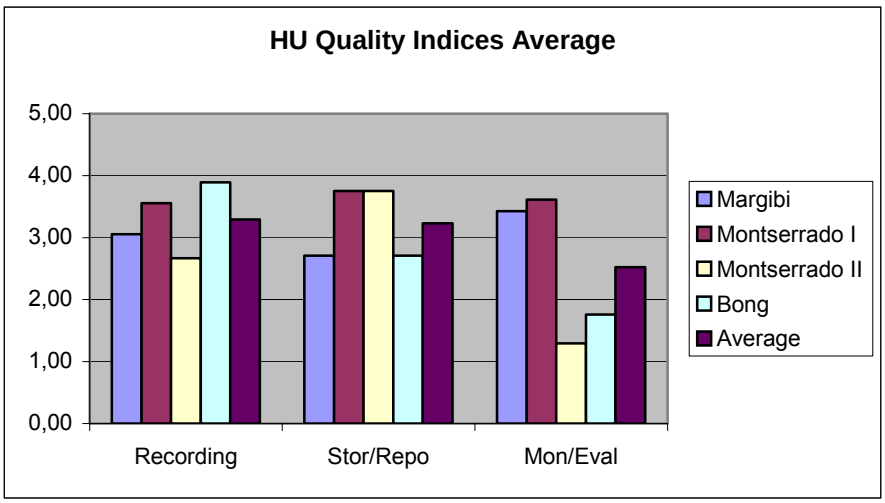
In the graph above, relating to recording, Margibi and Bong are highest (100%) and Montserrado I and II are lowest (44%). The reverse is true for the same districts as concerns demographic and planning, where Margibi and Bong scored 60% and the districts of Montserrado scored 80%. Margibi, Montserrado I and II appear to be doing very well (100%) with regard to storing and reporting practises. For monitoring and evaluation and storing and reporting, the Bong district (county) needs to make the hardest efforts to improve.

Moreover, the team observed some missing information at district level. For example in Margibi the monthly reports from two HUs for two months were not reported and not found at district level.

The following issues need to be addressed and well defined at this level:

- the consistency of reporting to the district by the lower units;
- the monitoring of vaccine wastage, drop out rate, etc.
- the updating of the denominator.

3.2 Key Issues at Health Unit Level



The above graph gives the average of the quality indices from the Health Units relating to the three components of evaluation at the HU level. It can be observed that all Health Units appear to be doing well as regards recording, storing and reporting. For monitoring and evaluation, the Health Units in Montserrado II and in Bong district are weakest compared to the others while those of Margibi and Montserrado I appear to manage the matter better.

The following issues should be addressed:

- The use and up dating of vaccines ledger books
- The keeping of records for syringes, safety boxes and other supplies;
- The definition of target population
- The monitoring of vaccine wastage, drop out rates, etc.
- The reporting of all data from the tally sheet onto the monthly summary sheet (avoid underreporting!).
- The production of annual tabulations of vaccination activities

3.3 Core indicators

Vaccine Safety

As mentioned above the matter of monitoring the supplies of AD syringes and safety boxes is not taken seriously. When this is done, it is registered into the vaccine ledger book, usually in a small corner. The account is hardly up to date, especially at health unit level. However, there is evidence of high availability and use. At all levels it is said that supply respects the one dose one syringe formula. Safety boxes are much in the same situation.

Reporting AEFI is not taken seriously as there are no national instructions to this effect. However AEFI are said to be very rare. Of all the health units and district visited none declared having had any serious cases. Nobody has consequently been able to declare any occurrence to the higher body. The few occurrences of mild signs after vaccination such as fever, local irritations and inflammation have been handled locally without any major incidences.

Wastage

Table 1 DQA Vaccine Wastage Rates (Weighted Means)

	Margibi	Montserrado I	Montserrado II	Bong
District WR (unopened)	na	na	na	na
Average WR for HUs (opened and unopened) [1]	na	na	na	na

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

[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

From the table above it can be seen that most of the information obtained did not permit calculation of the wastage rate at district and HU levels. Most of the Health Facilities in 2004 did not use vaccine ledger books, or if they were used, could not provide complete information to permit the calculation of the WR. We are at least satisfied that for 2005 something has and is already being done in this light.

Vaccine ledger books were found in some HUs visited and the personnel are still in the process of getting used to them. In other counties the personnel have not yet been trained in their use. In general, a new version needs to be printed and introduced into the health units to correct some aspects which were not well addressed in the current version (batch number, expired date).

Most wastage found at HUs resulted from scanty attendance at vaccination sessions due to vaccinating daily, particularly in small centres. Generally, the preservation of vaccines even at HU level is not satisfactory.

Presently, the monthly reporting form provides space to calculate wastage rate. Therefore it can be said that the process of monitoring vaccine wastage has begun.

Completeness & Timeliness of Reporting

The completeness of reports at national level in the audit year is 65.0% up from 41.7% in the previous year. This can be explained by the fact that some districts were still in conflict (civil war).

At district level, the completeness of reporting is highest in Margibi (83.3%) and the low rates were observed in Montserrado I and II (45.7%) and in Bong (49.0%).

Other Core Indicators

District	DPT3 < 1 Coverage 2003	DPT3 < 1 Coverage 2004	Change Coverage (CR)	DOR (DPT1-DPT3) 2003	DOR (DPT1-DPT3 2004	Change DOR
Margibi	31.6%	38.9%	7.3%	19.6%	34.2%	14.6%
Montserrado I	31,2%	65.2%	34.0%	19.6%	24.7%	5.1%
Montserrado II	31.2%	65.2%	34.0%	19.6%	24.7%	5.1%
Bong	28.9%	23.9%	- 5.0%	36.3%	46.4%	10.1%

The table above shows that the DPT3 < 1 coverage rates (CR) are higher in 2004 for Margibi. Montserrado I and II in comparison to 2003. The two districts of Montserrado show the highest coverage rate. At Bong the CR was negative This can be explained by the fact that some parts of this district were still in conflict (civil war).

The drop-out rates (DORs) were higher for all Districts in the audit year 2004 in comparison to the previous year 2003. from the table it can be observed that Montserrado I and Montserrado II appear to be doing well.

4. RECOMMENDATIONS

Priority recommendations

- ► Redefinition of health structures for levels below districts
- ► Possibly avoid sub districts
- ► Redefinition of flow of reports to districts
- ► Only standard monthly reports should be sent to and filed at the districts
- ► All fixed vaccinating HUs shall use and keep vaccine ledger books

Other recommendations

Recording

- ► Revise tools:
  tabulation (provide space for % etc.)
  tally sheet (no need for sex ...)
  Monthly report format (DOR, WR, Cum vac acts, AEFI etc.)
  vaccine ledger (batch no, expiry date, balances etc.)
  SOPs (instruction on late reporting, AEFI etc.)

Storing/Reporting

- ► Give written instructions on the treatment of late reports
- ► More hardware for the treatment of data
- ► Officiate the system of back up in soft and hard copies
- ► An EPI post board for information
- ► Supervise this aspect

Monitoring/Evaluation

- ► Calculation and display of vaccination indicator:VC, DORs,...
- ► Monitor vaccine wastage – Open vial policy
- ► Injection security should be intensified – AD syringes, safety boxes, incenaration & disposal
- ► Do regular supervision of lower structures
- ► Provide feedback
- ► Training and refresher courses at all levels

Demographic and Planning

- ► A plan for revision of denominators should be conceived
- ► The denominator used should be consistent at all levels

System Design

- ► Counties should be named Health Districts and district called Health Areas
- ► The MOH should address the matter of integrated reporting and make it operational at all levels
- ► Matters of AEFI should be documented and space provided in the collection tools
- ► Computerization of the districts

ANNEXES

I. **Key Informants** - 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.

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

Health Units by District

Margibi	Montserrado I	Montserrado II	Bong
Harbel Center	Soniwien	Clara Town Health Centre	Bong Mines Hospital
Division 28	New Georgia	Redemption Hospital	Salala MSF Health Centre
CH Rennie	Gardnersville	Star of the Sea Health Centre	Maimu MSF Health Centre
SRC	Du-Port Road	ELWA Hospital	C.B. Dunbar
UTC	St Joseph Catholic Hospital	Community Maternity Clinic	Palala Health Centre
FPAL	Bushroad Community	Our Lady of Fatima Rehabilitation C.	Gbartala HealthCentre

District 1: Margibi

Name	Position
Mr. James Lorwoe	County EPI Supervisor
Mr. William Srbley	Cold Chain Manager

District 2: Montserrado I

Name	Position
Mr. Jonah S. TOE	Health Officer
Mr. Michael E. YEARGAR	Supervisor
Mr. Charles RICHARDS	Cold Chain Manager
Mrs. Margaret TOGBA	Technical Officer/ Supervisor

District 3: Montserrado II

Name	Position
Mr. Jonah S. TOE	Health Officer
Mr. Michael E. YEARGAR	Supervisor
Mr. Charles RICHARDS	Cold Chain Manager
Mrs. Margaret TOGBA	Technical Officer/ Supervisor

District 4: Bong

Name	Position
Mr Stephen S. B. COOPER	District EPI Supervisor
Mrs. FATORMA Jusu	Com. Surveillance Officer
Mr. Aurthur G. TARR	Cold Chain Manager
Mr. Alex KORPU	Supervisor

National Level	
Name	**Position**
Dr. Mohammed SANKOH	National EPI Manager
Ms. Ellen KOIGBLI	Assistant National EPI Manager
Mrs. Angela M. Kearney	UNICEF Representative
Mr. Keith J. Wright	Senior Programme Officer, UNICEF
Dr. Boubakar Dieng	EPI Officer UNICEF
Mr. Roland TUOPILEYI	Data Manager
Mrs. Angelina TARR	National Supervisor
Mr. Tamba MOSERAY	National Supervisor
Mr. Francis MASSAQUOI	National Logistic Officer
Mrs. Sando JOHNSON	Administrative Officer
Mr. John WILSON	Controller
Mr. Patrick KING	Cold Chain Technician
Mr. Joseph BROH	Cold Store Officer
Mr. Joseph KPAHEA	Generator Technician
Ms. Venus GEGEH	Secretary
Ms. Miatta CAIN	Secretary
Mr. Saturday NYAH	Driver
Mr. Emmanuel CHEA	Driver
Mr. Amadu NYEI	Janitor
Debriefing	
Name	**Position**
Dr. S. Benson Barh	Deputy Minister of Health
Dr. Mohammed Sankoh	National EPI Manager
Dr. Boubakar Dieng	EPI Officer UNICEF
Mr Björn Forssen	UNICEF
Mr Keith Wright	Senior Programme officer, UNICEF
Mrs Julie Kiwanuka	UNMIL/RRR (HQ)
Mr J. Amadu Kiawu	Ministry of Internal Affairs (MIA)
Dr. Bienvenu Tollo	GAVI Auditor
Mr. Jet Njweipi	GAVI Auditor
Mrs. Ellen Koigbli	EPI, MOH
Meimei Dukuly	MOH
Fatoma Bolay	WHO
Mrs. Juli Endee	MOH
J. T. Duworka	USAID

ANNEX II

CORE INDICATORS TABLES

Core indicators at National level

	JRF	Reported at time of audit
Districts with DPT3<1 coverage > 80%	0	0
Districts with measles<1 coverage > 90%	1	1
Drop-out rate		30.70%
Type of syringes	AD	AD
Districts with AD syringes	100%	100%
Introduction HVB	NO	NO
Introduction Hib	NO	NO
Vaccine wastage DPT	NA	NA
Wastage rate HVB	NA	NA
Wastage rate Hib	NA	NA
Interruption in vaccine supply 2004		NO
Number of Districts with interruption in vaccine supply 2004	NONE	NONE
% District disease surveillance reports received/expected	NA	NA
% District coverage reports received/expected		65%
% District coverage reports received on time		NA
Number of District supervised at least once in 2004		0
Number of Districts which supervised all HUs in 2004	10	10
Number of Districts with microplans including routine immunisation	0	0

Core indicators at District level

		Margibi	Montserrado I	Montserrado II	Bong
District DPT3 coverage	At national	62%	78%	78%	21%
	At District	40%	51%	51%	24%
District measles coverage	At national[2]	60%	75%	75%	44%
	At District	46%	56%	56%	44%
District Drop-out DPT1-3[3]	At national	NA	6.14%	6.14%	54%
	At District	34%	23%	23%	54%
Syringes supplied in 2003	At national	NA	NA	NA	NA
	At District	NA	456,220	456,220	NA
Number of District coverage reports received/sent	At national	NA/12	12/12	12/12	12/12
	At District	18/12	4/12	4/12	12/12
Number of coverage reports received on time/sent on time	At national	NA/12	NA/12	NA/12	NA/12
	At District	18/12	4/12	4/12	NA/12
Number of HU coverage reports received/sent	At national				
	At District	18/12	35/12	35/12	NA/12
Number of HU reports received/sent on time	At national				
	At District	18/12	28/12	28/12	NA/12
District vaccine stock out	At national	NA	NA	NA	YES
	At District	YES	NA	NA	YES
Has the District been supervised by higher level on 2003	At national	YES	YES	YES	YES
	At District	YES	YES	YES	YES
Has the District been able to supervise all HUs in 2003	At national				
	At District	NO	YES	YES	NO
Did the District have a microplan for 2003	At national				
	At District	NO	YES	YES	NO

[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
D1 Margibi	5,00	5,00	2,27	3,00
D2 Montserrado I	2,22	5,00	1,82	4,00
D3 Montserrado II	2,22	5,00	1,82	4,00
D4 Bong	5,00	2,14	0,45	3,00
District Average	**3.61**	**4.23**	**1.59**	**3.5**

HU Quality indices and HU average (over 5)

	D1 Margibi				D2 Montserrado I		
	Record.	Stor/Rep.	Mon/Eval		Recording	Stor/Repo	Mon/Eval
HU 1	2,67	3,75	2,78	HU 1	4,33	3,75	3,89
HU2	2,67	2,50	2,78	HU2	4,00	3,75	3,33
HU3	2,67	2,50	3,89	HU3	3,00	3,75	3,89
HU4	4,00	2,50	3,89	HU4	3,00	3,75	3,89
HU5	2,67	2,50	3,89	HU5	3,00	3,75	3,33
HU6	3,67	2,50	3,33	HU6	4,00	3,75	3,33
HU average	**3,06**	**2,71**	**3,43**	**HU average**	**3,56**	**3,75**	**3,61**

	D3 Montserrado II				D4 Bong		
	Record.	Stor/Rep.	Mon/Eval		Recording	Stor/Repo	Mon/Eval
HU 1	3,00	3,75	2,78	HU 1	2,33	3,75	1,67
HU2	3,00	3,75	1,67	HU2	4,33	0,00	1,67
HU3	2,67	3,75	0,56	HU3	4,33	1,25	1,67
HU4	3,00	3,75	1,11	HU4	5,00	3,75	0,00
HU5	2,33	3,75	1,67	HU5	4,00	3,75	2,78
HU6	2,00	3,75	0,00	HU6	3,33	3,75	2,78
HU average	**2.67**	**3.75**	**1.30**	**HU average**	**3.89**	**2.71**	**1,76**