The National Census of Health Workers in Liberia

2010

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** For LISGIS to add: Could you provide a map of Liberia to put on the front?**

Acronyms

BPHS	Basic Package of Health Services
GOL	Government of Liberia
HW	Health Worker
HR	Human Resources
HRH	Human Resources for Health
LD	Liberian Dollars
LISGIS	Liberia Institute of Statistics & Geo-Information Services
MOHSW	Ministry of Health and Social Welfare
USD	United States Dollars
WHO	World Health Organization

1. Introduction and Objectives

1.1. Country Background

1. Located on the west coast of Africa, Liberia is a small country with a population of about 3.5 million.[1] Between 1989 and 2003, the country endured a devastating civil war, characterized by intermittent periods of peace and fighting, that left the country's basic infrastructure in tatters and brought social service provision to a halt. In addition, the civil war led to large movements of people, both within the country and abroad.[2]

2. Although peace and stability and the installation of a reform-minded government have brought about improved economic conditions, a majority of the population continues to live in poverty. According to the 2007 Poverty Reduction Strategy, 1.7 million Liberians are living in poverty. Of the 1.7 million, 1.3 million—nearly half of the population-- are living in extreme poverty.[3] Unsurprisingly, therefore, Liberia ranks very low on the Human Development index--- 169 out of 182 countries.[4] However, the current leadership has been able to gradually institute reforms and develop policies that have led to noticeable improvements in many sectors of government, including the health sector.

1.2. Health Sector Overview

3. Since the restoration of peace and stability, the Ministry of Health and Social Welfare (MOHSW) has made significant efforts to reform the health sector and improve access to quality health care. The Ministry is guided by a National Health Policy and Plan which outlines the government's plans for delivering quality health services to the people. A cornerstone of the health care delivery strategy is the Basic Package of Health Services (BPHS), which stipulates the preventative and curative services available at every level of care and includes specific requirements in terms of infrastructure, equipment and drug availability and human resources necessary to provide the basic package. [5]

4. Despite the recent efforts to reform the heath sector, the sector continues to face significant challenges, many of which result from the fact that the civil war brought about the total destruction of many health facilities and caused many people, including health workers (HWs) to flee the country. An assessment of the BPHS in January 2009 shows that the human resources for health (HRH) situation is

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[1] *Ref?*
[2] Around 500,000 people are reported to have been externally and internally displaced.
[3] In this instance, the poverty line is measured as a household non-food consumption of 115 USD per year in rural areas and 263 USD per year in urban areas. The extreme poverty line is measured as an annual household food consumption of 242 and 241 USD in rural and urban areas, respectively. *Liberia PRSP report*, July, 2008.
[4] *Human Development Report 2009.*
[5] *Ref?*

characterized by an inadequate number of qualified and skilled health workers throughout the country. Only Nimba County[6] met the human resources (HR) and management requirements; all other counties scored less than 70%, with Grand Kru and River Gee meeting only 48 % of the required HR and facility management levels.[7]

1.3. Objectives of the Census

5. Liberia's National Health Plan for 2007-2011 stipulates that "human resources are the most valuable asset of the health sector".[8] In recognition of this, the MOHSW set out specific goals for HRH, including estimating present and future staffing needs of the health sector and developing HW recruitment, retention and deployment incentives schemes.

6. As noted above, the civil war caused population shifts both within the country and abroad. In light of this, it is vital for the MOHSW to have an accurate picture of the geographic distribution of HWs and to be able to compare this distribution with the distribution of the population. Therefore, in September 2009, the Ministry conducted a nationwide census of HWs, representing the first time a quantitative study of all HWs in Liberia has been conducted. This report presents the results of that census.

7. The **overall objective** of the census was to provide the MOHSW with the information needed to formulate its HR policy in order to meet their target of increasing access to basic health care to the population**.** The findings of this report are aimed at providing the MOHSW with key information on the HRH situation in support of the government's efforts to improve health service delivery throughout the country.

The specific objectives of the census were:

- To determine the distribution of HWs in various counties and health facilities, including their skill mix;
- To provide socio-demographic and economic characteristics of the HWs; and
- To provide baseline data for future HW surveys.

[6] Liberia is made up of 15 political sub-divisions known as "counties".
[7] *Basic Package for Health and Social Service for Liberia*, June 2008.
[8] *National Health Policy and National Health Plan*, MOHSW, 2007.

2. Study Design & Methodology

This section briefly outlines the design and implementation of the census. A more detailed description of the key aspects of the design of the census and the challenges faced can be found in Annexes A,B and C.

2.1. Study Design

8. The census was designed to cover all HWs in all operational health facilities and places where drugs are sold (i.e. hospitals, health centers, clinics, pharmacies, dispensaries and medicine stores, as well as the MOHSW itself). In total, 603 facilities were covered. Table 1 details the number and type of facilities covered.

Table 1: Number of facilities covered by type

FACILITY TYPE	TOTAL
Clinic	423
Health Center	42
Hospital	31
Pharmacy / Dispensary	104
MOHSW Office	3
TOTAL	603

9. A questionnaire was developed that included a range of questions on various aspects of the HWs' profile (e.g. age, income, etc.) and a number of specific questions on housing and transport conditions. After a two-day pilot conducted by a team of four from the MOHSW, the questionnaire was modified. This pilot also assessed the duration of each interview and the clarity and sensitivity of each question. A coding system was introduced in order to allocate a unique code for use in indexing each questionnaire in a database and avoiding duplication of records.

2.2. Methodology

10. **Recruitment and training of field workers:** The Liberia Institute for Statistics and Geo-information Services (LISGIS) was contracted on behalf of the MOHSW to conduct the census as a way of reducing bias. A total of 93 enumerators, 21 supervisors, and 11 monitors were recruited to conduct the census. LISGIS recruited individuals from a pool of experienced enumerators from each of the counties who, after being trained, were placed within their respective counties to carry out the field work. The field workers had experience in census taking but were not necessarily familiar with the health system.

11. All field workers were brought to Monrovia and trained for three days (September 7-9, 2010). The training included a full explanation of the objectives of the census as well as a detailed explanation

of the questionnaire, general interview techniques and details on identifying inappropriate answers. In addition, the training included an overview of the procedure the field workers must follow upon arrival at a facility.

12. **Collection of data**: The data collection process started on September 20, 2010 and lasted for a period of 20 days. Before the start of the census, radio announcements were made via the United Nations Mission in Liberia's radio station to alert the population that the HWs census was going to take place. In addition, the facilities were contacted before the visits by the data collection teams.

13. The enumerators were divided into groups of two to three persons in order to conduct the one-on-one interviews with HWs at each facility. Upon arrival at a facility, the teams would liaise with the officer in charge to select a specific space (if available, an empty, self-contained room) where the HWs could be interviewed one by one. As HWs had different schedules at facilities, the officer in charge assisted in making sure that the HWs would come to be interviewed when their schedule permitted. At smaller facilities with a dozen or less HWs this was easily arranged. At larger facilities such as hospitals, the data collection teams would, if possible, start working in a particular staff area (e.g. particular ward) and interview all the HWs working in that section before moving on to the next area. Again, the officer in charge played a vital role in helping to ensure the HWs came to the data collection teams and that all HWs were interviewed. If a HW listed on the duty roaster was absent on the day that the enumerators visited a facility, their absence was noted by the enumerators on a specific form for absentee HWs.

The supervisors were supposed to make sure that all questions were answered accurately and completely by monitoring interviews and checking the questionnaires as they were handed to them by the enumerators. However, ~ LISGIS to describe what caused so many inconsistencies while supervisors were supposed to check that – MAYBE THIS IS DUE TO DATA ENTRY PROBLEM?

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14.

The monitors' role was to assist in coordinating, supporting, and monitoring the various groups of enumerators and supervisors. **LISGIS to Add: was this done as planned?**

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15. **Data entry**: After the questionnaires were completed, the supervisors collected them from the enumerators and verified that all questionnaires were completed and that all facilities were covered before sending the questionnaires to the LISGIS headquarters in Monrovia. LISGIS recruited and trained six data entry clerks with what qualification?**LISGIS to add** to enter the census data. A supervisor was recruited to build a Database using CSpro (version) and supervise the data entry team. The census data were entered into a database ~. **LISGIS to add: was double entry used?**

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16. **Data management:** Before analysis, the data were cleaned of errors. The initial raw data resulting from the census contained a number of errors. For example, the HW record code, which was supposed to be unique for each HW, was duplicated so that more than one HW had the same record code in some cases. There were also other instances of errors wherein an individual questionnaire contained one response that was inconsistent with a later response contained responses that were simply unrealistic (e.g. a physician holding the position of cleaner within a facility). In order to clean the

data, the MOHSW provided LISGIS with a list of areas where there were problems and then also given instructions as how it should perform the data cleaning. After LISGIS returned the dataset, further cleaning was done, specifically regarding coding for the facilities and on a number of other variables. Annex C explains in detail the errors that occurred and the cleaning process for each type of error.

17. **Data analysis**: The MOHSW provided a list of indicators (variables) for analysis as well as a tabulation plan. The geographic distribution, as well as the distribution by facility type, of HWs. The makeup of HWs by cadre, gender, salary levels and many other variables was also analyzed in order to provide the MOHSW with the information needed to develop their HRH strategy. This data will also enable the Ministry provide comparisons over time.

2.3. Limitations of the Survey

18. Overall, the census was able to give an accurate depiction of the HRH situation in the country. However, there were a number of limitations which may affect the accuracy and completeness of the results:

- There was no built-in mechanism to prevent double counting of respondents, (e.g. the use of ink to mark respondents who had already been interviewed). Therefore, a limited number of HWs working in multiple facilities might have been counted more than once.
- HWs absent at the time of enumeration were not interviewed.
- A number of facilities (143) were not visited by the data collection teams due to ~**LISGIS to add**...The bulk of these facilities were clinics.
- A written set of guidelines for enumerators, which might have included operational definitions as well as interview techniques, was not provided. Since some enumerators did not have prior knowledge of the health system, they did not properly probe inconsistent answers in several instances.
- Missing data during data entry and analysis

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3. Results of the Census

The results presented in this section are intended to provide a comprehensive snapshot of the HRH situation in the country during the time of the census. The indicators are structured around the stock and distribution of HWs and their profile. The results are based upon HWs who were interviewed during the census and do not include the HWs who were recorded as absent.

3.1. Stock

19. **The census recorded 9,196 HWs throughout the country** (Table 2). During the data collection period, a total of 8,768 HWs were interviewed. After this period, a further 428 HWs who were absent during the time of the census interviews were included in a second grouping after checking the duty rosters and sign-in books.[9] Since the absentee HWs were not interviewed and thus no data on these HWs was collected, the results in the rest of this report refer only to the 8,768 HWs that were encountered at the facilities and interviewed during the census, unless stated otherwise. [10]

Table 2: Number of HW interviewed and absent during the census

Total no. of HWs interviewed	8,768
Total no. of HWs absent during the interview, but listed on the rosters	428
Total HW population recorded by the census	9,196

20. **Nursing staff (nurses and nurse aides) make up 34.9% of the health workforce—thus constituting the bulk of the 62.5% of clinical HWs. Nurses and nurse aides make up 16.3% and 18.6%, respectively, of the total HW population** (Table 3)**.** Around 38% of the health workforce is non-clinical staff. This grouping includes a wide variety of positions and roles, from cleaners, driver and security staff to administrative positions within facilities and government offices. Other key cadres include physician assistants (3%), a cadre introduced to deal with medical manpower shortages, particularly in rural areas, and certified midwives (5%).

[9] It is standard practice for facilities in Liberia to have sign-in books for their staff to sign in before they start a shift. During the pilot study, all facilities visited had sign-in books. The data collection teams did not note any significant number of facilities without signing in books. However, it is possible that the book was not always available to the data collection teams.

[10] Some tables have less than 8,768 HWs due to missing data (e.g. n/a).

Table 3: Number and percentage of cadres (detailed)

CADRE (Group and individual)		Number	%
Clinical Health Workers		5346	62.5%
Physician		90	1.1%
	Physician	67	0.8%
	Surgeon	23	0.3%
Nurse		1393	16.3%
	Graduated Nurse	129	1.5%
	Licensed Practical Nurse (LPN)	255	3.0%
	Nurse Anesthetist	55	0.6%
	Nurse Midwife	66	0.8%
	Registered Nurse	824	9.6%
	Scrub Nurse	64	0.7%
Certified Midwife		412	4.8%
Physician Assistant		286	3.3%
Nurse Aide		1589	18.6%
Traditional Midwife		243	2.8%
	Traditional Midwife	50	0.6%
	Trained Traditional Midwife	193	2.3%
Dentist		23	0.3%
	Dental Surgeon	8	0.1%
	Dentist	15	0.2%
Environmental Health Technician		173	2.0%
	Environmental Health Technician	119	1.4%
	Health Inspector	54	0.6%
Lab technician / assistant		376	4.4%
	Lab Aide/Assistant	239	2.8%
	Lab Technician	137	1.6%
X-Ray Technician		22	0.3%
Pharmacist		46	0.5%
Other		693	8.1%
	Physiotherapist	6	0.1%
	Social Worker	182	2.1%
	Dispenser	505	5.9%
Non-Clinical Health Workers		3207	37.5%
Accountant		88	1.0%
Cleaner		707	8.3%
Field Worker		127	1.5%
Non-Clinical Professional		1285	15.0%
Registrar		457	5.3%
Security		515	6.0%
Surveillance		28	0.3%
Total		**8553**	**100.0%**

3.2. Distribution

3.2.1. By County

21. **In terms of distribution of HWs, Montserrado County has the highest percentage of HWs (33%), which is not surprising given the fact that this county houses the capital city of Monrovia, and 32% of the population (Table 4).** However, a number of cadres are disproportionately concentrated in Montserrado County; in particular, 53% of physicians, 59% of dentists and 91% of X-ray technicians are located there.

22. **Lofa County stands out as having the highest proportion of traditional midwives in the countr**y. In fact, 23.5% of traditional midwives (trained and untrained) are based in that county, while the county with the highest population, Montserrado, only has 7.4%.[11] Bong, Nimba and Lofa have similar percentages of nurses-- between 8.6% and 8.9%. However, Lofa has a higher percentage of physicians (10%) than both Bong and Nimba (both 5.6%). Nimba, which has the highest population out of the three counties, has the lowest percentage of certified midwives (6.3%) out of the three counties.

23. **One manner in which to study HW sufficiency is to look at proxy indicators such as those utilized by WHO**. One such indicator is the proportion of births attended by skilled health personnel. The 2006 WHO World Health Report[12] set 2.5 skilled birth attendants (which includes only nurses, midwives, and doctors) per 1,000 population as a minimum threshold density in order to achieve the desired level of coverage of 80% of births. Figure 1 shows that none of the counties come close to achieving this level. Nationwide, the number of nurses, certified midwives, and doctors (physician and surgeon) per 1,000 population is only 0.55, roughly one fifth of the desired level. Bomi has the highest rate of these cadres per 1000 population while Nimba has the lowest. In terms of all clinical cadres Bomi has the highest number per 1000 population (2.28) followed by Sinoe (2.21). Interestingly, Grand Kru has a below average physician, nurse and certified midwife rate per 1000 population while an above average amount of clinical HW overall. It should be noted, however, that this figure does not include the absent HWs and thus is slightly deflated. Furthermore, a number of facilities were not covered, which might also affect this figure.

3.2.2. By County of Origin

24. **Almost a quarter of all HWs (24.3%) originate from Lofa County, while only 2.9% originate from Montserrado County (Table 5).** The proportion of physicians, nurses, certified midwives and physician assistants originating from Lofa is even higher; for all these cadres roughly a third originates from Lofa. The other counties from which a high proportion of HWs originate are Nimba and Bong, where 13.1% and 11.5%, respectively.

25. Most of the HWs currently stationed in Montserrado were born in a different county, following the general pattern of migration of people into that county from the countryside that has occurred over

[11] Lofa houses about 8% of the population. The other two counties outside of Montserrado with a higher percentage of the country's population are Bong (9.6%) and Nimba (13.3%).
[12] 2006 World Health Report, WHO, p.11

the last few decades. Table 6 shows where the HWs working at the various facilities are from in terms of county of origin. The table shows that only 6.8% of HWs currently stationed in Montserrado were born in the county. This is in contrast to most other counties where the majority of HWs working in the county were born in the same county. Furthermore, HWs from Lofa represent the second largest group (after those born locally) of HWs in each county in most cases.

26. **A high proportion, often the majority, of HWs born outside Montserrado County have since moved to that county.** Table 7 shows where the HWs from the various counties are now working. The dark grey areas show the counties in which a high proportion of HWs are currently stationed. Less than 40% of HWs born in Bong, Grand Kru and Maryland have stayed in their respective counties of origin. In contrast, the vast majority (76.3%) of HWs from Montserrado have remained there. Also worth noting is the fact that 81.7% of those born in Grand Gedeh, and 61.5% in Nimba have also remained in their respective counties.

Table 4: Distribution of HW cadres by county

Cadre	Bomi	Bong	Gbarpolu	Grand Bassa	Grand Cape Mount	Grand Gedeh	Grand Kru	Lofa	Margibi	Maryland	Montserrado	Nimba	River Cess	River Gee	Sinoe	Total
Physician	1.1%	5.6%	1.1%	5.6%	1.1%	2.2%	1.1%	10.0%	4.4%	6.7%	53.3%	5.6%	1.1%	0.0%	1.1%	90
Nurse	3.8%	8.9%	1.9%	6.4%	3.5%	2.9%	0.9%	8.6%	6.5%	3.4%	36.8%	8.7%	2.8%	1.9%	3.1%	1393
Certified Midwife	5.6%	10.4%	2.4%	4.4%	3.4%	2.2%	1.7%	9.0%	8.7%	2.7%	37.1%	6.3%	1.9%	2.2%	1.9%	412
Nurse Aide	4.3%	5.9%	2.3%	5.0%	2.7%	3.1%	3.1%	15.0%	7.7%	3.6%	29.9%	9.1%	1.8%	2.5%	4.0%	1589
Physician Assistant	2.4%	3.5%	1.4%	3.5%	3.1%	3.5%	1.4%	7.0%	3.8%	5.9%	44.1%	11.5%	2.8%	3.8%	2.1%	286
Traditional Midwife	0.0%	2.1%	4.1%	5.8%	1.6%	3.7%	7.0%	23.5%	1.2%	3.7%	7.4%	16.5%	5.3%	3.7%	14.4%	243
Dentist	0.0%	0.0%	0.0%	0.0%	0.0%	4.3%	0.0%	0.0%	0.0%	0.0%	91.3%	4.3%	0.0%	0.0%	0.0%	23
Environmental Health Technician	3.5%	2.9%	4.0%	7.5%	1.7%	3.5%	2.9%	3.5%	3.5%	6.9%	42.2%	4.0%	4.0%	3.5%	6.4%	173
Lab technician / assistant	3.2%	5.9%	1.6%	4.8%	2.1%	3.5%	1.9%	8.8%	8.2%	2.7%	33.2%	17.3%	0.5%	2.1%	4.3%	376
X-Ray Technician	0.0%	4.5%	0.0%	4.5%	0.0%	0.0%	0.0%	9.1%	13.6%	0.0%	59.1%	9.1%	0.0%	0.0%	0.0%	22
Pharmacist	4.3%	10.9%	2.2%	4.3%	4.3%	4.3%	0.0%	10.9%	6.5%	0.0%	43.5%	4.3%	0.0%	0.0%	4.3%	46
Other Health Cadres	2.9%	8.8%	1.3%	4.0%	5.6%	4.0%	1.9%	7.6%	4.6%	4.5%	31.2%	11.1%	2.9%	3.8%	5.8%	693
Non-Clinical Health Workers	3.6%	7.5%	1.7%	5.4%	3.6%	3.6%	3.4%	8.6%	5.3%	5.0%	32.7%	9.9%	2.5%	2.0%	5.1%	3207
Total	3.6%	7.2%	1.9%	5.3%	3.4%	3.3%	2.6%	10.0%	6.0%	4.2%	33.3%	9.8%	2.4%	2.3%	4.6%	8553
Proportion of Population*	2.4%	9.6%	2.4%	6.4%	3.7%	3.6%	1.7%	8.0%	6.0%	3.9%	32.2%	13.3%	2.1%	1.9%	2.9%	3,476,608

* Based on LISGIS national population census 2008.

Figure 1: Clinical HW per 1000 population and Physicians, Nurses & Certified Midwives per 1000 Population Per County

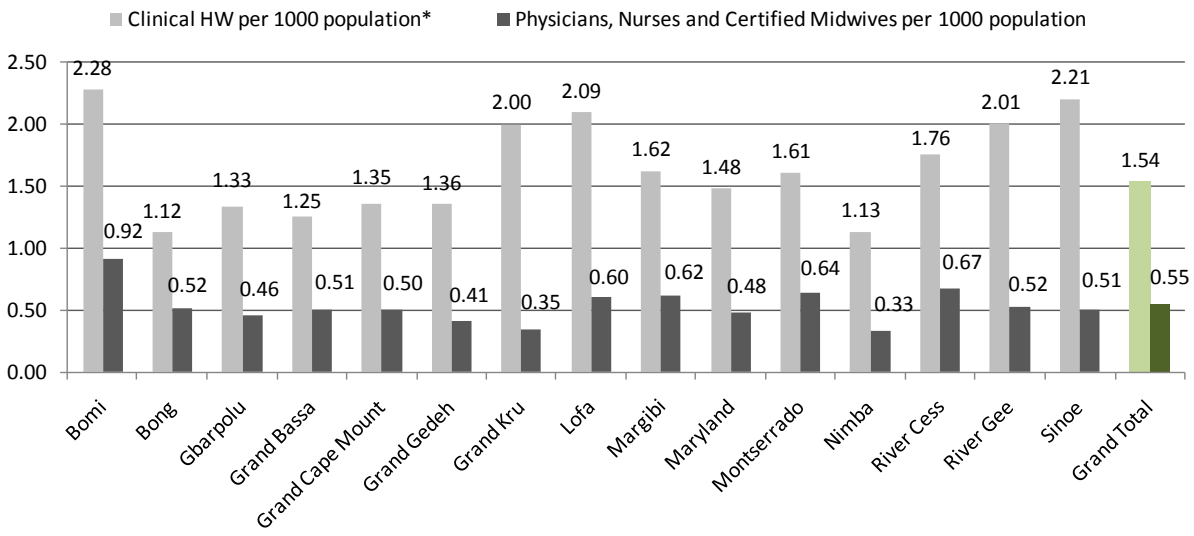


Table 5: County of origin of HWs by cadre

Cadre	Bomi	Bong	Gbarpolu	Grand Bassa	Grand Cape Mount	Grand Gedeh	Grand Kru	Lofa	Margibi	Maryland	Montserrado	Nimba	River Cess	River Gee	Sinoe	Total
Physician	1.5%	7.7%	3.1%	4.6%	3.1%	0.0%	4.6%	33.8%	3.1%	6.2%	7.7%	12.3%	1.5%	3.1%	7.7%	65
Nurse	2.5%	14.4%	2.6%	5.6%	5.0%	1.4%	3.7%	32.0%	1.4%	7.2%	2.8%	14.0%	1.9%	1.9%	3.5%	1387
Certified Midwife	3.2%	13.6%	1.9%	6.3%	3.9%	1.0%	5.1%	33.1%	1.7%	8.8%	2.7%	10.9%	1.5%	2.2%	4.1%	411
Nurse Aide	3.0%	9.0%	2.5%	7.3%	4.9%	2.8%	7.5%	25.8%	1.5%	6.8%	3.0%	12.8%	2.4%	4.0%	6.6%	1583
Physician Assistant	2.4%	5.6%	3.1%	5.2%	4.9%	1.4%	4.9%	33.9%	2.4%	5.6%	3.5%	15.0%	3.1%	4.9%	3.8%	286
Traditional Midwife	0.0%	5.3%	4.1%	4.9%	2.1%	2.9%	9.1%	25.5%	0.4%	4.9%	1.6%	15.6%	5.8%	4.5%	13.2%	243
Dentist	11.1%	5.6%	0.0%	0.0%	0.0%	0.0%	0.0%	11.1%	5.6%	11.1%	5.6%	27.8%	0.0%	5.6%	16.7%	18
Environmental Health Tech.	1.2%	13.5%	1.2%	9.4%	4.1%	1.8%	7.0%	22.2%	1.2%	6.4%	2.9%	12.3%	1.8%	5.8%	9.4%	171
Lab technician / assistant	2.4%	13.6%	3.7%	4.0%	3.2%	3.7%	6.9%	24.3%	1.1%	3.7%	2.1%	21.6%	1.6%	3.5%	4.5%	375
X-Ray Technician	4.5%	27.3%	0.0%	0.0%	0.0%	0.0%	0.0%	27.3%	0.0%	4.5%	0.0%	13.6%	0.0%	9.1%	13.6%	22
Pharmacist	0.0%	21.7%	2.2%	0.0%	6.5%	6.5%	0.0%	23.9%	2.2%	13.0%	8.7%	8.7%	0.0%	2.2%	4.3%	46
Other Health Cadres	2.5%	11.0%	2.6%	5.1%	7.6%	3.5%	4.8%	20.6%	2.0%	6.9%	2.6%	13.9%	3.2%	5.0%	8.6%	684
Non-Clinical Health Workers	3.5%	11.8%	2.4%	9.3%	5.4%	3.1%	7.8%	18.8%	2.2%	6.1%	3.0%	11.6%	3.4%	3.2%	8.4%	3185
Total	2.9%	11.5%	2.5%	7.2%	5.0%	2.6%	6.5%	24.3%	1.8%	6.5%	2.9%	13.1%	2.8%	3.4%	6.9%	8476

Table 6: County of origin of HWs by county stationed

County of current duty station	County of origin															Grand Total
	Bomi	Bong	Gbarpolu	Grand Bassa	Grand Cape Mount	Grand Gedeh	Grand Kru	Lofa	Margibi	Maryland	Montserrado	Nimba	River Cess	River Gee	Sinoe	
Bomi	35.2%	8.8%	7.2%	4.2%	7.5%	0.3%	2.0%	23.1%	0.3%	3.6%	2.3%	3.9%	0.3%	0.3%	1.0%	307
Bong	0.5%	58.9%	2.6%	2.9%	0.8%	0.0%	0.8%	21.0%	1.8%	2.4%	1.1%	5.1%	0.8%	0.3%	0.8%	613
Gbarpolu	1.8%	6.0%	53.0%	3.0%	4.8%	0.0%	0.0%	19.9%	0.0%	3.0%	1.8%	3.6%	0.6%	0.6%	1.8%	166
Grand Bassa	1.8%	9.4%	0.2%	54.2%	1.8%	0.0%	2.5%	9.2%	2.2%	3.1%	0.9%	5.2%	5.6%	0.7%	3.1%	445
Grand Cape Mount	2.4%	3.1%	1.4%	4.9%	65.7%	0.0%	1.4%	11.2%	0.7%	2.8%	0.3%	3.8%	0.0%	1.0%	1.0%	286
Grand Gedeh	0.4%	3.5%	0.7%	0.0%	1.8%	64.4%	0.7%	7.0%	0.7%	2.8%	1.1%	3.9%	0.4%	5.3%	7.4%	284
Grand Kru	0.0%	1.3%	0.0%	0.4%	0.4%	0.4%	90.1%	4.0%	0.0%	1.3%	0.0%	0.4%	0.0%	0.0%	1.3%	223
Lofa	0.0%	1.5%	0.4%	0.5%	0.5%	0.0%	0.1%	95.0%	0.1%	0.6%	0.5%	0.8%	0.0%	0.0%	0.1%	854
Margibi	2.6%	16.7%	2.4%	8.6%	3.9%	0.2%	1.8%	28.1%	14.1%	5.5%	4.1%	8.1%	0.8%	1.0%	2.2%	509
Maryland	0.0%	1.9%	0.3%	1.7%	1.4%	0.6%	15.3%	6.4%	0.3%	57.1%	0.0%	2.8%	0.6%	9.7%	1.9%	359
Montserrado	3.3%	12.2%	2.2%	7.4%	5.3%	1.2%	8.2%	23.7%	1.5%	7.6%	6.8%	9.0%	2.2%	2.2%	7.2%	2804
Nimba	0.5%	5.4%	0.4%	1.8%	0.7%	0.0%	0.5%	5.2%	0.7%	1.3%	0.5%	81.9%	0.1%	0.4%	0.7%	832
River Cess	1.5%	2.9%	0.5%	11.2%	0.5%	0.0%	1.5%	7.8%	0.0%	2.9%	1.0%	3.4%	62.0%	1.0%	3.9%	205
River Gee	0.5%	2.5%	0.0%	1.0%	0.0%	0.0%	1.0%	4.0%	0.5%	4.5%	0.5%	5.1%	1.5%	75.8%	3.0%	198
Sinoe	0.5%	2.0%	0.5%	4.1%	1.0%	0.5%	4.6%	3.6%	0.5%	2.6%	0.5%	1.5%	0.8%	2.0%	75.2%	391
Total	2.9%	11.5%	2.5%	7.2%	5.0%	2.6%	6.5%	24.3%	1.8%	6.5%	2.9%	13.1%	2.8%	3.4%	6.9%	8476

Legend:

0.0%	10.0%	20.0%	30.0%	40.0%	50.0%	60.0%	70.0%	80.0%	90.0%	100.0%

Table 7: County stationed by HW county of origin

County of current duty station	County of origin															
	Bomi	Bong	Gbarpolu	Grand Bassa	Grand Cape Mount	Grand Gedeh	Grand Kru	Lofa	Margibi	Maryland	Montserrado	Nimba	River Cess	River Gee	Sinoe	Total
Bomi	43.9%	2.8%	10.2%	2.1%	5.4%	0.4%	1.1%	3.5%	0.7%	2.0%	2.8%	1.1%	0.4%	0.3%	0.5%	307
Bong	1.2%	37.1%	7.4%	3.0%	1.2%	0.0%	0.9%	6.3%	7.2%	2.7%	2.8%	2.8%	2.1%	0.7%	0.9%	613
Gbarpolu	1.2%	1.0%	40.7%	0.8%	1.9%	0.0%	0.0%	1.6%	0.0%	0.9%	1.2%	0.5%	0.4%	0.3%	0.5%	166
Grand Bassa	3.3%	4.3%	0.5%	39.5%	1.9%	0.0%	2.0%	2.0%	6.6%	2.5%	1.6%	2.1%	10.7%	1.0%	2.4%	445
Grand Cape Mount	2.8%	0.9%	1.9%	2.3%	43.9%	0.0%	0.7%	1.6%	1.3%	1.5%	0.4%	1.0%	0.0%	1.0%	0.5%	286
Grand Gedeh	0.4%	1.0%	0.9%	0.0%	1.2%	81.7%	0.4%	1.0%	1.3%	1.5%	1.2%	1.0%	0.4%	5.2%	3.6%	284
Grand Kru	0.0%	0.3%	0.0%	0.2%	0.2%	0.4%	36.5%	0.4%	0.0%	0.5%	0.0%	0.1%	0.0%	0.0%	0.5%	223
Lofa	0.0%	1.3%	1.4%	0.7%	0.9%	0.0%	0.2%	39.4%	0.7%	0.9%	1.6%	0.6%	0.0%	0.0%	0.2%	854
Margibi	5.3%	8.7%	5.6%	7.2%	4.7%	0.4%	1.6%	7.0%	47.4%	5.1%	8.4%	3.7%	1.7%	1.7%	1.9%	509
Maryland	0.0%	0.7%	0.5%	1.0%	1.2%	0.9%	10.0%	1.1%	0.7%	37.2%	0.0%	0.9%	0.9%	12.0%	1.2%	359
Montserrado	37.8%	35.2%	28.2%	34.1%	35.0%	15.2%	41.6%	32.3%	28.3%	38.7%	76.3%	22.7%	26.1%	21.6%	34.3%	2804
Nimba	1.6%	4.6%	1.4%	2.5%	1.4%	0.0%	0.7%	2.1%	3.9%	2.0%	1.6%	61.5%	0.4%	1.0%	1.0%	832
River Cess	1.2%	0.6%	0.5%	3.8%	0.2%	0.0%	0.5%	0.8%	0.0%	1.1%	0.8%	0.6%	54.3%	0.7%	1.4%	205
River Gee	0.4%	0.5%	0.0%	0.3%	0.0%	0.0%	0.4%	0.4%	0.7%	1.6%	0.4%	0.9%	1.3%	51.5%	1.0%	198
Sinoe	0.8%	0.8%	0.9%	2.6%	0.9%	0.9%	3.3%	0.7%	1.3%	1.8%	0.8%	0.5%	1.3%	2.7%	50.2%	391
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	8476

Legend:
0.0% 10.0% 20.0% 30.0% 40.0% 50.0% 60.0% 70.0% 80.0% 90.0% 100.0%

3.3. Profile

3.3.1. Gender

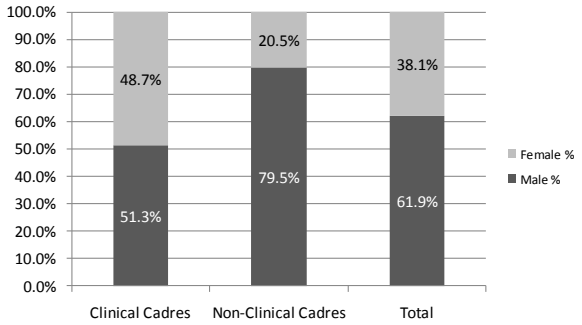
27. **Overall, the majority of HWs are male (61.9%).** While male HWs are the majority in most cadres, female HWs outweigh males in others. For example, Table 8 shows that the proportion of male physician assistants (84.6%), physicians (84.4%), lab technicians/assistants (84.3%), pharmacists (78.3%) and non-clinical HWs (79.5%) far outweighs the proportion of female. On the other hand, female HWs represent the largest percentage of nurses (57.4%), certified midwives (98.3%) traditional midwives (97.5%).

Table 8: Gender breakdown by cadre

	Male		Female		Total
Cadre	No.	%	No.	%	No
Physician	76	84.4%	14	15.6%	90
Nurse	594	42.6%	799	57.4%	1393
Certified Midwife	7	1.7%	405	98.3%	412
Nurse Aide	819	51.5%	770	48.5%	1589
Physician Assistant	242	84.6%	44	15.4%	286
Traditional Midwife	6	2.5%	237	97.5%	243
Dentist	14	60.9%	9	39.1%	23
Environmental Health Technician	137	79.2%	36	20.8%	173
Lab technician / assistant	317	84.3%	59	15.7%	376
X-Ray Technician	21	95.5%	1	4.5%	22
Pharmacist	36	78.3%	10	21.7%	46
Other Health Cadres	475	68.5%	218	31.5%	693
Non-Clinical Health Workers	2551	79.5%	656	20.5%	3207
Total	5295	61.9%	3258	38.1%	8553

28. **The preponderance of male HWs is primarily within non-clinical cadres (Figure 2).** When looking only at clinical cadres, however, there are only slightly more male HWs (51.3%) than female (48.7%).

Figure 2: Gender breakdown of clinical and non-clinical cadres



3.3.2. Age and experience

29. **Liberia has a relatively old health workforce with 60.9% of all HWs, excluding cleaners or security, aged 40 or over (Table 9).**[13] In contrast, 30% of HWs are in their 30s and only 9% of HWs are in their 20s. Female HWs are generally slightly younger than their male counterparts-- 53.5% of female HWs are aged 40 or over compared to 66.1% of male HWs. There are a number of factors that might contribute to the age of the health workforce including the fact that the training institutes responsible for training HWs were not operational as a result of the civil war.

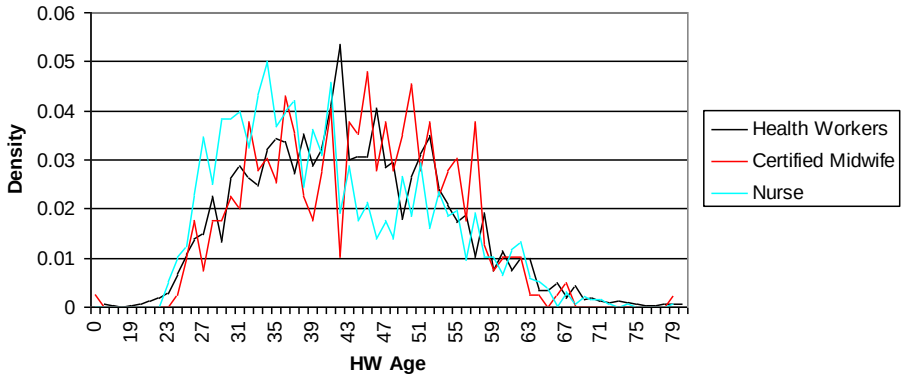
Table 9: HW age range by gender (excluding security and cleaner)

Age Category	Male		Female		Grand Total	
<30	328	7.6%	336	11.2%	664	9.1%
30 - 39	1129	26.3%	1061	35.3%	2190	30.0%
40 - 49	1513	35.2%	959	31.9%	2472	33.9%
50 - 59	987	23.0%	550	18.3%	1537	21.1%
60 +	340	7.9%	97	3.2%	437	6.0%
Grand Total	4297		3003		7300	

30. **The age distributions of certified midwives roughly follow that of all HWs combined, while there is a higher density of nurses between the ages 25-35 than with the rest of the HW population (figure 3).**

Figure 3: Age distribution of HWs

[13] Security and cleaners were omitted in this case because they are usually in the older age group, possible skewing the total figures.



31. **Nearly a third (30.8%) of HWs have had 2 years or less of work experience (Table 10).** Similar to the older age makeup of HWs, this lack of work experience might also be attributed to the fact that much of the health infrastructure, including training institutes for HWs, was destroyed during the war and has been only been rebuilt relatively recently. As Table 11 demonstrates, male HWs are, on average, slightly more experienced than female HWs; on average, male HWs have had 7.1 years of work experience compared to the female experience average of 6.6 years.

Table 10: Years of work experience by gender

	Male		Female		Total	
Experience	No.	%	No.	%	No.	%
less than 1 year	59	1.1%	39	1.2%	98	1.1%
1-2 years	1520	28.2%	1071	32.3%	2591	29.7%
3-4 years	1134	21.0%	682	20.6%	1816	20.8%
5-6 years	828	15.3%	421	12.7%	1249	14.3%
7-8 years	327	6.1%	173	5.2%	500	5.7%
9-10 years	460	8.5%	336	10.1%	796	9.1%
11-12 years	278	5.2%	177	5.3%	455	5.2%
13-14 years	169	3.1%	69	2.1%	238	2.7%
15+ years	621	11.5%	347	10.5%	968	11.1%
Total	5396		3315		8711	

Table 11: The mean and median of HW work experience by gender

Gender	No.	Mean	Median
Female	3,315	6.6	4.0
Male	5,396	7.1	4.0
Total	8,711	6.9	4.0

32. **What is striking about the HRH situation in Liberia is that there is relatively weak correlation between HW age and experience.** In most countries older HWs have more years of work experience. This is less so the case in Liberia where a relatively old HW population exists with a relative low number of years of experience in relation to their age. Table 12 shows that while HWs between the ages of 20-29 have had on average 2.9 years of experience, HWs between the ages of 30-39 have had only one year more experience (4.1). The age group, 40-49, which is the largest, has on average 6.6 years of experience.

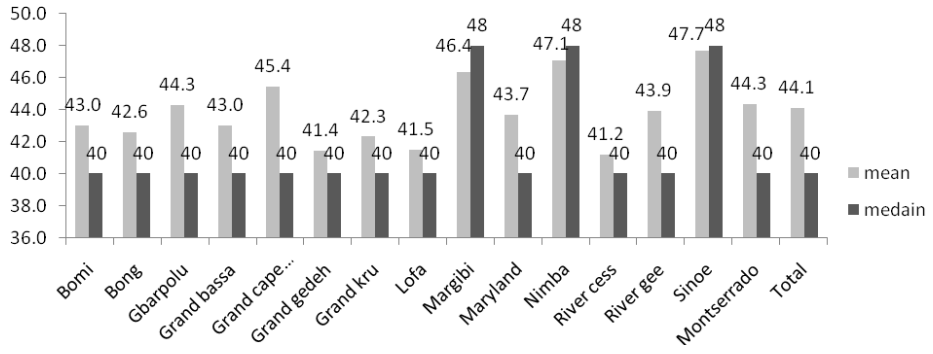
Table 12: Mean and median experience (years)

Category	No. of HWs	Mean experience	Median experience
<30	731	2.9	2
30 - 39	2,498	4.1	3
40 - 49	2,804	6.6	5
50 - 59	1,756	11.3	8
60 +	566	12.6	8
Total	8,355	6.9	4

3.3.3. Hours worked per week

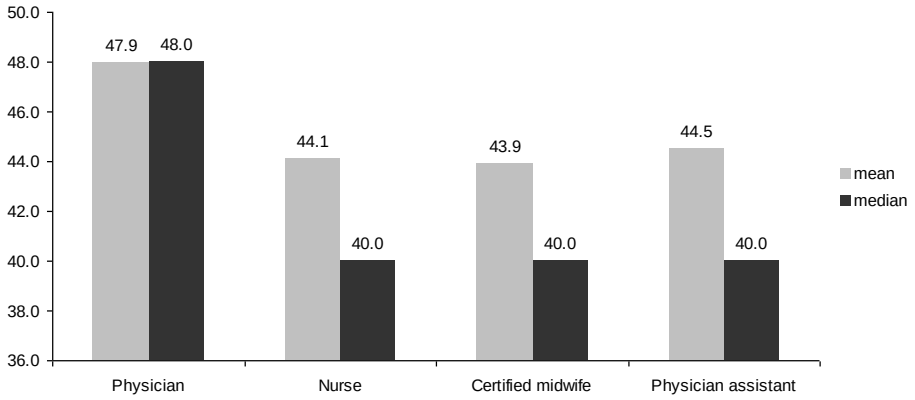
33. **The average hours HWs work per week is 44.1.** This number varies between counties (Figure 3). HWs in Sinoe reported working the most hours per week. Whereas the average number of hours worked per week in River Cess is 41.2, in Sinoe, the reported workload is highest with 47.7 hours worked per week by HWs on average.

Figure 4: Hours worked per week by county



34. **Average hours worked per week varies by cadre.** Figure 4 shows that, whereas physicians on average work 47.9 hours per week, nurses, certified midwives and physician assistants work between 43.9 and 44.5 hours per week.

Figure 5: Mean and Median hours worked per week for physicians, nurses, certified midwives and physician assistant



3.3.4. Employment status

35. **There are various types of employment arrangements[14] that are possible within the health sector. The largest segment of HWs (29.7%) are government employees while 22.7% are volunteers, 22.7% are contract employees, and 16.4% are for-profit employees (Table 13).** Not surprisingly, very few of the higher-level cadres, such as physicians, are volunteers, while almost half of traditional midwives (46.5%) are volunteers. The Government of Liberia (GOL) is the largest employer of physicians with 51.1% of all physicians in the country working directly for the GOL.

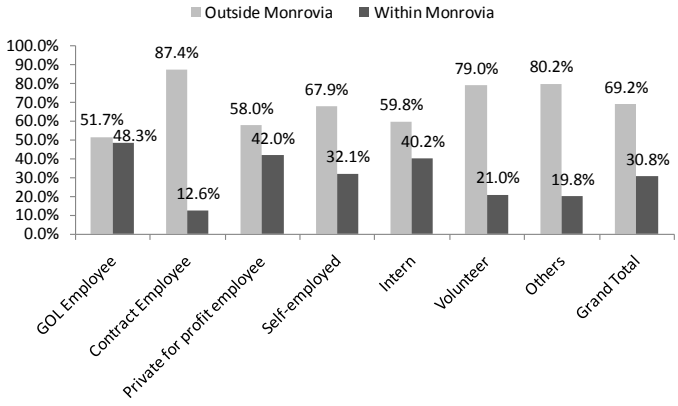
Table 13: HWs employment type by cadre

Cadre Grouping	GOL Employee	Contract Employee	Private for profit employee	Self-employed	Intern	Volunteer	Others	Total
Physician	51.1%	15.6%	22.2%	0.0%	0.0%	7.8%	3.3%	90
Nurse	30.6%	19.3%	18.9%	1.2%	1.6%	18.6%	9.9%	1387
Certified Midwife	37.7%	19.1%	13.9%	0.5%	1.0%	19.1%	8.8%	409
Nurse Aide	24.7%	25.9%	17.7%	0.7%	1.1%	24.5%	5.3%	1584
Physician Assistant	43.4%	19.9%	16.1%	1.0%	1.4%	14.0%	4.2%	286
Traditional Midwife	21.8%	21.8%	6.6%	0.4%	0.4%	46.5%	2.5%	243
Dentist	56.5%	4.3%	34.8%	0.0%	0.0%	4.3%	0.0%	23
Environmental Health Tech.	57.9%	19.3%	2.3%	0.0%	1.2%	17.5%	1.8%	171
Lab technician / assistant	24.1%	23.5%	25.7%	0.3%	1.1%	19.8%	5.6%	374
X-Ray Technician	40.9%	9.1%	40.9%	0.0%	0.0%	4.5%	4.5%	22
Pharmacist	39.1%	15.2%	23.9%	0.0%	0.0%	17.4%	4.3%	46
Other Health Cadres	30.8%	23.7%	13.6%	4.6%	0.1%	21.5%	5.6%	692
Non-Clinical HWs	28.0%	23.8%	15.6%	0.4%	0.5%	24.6%	7.2%	3193
Total	29.7%	22.7%	16.4%	0.9%	0.9%	22.7%	6.7%	8520

36. **Whereas almost half of the HWs employed by the GOL are based in Monrovia, only 12.6% of contract employees are stationed in the capital (Figure 5).** Similarly, most volunteers (79.0%) are stationed outside Monrovia. As shall be shown below, this has an impact on the incomes of GOL employees in comparison to contract employees; incomes tend to be higher in the capitol and since most contract employees are based outside Monrovia, their salaries on average are lower than that of GOL employees.

Figure 6: Percentage of HW stationed within or outside Monrovia per employment type

[14] **GOL employee**: those under a civil service contract with a payment plan according to the civil service scale: **contract employee**: those who have been contracted, either by the MOHSW or non-governmental agencies: **volunteer**: those who are not on a salary scheme but might receive financial incentives from the MOHSW; **interns**: those following an internship program; **private for profit employee**: those under the employment of a private for-profit company; **self-employed**: those working as a HW in their own business (i.e. private pharmacists). **Others:** HWs were given the option of "others" if none of the other categories referred to their employment situation. Details of their employment situation was not noted in this case.



3.3.5. Reported income

37. **Almost two thirds (63.6%) of HWs have a reported income[15] of USD 100 or less with the bulk of respondents (49.6%) falling into the 50-100 USD range (Table 14). In terms of gender,** 44.0% of female HWs reported that they earn USD 100 a month or more compared to 31.7% of male HWs.

Table 14: Reported monthly income of HWs by gender

Income (USD)	Male No.	%	Female No.	%	Total No.	%
0	302	5.7%	307	9.4%	609	7.1%
< 25	122	2.3%	89	2.7%	211	2.5%
25 - < 50	258	4.9%	115	3.5%	373	4.4%
50 - < 75	504	9.6%	331	10.2%	835	9.8%
75 - < 100	2415	45.8%	983	30.2%	3398	39.8%
100 - < 125	296	5.6%	187	5.7%	483	5.7%
125 - < 150	213	4.0%	306	9.4%	519	6.1%
150 - < 175	243	4.6%	206	6.3%	449	5.3%
175 - < 200	117	2.2%	95	2.9%	212	2.5%
200 - < 225	218	4.1%	166	5.1%	384	4.5%
225 - < 250	48	0.9%	54	1.7%	102	1.2%
250 +	540	10.2%	419	12.9%	959	11.2%
Total	5276		3258		8534	

38. **Overall, the reported income of nurses is higher than that of certified midwives but lower than that of physician assistants (Table 15).** Physicians are the highest earners of the HWs followed by pharmacists. Traditional midwives earn the least.

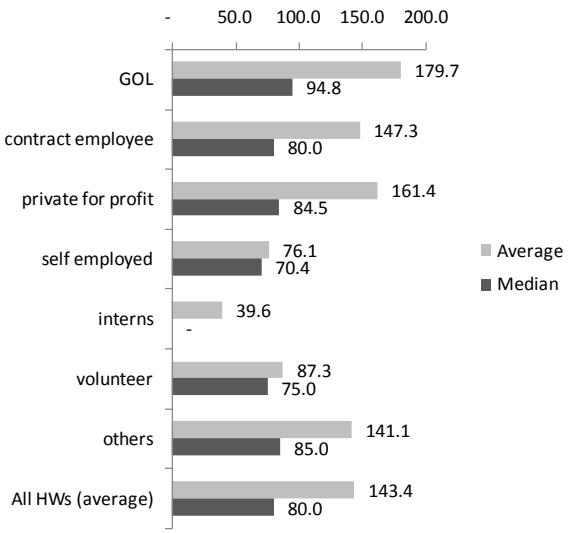
[15] The question was overall income, rather than their salary only. These reported figures often include other forms of income a HW can have separate from his or her standard salary as a HW. Income was reported in both USD and Liberian dollars (LD). Liberian dollars were converted to USD with an exchange rate of 71LD to 1 USD.

Table 15: Monthly income by selected cadre types (USD)

Cadre	No.	Mean	Median
Physician	76	$1,114.19	$ 995.16
Nurse	1366	$ 202.26	$ 163.00
Certified midwife	401	$ 170.19	$ 143.00
Nurse aide	1550	$ 85.86	$ 80.00
Physician assistant	275	$ 225.15	$ 213.00
Traditional midwife	238	$ 55.12	$ 71.27
Dentist	22	$ 374.42	$ 98.59
Environmental health technician	167	$ 112.84	$ 91.73
Lab technician	366	$ 128.45	$ 75.00
X-ray technician	22	$ 152.06	$ 125.15
Pharmacist	44	$ 487.40	$ 100.00
Other health cadres	656	$ 95.53	$ 75.00
Non-clinical cadres	3118	$ 125.43	$ 75.00
Total	8301	$ 143.36	$ 80.00

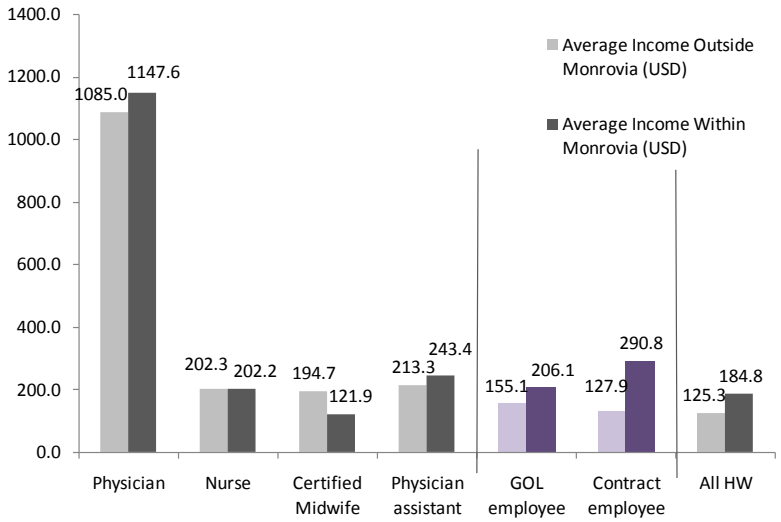
39. **Overall, GOL employees have a higher reported income than HWs in other employment categories (Figure 6)**. On average GOL employees earn USD 179.7 per month, compared to contract employees (the second largest employment group) who earn USD 147.3. As was noted above, the majority of HWs under contract employment are stationed outside the capital where, on average, income is lower than within Monrovia. While the average salary of interns is USD 39.6, since such a large number of interns do not receive a salary, the median value for their income is 0.

Figure 7: Mean and median monthly income by employment type (USD)



40. **Overall HWs earn more within Monrovia than outside the capital (Figure 7). Reported incomes of HWs are higher within Monrovia for physicians and physician assistants but not for certified midwives.** While the average income for certified midwives within Monrovia is USD 122, outside the capital the average reported income is USD 195. For nurses the average salary within Monrovia is roughly the same as outside Monrovia. GOL employees on average earn less than contract employees within Monrovia but earn more than contract employees outside the capital. Since the majority of contract employees are stationed outside Monrovia, the average salary as a whole of GOL employees is higher (para. XX).

Figure 8: Reported average income levels of selected cadres by employment type and location



3.3.6. Educational level

41. **The results from the census indicate that a very high proportion of HW have too low an education for their cadre, however, this could be due to errors in the data collection**. A high proportion of physicians (17.8%), nurses (28.9%) and certified midwives (43.2%) were recorded as not having a high enough education for their cadre. There are minimum educational requirements for each skilled HW. For example, the minimum requirement for a physician is an MD-level education. 16 out of the 90 physicians in the country stated a lower level education, with 6 recorded as only having a high-school diploma. These large amount of discrepancies, however point towards a high likelihood of erroneous data (see annex D).

Table 16: Education level of selected skilled HW

Cadre Grouping	None	High School drop-out	High School Diploma	AA	College Diploma	BSc/BA	MSc/MA/MBA(or Masters)	MD	PhD	Vocational training	Others	Grand Total	Number of HW with too low education	% of total HW with too low education
Physician			6	1	1	2	6	67	2		5	90	16	17.8%
Nurse	11	12	380	219	162	311	12	1		144	141	1393	403	28.9%
Certified Midwife	8	4	166	24	58	1				59	92	412	178	43.2%
Dentist	1		9	1	2		2	2			6	23	15	65.2%
X-Ray Technician			16	1	1						4	22	16	72.7%
Pharmacist		1	13		3	15	1			4	9	46	14	30.4%
Grand Total (all HW)	802	1050	3307	423	410	598	49	72	3	798	995	8507	1756	20.6%

The numbers in red indicate where the education level of the HW is too low for the cadre.

3.3.7. Ownership of Licenses and Certificates

42. **Surprisingly, 14.6% of nurses and 13.3% of physicians reported that they did not have a license or a certificate.** ***For MOHSW: Which of these key cadres need a license, which need a certificate? What steps are in place to enforce the ownership of licenses or certificates? Why would so many (esp. physicians) not have either? ****.

Commented [W7]: For MOH: see comment in text

Table 17: Ownership of Certificates and Licenses by Cadre

Cadre Grouping	Certificate				License						Total
	No. With certificate	%	No. not stated	%	No. With license	%	No. not stated	%	No. neither certificate nor license	%	
Physician	12	13.3%	2	2.2%	71	78.9%	2	2.2%	12	13.3%	90
Nurse	350	25.1%	57	4.1%	948	68.1%	60	4.3%	204	14.6%	1393
Certified Midwife	126	30.6%	12	2.9%	294	71.4%	13	3.2%	37	9.0%	412
Physician Assistant	66	23.1%	11	3.8%	225	78.7%	13	4.5%	23	8.0%	286
Total	554	25.4%	82	3.8%	1538	70.5%	88	4.0%	276	12.7%	2181

3.3.8. Transport situation

43. **Ownership of modes of transport is reported to be very low (Table 17).** Only 11.5% of all HWs reported that they own a car, motorbike and/or bicycle.

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Table 18: Ownership of transportation

	Yes (No.)	%	No (No.)	%	Total
Bike	109	1.2%	8659	98.8%	8768
Motorbike	367	4.2%	8401	95.8%	8768
Car	544	6.2%	8224	93.8%	8768
Own at least one of the above	1004	11.5%	7764	88.5%	8768

44. **Availability of public transportation to work varies widely by county of current duty station (Table 18).** For example, in Grand Gedeh, 82.2% of HWs stated that they had public transport available to them, while in Grand Kru, with a similar HW population, only 7.7% stated they had public transport available to them. The counties where a low proportion of HWs reported having public transport available are: Gbarpolu, Grand Cape Mount, Grand Kru and River Cess.

45. **Of those HWs who do not own any mode of transport (bicycle, motorbike or car), 60.9% have access to public transport, however, with large variation by county.** In Grand Gedeh, 84.1% of those without their own modes of transport have public transport available to them, compared to only 6.1% in Grand Kru, 3.8% in Grand Cape Mount, or 2.7% in Gbarpolu.

Table 19: Availability of public transportation for HWs by county

	Public Transport available			Public transport available for those who do not own any form of transport		
County	Yes (No.)	%	Total	Yes No.)	%	Total
Bomi	163	52.4%	311	108	44.1%	245
Bong	268	43.0%	623	229	40.5%	566
Gbarpolu	6	3.7%	163	4	2.7%	149
Grand Bassa	320	71.6%	447	300	71.8%	418
Grand Cape Mount	13	4.3%	303	10	3.8%	264
Grand Gedeh	250	82.2%	304	207	84.1%	246
Grand Kru	18	7.7%	233	14	6.1%	228
Lofa	369	42.5%	869	322	41.2%	781
Margibi	258	50.2%	514	201	45.1%	446
Maryland	285	78.1%	365	265	77.3%	343
Montserrado	2607	93.9%	2776	2248	93.9%	2393
Nimba	485	57.1%	850	395	52.7%	749
River Cess	17	8.2%	207	11	5.8%	189
River Gee	140	68.3%	205	128	69.6%	184
Sinoe	184	46.6%	395	172	45.4%	379
Total	5383	62.8%	8565	4614	60.9%	7580

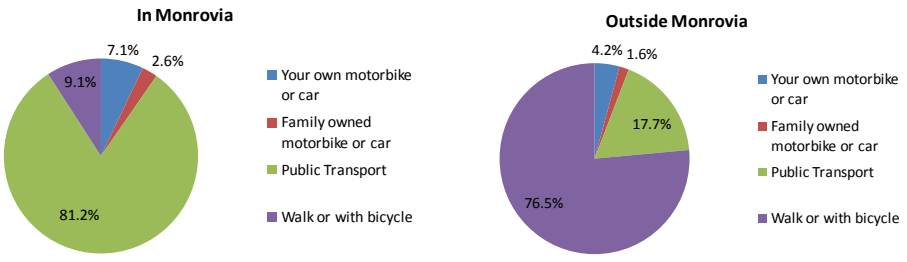
46. **The majority of HWs report that they walk or use a bicycle to get to work, with the exception of HWs in Montserrado (Table 19).** In all counties, except for Montserrado, the majority of HWs stated that their main mode of transport to work was by foot or bicycle. This is not surprising since the majority of HWs in Montserrado are located in Monrovia, where public transport is more readily available. On

the other hand, many rural HWs might live closer to where they work so they can walk. As Figure 8 shows, 17.7% of all HWs outside the capital stated they take public transport and 76.5% of them stated that they walk or use a bicycle. Meanwhile, in Monrovia, 81.2% of HWs stated that they use public transport to go to work and only 9.1% walk or use a bicycle.

Table 20: HWs Mode of transportation to work by county

	Your own motorbike or car		Family owned motorbike or car		Public Transport		Walk or with bicycle		
County	No.	%	No.	%	No.	%	No.	%	Total
Bomi	6	1.9%	3	1.0%	3	1.0%	299	96.1%	311
Bong	18	2.9%	4	0.6%	159	25.5%	442	70.9%	623
Gbarpolu	6	3.7%	1	0.6%	1	0.6%	155	95.1%	163
Grand Bassa	19	4.3%	1	0.2%	128	28.6%	299	66.9%	447
Grand Cape Mount	5	1.7%	1	0.3%	5	1.7%	292	96.4%	303
Grand Gedeh	13	4.3%		0.0%	46	15.1%	245	80.6%	304
Grand Kru	2	0.9%		0.0%	10	4.3%	221	94.8%	233
Lofa	42	4.8%	6	0.7%	84	9.7%	737	84.8%	869
Margibi	7	1.4%	61	11.9%	142	27.6%	304	59.1%	514
Maryland	16	4.4%	1	0.3%	85	23.3%	263	72.1%	365
Montserrado	190	6.9%	71	2.6%	2189	79.0%	320	11.6%	2770
Nimba	75	8.8%	15	1.8%	226	26.6%	534	62.8%	850
River Cess	13	6.4%		0.0%	6	2.9%	185	90.7%	204
River Gee	15	7.3%		0.0%	35	17.1%	155	75.6%	205
Sinoe	7	1.8%		0.0%	42	10.6%	346	87.6%	395
Total	434	5.1%	164	1.9%	3161	36.9%	4797	56.1%	8556

Figure 9: Main mode of transportation to work within and outside Monrovia



3.3.9. Housing conditions

47. **There is a lot of disparity between the counties in terms of the conditions on the housing in which HWs live.** Table 20 ranks all the counties according to the percentage of HWs with residences constructed with "adequate" types of floor, walls and roof materials combined[16] (see annex F for full details of floor, walls and roof types). In Montserrado 95.5% of HWs have cement, wood or tile floors, 66.3% have cement block, clay or brick walls, and 98.0% have zinc, asbestos, cement or tile roofs. In contrast, only 35.9% of HWs in Grand Kru have these types of floors, 6.4% have these types of walls and 39.7% have these types of roofs.

Table 21: Percentage of HWs with "adequate" floors, walls and roofs per county (in order of rank)

	Cement, wood or tile floor		Cement Block or Clay Brick wall		Zinc, asbestos, cement or tile roof		
County	No.	%	No.	%	No.	%	Total
Montserrado	2776	95.5%	1929	66.3%	2850	98.0%	2908
Bong	503	80.1%	368	58.6%	595	94.7%	628
Margibi	470	87.4%	254	47.2%	506	94.1%	538
Grand Bassa	351	77.0%	151	33.1%	409	89.7%	456
Grand Cape Mount	242	78.8%	105	34.2%	264	86.0%	307
Bomi	233	74.7%	106	34.0%	263	84.3%	312
Maryland	270	73.8%	104	28.4%	291	79.5%	366
Nimba	591	69.0%	120	14.0%	816	95.2%	857
Gbarpolu	104	62.3%	31	18.6%	106	63.5%	167
Lofa	366	42.2%	67	7.7%	700	80.6%	868
Grand Gedeh	141	46.4%	48	15.8%	149	49.0%	304
Sinoe	155	38.7%	60	15.0%	211	52.6%	401
River Cess	89	43.0%	17	8.2%	111	53.6%	207
River Gee	80	38.8%	6	2.9%	88	42.7%	206
Grand Kru	84	35.9%	15	6.4%	93	39.7%	234
Total	6455	73.7%	3381	38.6%	7452	85.1%	8759

The counties are in order of the highest percentage of HWs with optimal floor, walls and roofs combined.
Other types of floor included: mud or other
Other types of walls included: mud and Bricks; mud and sticks; reed, bamboo, grass or mat; wood or board; zinc or iron.
Other types of roof included: bamboo, leaves or thatch; tarpaulin; others.

48. **Whereas HWs in Montserrado reportedly have better *types* of housing than in other counties, in terms of the *condition* of the housing, HWs reported better conditions in Lofa and Gbarpolu than in Montserrado (Table 21). In Montserrado,** 28.5% of HWs reported minor or major damage to their homes compared to 16.4% in Lofa and 19.8% in Gbarpolu. Lofa also has the highest proportion of HWs who reported that their residence was newly built (58.2%), significantly more than Montserrado (19.1%). Grand Cape Mount has the highest proportion of HWs who reported minor or major damage to their residences (58.0%), followed by River Cess (55.6%) and Grand Bassa (54.2%).

[16] The census included a number of questions on the condition and makeup of the residences of HWs. Residences vary according to various types of roofs, walls and floors. Generally, the more durable the material is, the more preferred it is as a building material (i.e. concrete or cement walls and zinc roofs are more preferable than houses with mud and stick walls and bamboo/mat roofs).

Table 22: Condition of HW residence by county

	Newly built		Renovated		Intact		Minor damage		Major damage		
County	No.	%	No.	%	No.	%	No.	%	No.	%	Total
Bomi	73	23.4%	89	28.5%	73	23.4%	60	19.2%	17	5.4%	312
Bong	131	20.9%	171	27.2%	73	11.6%	172	27.4%	81	12.9%	628
Gbarpolu	61	36.5%	29	17.4%	44	26.3%	19	11.4%	14	8.4%	167
Grand Bassa	45	9.9%	27	5.9%	137	30.0%	179	39.3%	68	14.9%	456
Grand Cape Mount	35	11.4%	35	11.4%	59	19.2%	129	42.0%	49	16.0%	307
Grand Gedeh	96	31.7%	60	19.8%	35	11.6%	72	23.8%	40	13.2%	303
Grand Kru	19	8.1%	18	7.6%	95	40.3%	80	33.9%	24	10.2%	236
Lofa	505	58.2%	128	14.7%	93	10.7%	102	11.8%	40	4.6%	868
Margibi	97	18.0%	55	10.2%	181	33.6%	158	29.4%	47	8.7%	538
Maryland	60	16.4%	25	6.8%	174	47.5%	95	26.0%	12	3.3%	366
Montserrado	556	19.1%	275	9.5%	1247	42.9%	636	21.9%	191	6.6%	2905
Nimba	194	22.7%	88	10.3%	207	24.3%	247	29.0%	117	13.7%	853
River Cess	46	22.2%	9	4.3%	37	17.9%	82	39.6%	33	15.9%	207
River Gee	47	22.8%	10	4.9%	85	41.3%	55	26.7%	9	4.4%	206
Sinoe	82	20.4%	40	10.0%	105	26.2%	64	16.0%	110	27.4%	401
Total	2047	23.4%	1059	12.1%	2645	30.2%	2150	24.6%	852	9.7%	8753

49. **HWs in Bomi and Gbarpolu reportedly live closer to school facilities than in other counties (Table 22).** HWs were asked the distance from their residence to the nearest school where they would send their children[17]. A total of 91.3% of HWs in Bomi and 91.0% of HWs in Gbarpolu reported that the nearest school is 1km or less from their residence. HWs in Montserrado generally live a bit further from schools where they would send their children, with 57.1% reporting that they live 1km or less from the nearest school and 14.4% around 5km. In Grand Gedeh, 28.7% of HWs, the highest percentage out of the counties, live 4km-5km from the nearest primary school.

[17] The question stipulates where they would send their children, not just the nearest school. In some cases, perhaps more prevently in Monrovia and other urban areas, HWs might send their children to private schools and not necessarily to the nearest school.

Table 23: Distance[18] of nearest primary school from HW residence

	<1km		1km		2km		3km		4km		5km		
County	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	Total
Bomi	160	51.3%	125	40.1%	19	6.1%	5	1.6%		0.0%	3	1.0%	312
Bong	153	24.4%	157	25.1%	155	24.8%	64	10.2%	60	9.6%	37	5.9%	626
Gbarpolu	116	69.5%	36	21.6%	5	3.0%		0.0%		0.0%	10	6.0%	167
Grand Bassa	150	32.9%	85	18.6%	60	13.2%	57	12.5%	22	4.8%	82	18.0%	456
Grand Cape Mount	122	39.9%	106	34.6%	27	8.8%	10	3.3%	34	11.1%	7	2.3%	306
Grand Gedeh	85	28.1%	50	16.5%	38	12.5%	43	14.2%	24	7.9%	63	20.8%	303
Grand Kru	27	11.5%	124	52.8%	18	7.7%	16	6.8%	3	1.3%	47	20.0%	235
Lofa	126	14.5%	285	32.8%	165	19.0%	101	11.6%	30	3.5%	162	18.6%	869
Margibi	128	23.8%	124	23.1%	87	16.2%	74	13.8%	40	7.4%	84	15.6%	537
Maryland	75	20.5%	97	26.6%	75	20.5%	51	14.0%	14	3.8%	53	14.5%	365
Montserrado	791	27.2%	867	29.9%	409	14.1%	320	11.0%	98	3.4%	419	14.4%	2904
Nimba	189	22.2%	254	29.8%	208	24.4%	88	10.3%	51	6.0%	61	7.2%	851
River Cess	67	32.2%	42	20.2%	23	11.1%	30	14.4%	7	3.4%	39	18.8%	208
River Gee	43	20.9%	45	21.8%	43	20.9%	40	19.4%	4	1.9%	31	15.0%	206
Sinoe	77	19.2%	115	28.7%	64	16.0%	70	17.5%	29	7.2%	46	11.5%	401
Total	2309	26.4%	2512	28.7%	1396	16.0%	969	11.1%	416	4.8%	1144	13.1%	8746
Results exclude where the distance to the nearest school was N/A (see footnote and Annex C.5)													

3.4. Summary of Main Findings

50. **The results of the census indicate a shortage of key cadres.** There ratio of nurses, certified midwives, physicians and surgeons per 1000 population (0.55) is below the WHO recommended number (2.5) needed to ensure 80% coverage of deliveries by skilled health care professionals, indicating an acute shortage of qualified HWs in these cadres.

51. **Nimba, Maryland, Grand Kru and Gbarpolu Counties fared lowest in terms of the staffing of nurses, physicians, surgeons and, in particular, certified midwives.** Grand Kru, Nimba, Grand Gedeh and Gbarpolu fared the lowest in terms of nurses, certified midwives, physicians and surgeons per 1000 population. Surprisingly, the clinical HW to population ratio is not highest in the capital, but in Bomi county.

52. **The population shift from the countryside into Monrovia that has taken place over the years is also reflected in the fact that most HWs are concentrated in Monrovia.** Only 6.8% of HWs stationed in Montserrado County, where Monrovia is located, were born in that county.

[18] Distances are both reported and calculated as part of the data cleaning process done before analysis. Any answer given higher than 5km was interpreted as time it takes to reach the school (minutes) and converted into distance by assuming a travel speed of 5kmper hour. See annex C.5 for more details.

53. **The majority of HWs (60.9%) are aged 40 or older.** The largest age group of HW is those between the ages 40-49, who have on average 6.6 years of work experience. **Overall, 30.9% of all HWs reported only having 2 years or less of work experience.** The age distribution of certified midwives roughly follows the same pattern of HWs in general, while there is a higher concentration of nurses between the ages 25-35 than midwives or HW in general.

54. **Overall, the average income of HWs stationed within Monrovia is higher than those stationed outside the capital, with the notable exception of certified midwives.** While GOL employs almost half of the HWs in Monrovia, only 12.6% of contract employees are based in the capital**.** This difference has an effect on the comparative average salaries of GOL and contract employees. The average income of GOL employees (USD 179.7) is higher than contract employees (USD 147.3) overall, even though within the capital, contract employees have a significantly higher average income compared to GOL employees (USD 290.8 compared to USD 206.1).

55. **Ownership of transport by HWs is very low overall and the availability of public transport differs greatly by counties**. Overall, 88.5% of HWs do not have their own mode of transport (car, motorbike or bicycle). Furthermore, while public transport is available to 62.8% of HWs, it is only available to 8.2% or less in Grand Kru, Gbarpolu, River Cess and Grand Cape Mount. Outside Monrovia, most (76.5%) HWs walk or use a bicycle to get to work, whereas, within Monrovia, 81.2% use public transport.

56. **The adequacy of housing types of HWs is the least favorable in Grand Kru, River Gee, Sinoe and River Cess, while the reported conditions of the housing is least favorable in Grand Cape Mount, River Cess and Grand Bassa.**

Annexes

Annex A: The census design

This section describes how the census was designed, including the design of the census instrument (questionnaire), the HW code numbering system and how data was collected and entered into a database. This section shall also describe how the data collection teams were trained.

A.1: The questionnaire

The census questionnaire was designed to capture all the data required by the MOHSW while at the same time being as user-friendly as possible. The sampling unit was an individual health worker, meaning a set of data resulting from a HW's response would be attached to one HW record in the database. A list of questions was drawn up by the MOHSW and put into a questionnaire form. Whenever a question referred to a limited set of answers (e.g. gender, cadres, etc.) a list and tick-boxes were used instead of letting the enumerator write down the response. This was done to decrease the amount of errors that could be made in the data collection and data entry processes. This also made the questionnaire easier to use.

The questionnaire was tested during a two-day pilot. A small team from the MOHSW visited health facilities (all three types but not pharmacies) in Monrovia and in Todi, a rural area in Monteserrado County. During the pilot a handheld PDA device was tested as a possible replacement for the traditional paper questionnaire. The advantage of using PDAs is that there is no need for data entry after the interview is complete since all the data is electronically stored.

The results of the pilot were positive, overall, but did expose some issues with the questionnaire and the use of PDAs. Some questions did prove more difficult to answer; specifically, the questions related to dates (e.g. the exact date to the day of the start of employment, the date of graduation and the date HWs received their diploma). The pilot study showed that, overall, the paper questionnaire was less problematic for the enumerators to use and less distracting for the interviewers and respondents. As a result, the PDAs were slower and more difficult to use than the paper questionnaires. They also caused a communication barrier between the enumerator and the respondent which led to HWs not being as responsive during the interview process. The pilot study, unfortunately, did not reveal any issues with regard to the education levels, which did pose a problem during the actual data collection.

A number of changes were made to the questionnaire based on the result of the pilot. The pilot showed that many HWs had dropped out of high school for a number of reasons, including school disruption due to the civil war. Therefore, the option of "high-school drop-out" was included in the list of education levels. The cadre of graduated nurse was also added to the questionnaire as a result of the pilot. Because HWs found it difficult to remember the exact day they were employed, graduated or received their diplomas, the question was changed to include only the month and year.

Figure 10: The census questionnaire

Name Data Collector:_____Date_____

Questionnaire number: _____

1. Facility / pharmacy Name:		2. Facility / Pharmacy ID:CODIFA	CO	DI	FA

**** Code is base on the facility, followed by a two digit number: 0302001-01***

8. HW ID Number**	9. First/Other Name(s)	10. Surname
CO DI FA HW	_____	_____

11. Gender	12. Position	13. Department / Programme
[ ] Male [ ] Female		

14. Cadre (select one)

[ ] 01: Physician [ ] 02: Physician Assistant [ ] 03: Surgeon [ ] 04: Registered Nurse [ ]05:Graduated Nurse [ ] 06: Nurse Anesthetist [ ] 07: Nurse Midwife [ ] 08: Nurse Aide [ ] 09: Scrub Nurse [ ] 10: LPN (licensed practical nurse) [ ] 11: Health Inspector [ ] 12: Registrar [ ]13: Pharmacist [ ] 14: Dispenser [ ] 15:Certified Midwife [ ] 16: Lab Tech.	[ ] 17: X-Ray Technician [ ] 18: Traditional Midwife [ ] 19: Trained Traditional Midwife [ ] 20:Dentist [ ] 21: Dental Surgeon [ ] 22: Lab Aide / Assistant [ ] 23: Surveillance Officer [ ] 24: Social Worker [ ] 25: Physiotherapist [ ] 26: Field Worker [ ] 27: Accountant [ ] 28: Security [ ] 29: Cleaner [ ] 30: Environmental Health Technician [ ] 31: Non-Clinical Professional [ ] 32: Don't know

15. Date of Employment (MM /YY)	16. Employment status (select one)
	[ ] 01: GOL Employee [ ] 02: Volunteer [ ] 03: Contract Employee [ ] 04: Intern [ ] 05: Private for profit employee [ ] 06: Self-employed [ ] 07: Other: (Please Specify)
17. Hours Work Per Week	

		_____
18. Monthly Income (US Dollars)		**19. Date of Birth (MM/DD/YY)**
	[ ] $ US	
	[ ] $ LD	

20. Nationality (if Liberian, ask Q21. If not go to Q.22)	**21. County of Origin (if Q20. = Liberian)**	
	[ ] 03: Bomi **[ ] 06: Bong** **[ ] 09:Grand Bassa** **[ ] 12: Grand Cape Mount** **[ ] 15: Grand Gedeh** **[ ] 18: Grand Kru** **[ ] 21: Lofa**	**[ ] 24: Margibi** **[ ] 27: Maryland** **[ ] 30: Montserrado** **[ ] 33: Nimba** **[ ] 36: River Cess** **[ ] 39: Sinoe** **[ ] 42: River Gee** **[ ] 45: Gbarpolu**

22. Do you have a [p]:	**22.b License number**	**23. Date Issued (MM /YY)**
[ ] Certificate **[ ] License**		

24. Highest level of completed education <u>relevant to your current position</u> (this may possibly not be your highest level attained in general)	
[ ] 01: None **[ ] 02: Vocational training (if none other)** **[ ] 03: High School drop-out** **[ ] 04: High School Diploma** **[ ] 05: AA** **[ ] 06: College Diploma**	**[ ] 07: BSc/BA** **[ ] 08: MSc/MA/MBA (or 'masters')** **[ ] 09: MD** **[ ] 10: PhD** **[ ] 11: Other: (please specify)** **_____**
25. Date Diploma / Certificate issued? (MM/DD/YY)	

26. Do you own a bicycle, motorbike or a car?	**27. Is public transport to your work available where you live?**	**28. What is your main mode of transportation when you have to travel for your work?**

[ ] 01: Bicycle [ ] 02: Motorbike [ ] 03: Car [ ] 04: None	[ ] Yes [ ] No	[ ] 01: Your own motorbike or car [ ] 02: Family owned motorbike or car [ ] 03: Public Transport [ ] 04: Walk or with bicycle

29. What type of building do you live in?			30. Please indicate the condition of the building
29a: Outer Walls	29b: Roof	29c: Floor	[ ] 01: Newly built [ ] 02: Renovated [ ] 03: Intact repair [ ] 04: Minor damage [ ] 05: Major damage
[ ] 1. Stone, concrete [ ] 2. Cement Blocks [ ] 3. Clay bricks [ ] 4. Zinc or iron [ ] 5. Wood or board [ ] 6. Mud and bricks [ ] 7. Mud and stick [ ] 8. reed, bamboo, grass or mat. [ ] 10. Others	[ ] 1: Concrete [ ] 2: Tiles [ ] 3: Asbestos [ ] 4: Zinc [ ] 5: Tarpaulin [ ] 7: Bamboo, Leaves or Thatch [ ] 8: Others	[ ] 01: Cement [ ] 02: Tiles [ ] 03: Wood [ ] 04: Mud [ ] 05: Others	31. how far from where you live is the nearest elementary school where you would send your children (km)

A.2: The HW code

In order to index every record of HW data, a HW code was introduced. This code was created by combining already existing codes established by LISGIS for counties and districts, and then adding an additional facility suffix and a HW suffix. The county code and district code are both a series of two-digit numbers; one number exists for each county and district. The facility suffix is a three-digit number; one number exists for each facility per district. The HW suffix is also a three-digit number; one number for each HW.

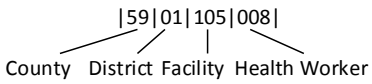
The facility suffix denotes facility type by a series of numbers allocated for each type. For example, all health centers were numbered 100 to 199, starting at 100 in each district.

Numbers were allocated for facilities as follows:

- Hospitals: 001-010

- Health centers: 100-199
- Clinics: 200-599
- Pharmacies: 600-999

Together, the county code, district code and facility suffix formed the facility code. In order to ensure no two facilities were given the same code, the code was entered on the questionnaire before it went into the field. When the enumerator visited the facility, he or she would add the HW suffix at the end of the facility code, starting at 001, thus producing the entire HW code as shown below.



A.3: Training of enumerators

As this was a large study, the Liberia Institute of Statistics and Geo-information Services (LISGIS) was recruited to carry out the census. Rather than recruit all the teams from Monrovia, local teams of enumerators from each county were recruited. A total of 93 enumerators, 21 supervisors and 11 monitors were brought to Monrovia to receive training on the census. All the data collectors were briefed on the purpose of the study, instructed on the terminology of each section of the questionnaire, given step-by-step instructions on the procedures necessary to follow upon arriving at each facility (including informing all those involved of the study and its purpose), procedures to follow during the interview, and the management of the questionnaire once completed. ** for LISGIS to add: The educational background and experience of the enumerators, of the supervisors and of the monitors. Were all the enumerators, (supervisors and monitors) involved in the national population census of 2008 or just some?**

Commented [W8]: For LISGIS to add, see comment

In addition to interview techniques, enumerators were instructed to pay close attention to a respondent's answers and were taught to identify incompatible answers. For example, if a respondent gave a particular answer that would conflict with an answer given later (e.g. stating they are a registered nurse, but high school is their highest level of education), or an answer that was not available as an option (e.g. an education level not listed) the enumerator was instructed to probe to make sure the correct answers were given. In such cases, the enumerator was instructed to explain clearly the question and the answers available so that the respondent could give the accurate answer. Unfortunately, the data resulting from the census shows that the education levels included in the questionnaire were not extensive enough (see Annex II) and that the enumerators were not fully instructed or properly trained to elicit accurate data from the respondent in many cases. In cases of HWs who received a 2-year training course, the "AA" option should have been stated by the respondent if the question and options

were properly explained to them, however, many of these questionnaires have "high-school" as the education level.

A.4: The structure of data collection during facility visits

All HWs were interviewed individually at the facility where they worked. The enumerators sat down with each health worker to conduct a brief interview. None of the HWs' information was collected by a third party (i.e. a director or supervisor speaking on behalf of a colleague). ** For LISGIS to add: In the pilot each interview lasted 5-8 minutes. What was roughly the average duration of the interviews during the actual census?**

Commented [W9]: For LISGIS to add, see comment

Since the census required every HW to be interviewed, facilities were told in advance of the exact time and date of the visit by data collectors. The MOHSW, through county HR directors, contacted all the facilities to ensure that all HWs stationed there would be present during the time of the visit. In addition, announcements were aired on United Nations Mission in Liberia's radio, which broadcasts in English and local languages. Ideally, visits to facilities would have happened in the afternoon when HWs are less busy. However, since there was a tight deadline, visits were made throughout the day in order to cover all facilities. ** For MOH/LISGIS to add: once a county team had set out which facilities to visit when, how were the facilities informed of the time/date of visit. Did LISGIS or the MOH contact each facility?**

Commented [W10]: For LISGIS / MOH to add, see comment

The duty rosters and sign-in books of the facilities were used to check that the HWs interviewed were stationed at the facility and to note absentee HWs. Because there would have been some HWs absent during the census, an absentee form was provided for the enumerators. If a HW was not present, then the enumerators would confirm with the officer in charge that the person worked at the facility and cross-check with the duty roster and sign-in in books to verify the HW was indeed stationed at the facility. The HWs name would be noted down on an absentee form. While his or her information could not be included in the census database, this measure increases the accuracy of the total count of HWs.

A.4: Data entry

The data entry was conducted by LISGIS at their headquarters in Monrovia. After the questionnaires were completed, they were collected from the enumerators by the supervisors who ensured all questionnaires were completed and all facilities covered per county before sending the questionnaires to the LISGIS headquarters. LISGIS recruited and trained six data entry clerks to enter the census data. A supervisor was recruited to build a data input interface using CSPro and to supervise the data entry team. In order to save time, data entry started while data collection was still ongoing. ** For LISGIS to add: what were the educational / experience background of the data entry team?**

Commented [W11]: For LISGIS to add, see comment

Annex B: Limitations of the census-- challenges to the adequacy and accuracy of the data

This section highlights aspects of the census where the adequacy and accuracy of the data was affected. In this section, adequacy refers to the extent to which the scope of the census was large enough (i.e. the right questions asked) and whether all the data was collected (i.e. all facilities covered and all HWs interviewed). In this section, accuracy refers to the level to which all the data was correctly recorded without errors.

B.1: Adequacy issues

Not all facilities were covered in the census. At the start of the census, the MOHSW identified the number of facilities and dispensaries in each county and informed the data collection teams of their presence. However, 132 clinics, 9 health centers and 2 hospitals were not visited by the data collection teams. In addition, no pharmacies or dispensaries were visited in Lofa, Grand Kru, Margibi, Maryland, or Gbarpolu. **For LISGIS/MOH to add: Why were no pharmacies covered in these counties when they were known to exist? Why also were the other facilities not covered? It is important to establish where the problem lay for future reference, was it a communication issue between MOH and LISGIS? Were the teams not properly notified? Was there not enough supervision to pick up on these problems during the census? Please be as detailed as possible**

Commented [W12]: For LISGIS / MOH to add, see comment

Absenteeism rates could not be calculated from the census data. As was mentioned earlier, in order for every HW to be counted, all staff were ordered by their superiors to be present at the facilities during the census visit. This means that the number of HWs present at facilities was higher than what would be normally expected. Any measure of the level of absenteeism of HWs would thus have been completely inaccurate. It was the decision of the MOHSW not to seek to attain absenteeism rates in this census.

No information was asked on whether the HW has any children or other dependents. This was something which came up later as a useful indicator for the design of a qualitative survey of HWs. The MOHSW is actively trying to assure that enough HWs are stationed in areas where living standards are more difficult and to prevent HWs from clustering in more popular areas like Monrovia. As part of efforts, the Ministry is considering various incentives for HWs. Knowing whether a worker has children is important since having children influences where a HW would want to be stationed. A question about the number of children a HW has could have informed the design of a qualitative survey of HWs which the MOHSW is currently implementing.

No information was asked on how far HW live from their place of work. This question would have been of use for the Ministry if it were considering transportation incentives. The data would have provided additional insight to the data gathered by the census on transportation to work.

B.2: Accuracy issues

Ambiguity with regard to education levels of HWs

There was an overall uncertainty about how to classify the education levels of some HWs, particularly nursing cadres, leading to incorrect classification. In order to become a registered nurse in Liberia, one

has to complete high school and follow a 2-year course in nursing, followed by a board exam and, in some cases, an internship. This constitutes an AA-level (Associate degree) certificate course. In the questionnaire, an option for "AA" as an education level was included. However many HWs would not call their course an "AA course", but rather a "nursing certificate course", or "vocational training", or something else. In other cases, HWs might not consider these courses when describing their education level and state "high-school". While one would expect the vast majority of registered nurses to have "AA" as their level of education, according to the census data, this is not the case, as many have "high-school", "other" or "vocational training".

The problem with the education levels of HWs was due to both a design flaw in the census questionnaire and a lack of proper instruction and support for enumerators. The design of the census questionnaire did not include a specific nursing certificate course or midwifery course as an option for education level since the level "AA" was meant to encompass these specific courses. Since many HWs themselves did not use the term "AA", the inclusion of more options for education levels could have reduced the errors made.

The errors in education levels could also have been avoided if the enumerators were given more detailed instructions in questioning the HW during the interviews. The data collection teams were given a three-day training where they were informed about what education levels each cadre should have and were instructed to look out for incompatible responses from HWs (i.e. a registered nurse with only a high-school level education). However, the enumerators were not sufficiently instructed in how to probe and get accurate answers in these cases. The enumerator, in seeing that the answer given by a HW does not sound correct, should have given clear definitions of what each education level meant, specifically that "AA" encompasses the typical two-year certificate course which many HWs take after high school. This would have let the HW give a more informed and thus accurate answer.

**For LISGIS to add: Please provide details on where the training was lacking: were enumerators not properly instructed on all possible conflicts of answers? Especially:

Education levels: were enumerators properly instructed on what answers were incompatible (i.e. minimum education levels for all cadres?) Were they properly trained to probe and find out the correct education level, even if the answer given by a HW was not listed in the census form?

Income: were enumerators properly instructed on what the "normal" salary level for each cadre should be? A lot of HW reported no income, were enumerators instructed to probe and ask whether this was because a) they were a volunteer b) they had not received their salary in a long time, or any other reason?

Distance to school: Were enumerators properly instructed to get the answer in KM NOT in time it took to get there?

Commented [W13]: LISGIS, please add, see comment in text

The lack of a codebook for enumerators in the field

Enumerators were not provided with a codebook in the field. As the problem with HW education demonstrates, there were some uncertainties in some of the terminology used in the questionnaire. This is very common, not only in Liberia, but wherever a study of this kind is conducted. A codebook could have provided the enumerators with clear definitions for the terminology used in the questionnaire for the benefit of both the enumerator and the respondent. It could have also provided the enumerator with clear instructions on probing and a "cheat-sheet" highlighting which types of answers are incompatible (e.g. nurse with only high-school education or less, or a HW who states he or she has no public transport available but then states they take public transport to work).

Incorrect classification of facilities

As a result of a lack of communication between the data collection teams, their supervisors, and the MOHSW, certain facilities were wrongly categorized in terms of facility type. In Liberia, facilities are classified as clinics, health centers, hospitals, pharmacies and MOHSW offices, depending on the services they provide.[19] As shown in Annex I, the health facility code also refers to the facility type. The raw data resulting from the census included some facilities that had not been correctly coded (i.e. a clinic given a health center code). These errors could have occurred at the MOHSW level where the sheets were coded or in the field in the instances where the questionnaire was photocopied in the field and the data collection team allocated facility codes rather than at the MOHSW. While the MOHSW received numerous calls from teams to assist them in the coding, a lack of effective communication meant that at times the coding was incorrectly noted. The original coding of facilities before enumerators went into the field was based on MOHSW records of facilities and thus these records were used to clean the data and re-code the facilities according to the correct type.

Lack of a HW marking system

Health workers who had been interviewed were not marked to prevent the same HW being interviewed twice. As part of the design of the census, HWs who had been interviewed by the enumerators were supposed to be marked on their fingers with a long-lasting blue ink. If the HW was encountered again by an enumerator after he or she had been interviewed at possibly a different facility, their HW number should have been noted as present at the facility but their details would not have been taken again and they would not have been counted as another HW in the system. During the data collection process, the ink was not sufficient quantities of ink were not provided for the enumerators and therefore the technique was not used.

Weaknesses in supervision of the data collection and data entry process

[19] See Annex **** for details on service delivery of each type

** For LISGIS / MOH to add: Even though supervisors and monitors were recruited for the census, were they effective in supervising the data collection? The problems with certain aspects of the data suggests there were weaknesses in the supervision, resulting in errors in the data and missing records (i.e. questions not answered or not clearly noted) and missing facilities. Please explain as clearly as possible all the issues surrounding supervision and the following questions (for all questions, were there certain counties or districts where there were more problems than others):
Were all the questionnaires properly checked by the supervisor on the field and if a questionnaire had problems, was the enumerator asked to go back and ensure all answers were correctly recorded?
Did the supervisors perform regular spot-checks by re-interviewing HW's or "sitting in" in interviews and checking the enumerator's questionnaire?
If an enumerator was not sure how to perform a certain task, could he or she easily ask for help from a supervisor?
Did the monitors provide effective support for the teams? Was there clear communication to ensure all facilities were covered?
How was data entry supervised? Did the supervisor perform spot-checks?
Was double entry used?**

For LISGIS to add: Please provide other possible reasons why the errors occurred.

For LISGIS to add: How did LISGIS separate the "not answered" from the "0" value in the data entry of the census, particularly in the years experience, hours work per week (0 is a possibility?) and the monthly income questions. The CSpro dictionary suggests that if a value was higher than "0" is was counted as a value, but all "0" answers was seen as "no answer". Does this mean that if a question was not answered a "0" value was put in during data entry? Was there no option for "not answered"?

For MOH to add: a description of all minimum services provided per facility type (clinics, health centers, hospitals, etc.)

Commented [W14]: LISGIS / MOH: please add see text

Annex C: Data Cleaning

This section highlights the data cleaning process and provides an overview of the number of records affected.

C.1 HW code duplication

The original raw data from the census had a high incidence of duplication of HW codes. Out of 8,687 records included in the data set, 1,839 of the HW codes were not unique but were duplicated at least once, and in some cases multiple times. Since the HW code is meant to be unique and used to calculate indicators, the duplication of 27% of the codes meant that, unless these errors are cleaned, any resulting data would not have been very accurate. Table 23 shows the number of instances of duplication and how many times the code was duplicated.

Table 24: Instances of HW code duplication

copies of HW code	Observations / instances of duplication	surplus of HW codes (number of "extra" codes)
1	6,848	-
2	836	418
3	459	366
4	240	180
5	145	116
6	12	10
7	35	30
8	8	7
9	9	8
10	10	9
26	26	25
59	59	58

The majority of the duplications of HW codes were caused by the incorrect coding of facilities – i.e. duplication of facility codes. Since each facility could contain a number of HWs who would each be given a suffix starting from 001, if the facility codes are duplicated and the same HW suffixes are used, the complete HW codes of the people in those facilities will also be duplicated. For example, say facility A within county 05 and district 02 and with the facility suffix 025 has 5 HWs. The HW codes will run from 05-02-025-001 to 05-02-025-005. If facility B also with 5 HWs, within the same county and district is given the *same* facility suffix 025. Then the HW codes will also run from 05-02-025-001 to 05-02-025-005, causing the duplication of 5 codes.

As explained in Annex I, each questionnaire was meant to be pre-coded at the MOHSW with the respective facility code before entering the field. During the data collection, however, there were some instances where the questionnaires had to be photocopied in the field which could have resulted in the duplication of codes. Another possible explanation for the duplication is a data entry error.

All instances of duplication were corrected. Using identifiers such as HW name, location and cadre, all instances of duplication of HW codes were corrected. Hence, the issue of duplication has not affected the level of accuracy of the data.

C.2 Age

Some of the stated ages of the HWs were unrealistic and therefore the data on age levels had to be cleaned. The census asked HWs their data of birth in order to create a picture of the age make-up of the health workforce. A number of records had ages that were very unlikely. In the cleaning process, an age limitation was set from 15 to 80. All the outliers (18 records) outside this age bracket had their age changed to N/A.

C.3 Years Experience

There were cases in the data on experience levels where the stated number of years of experience did not match with the age of HWs. The census asked HWs what year they started working as a HW in order to gauge their level of experience. In some cases, the years of experience stated would have meant that the health worker was too young to have started working. After subtracting the years of experience of the HWs form their age and setting the cap at 15 years old, 57 records of HWs had their experience level set to N/A.

C.4 Reported Income

In cases where the reported income of a HW was unrealistically high or low, the data was cleaned. The census asked HWs what their total income was therefore would have included their standard salary plus incentive packages or any other income. In some cases, low-level cadres reported a very high income. In other cases, HWs who were not volunteers or interns reported no income at all. All records where the income of nurse aides, cooks, cleaners, and registrars totaled more than 2,000 LD a month and two cases of HWs reporting a monthly income of more than 7,000 LD per month were changed to N/A. In addition, in a number of cases where HWs who were not volunteers or interns but reported no income, the records were changed to N/A.

C.5 Distance to school

In many instances, the time it took to get to the nearest school was noted down instead of the actual distance, leading to many records having to be cleaned. A limit of 5km was established since most settlements, even in remote areas, would be situated no more than 5km from the nearest school. In the cases where the response was greater than 5km, the record was interpreted as the time it took to walk to the nearest school. Using an average walking speed of 5km per hour, these records were converted into a distance in km. The cases where the calculated time was more than 5km were changed to N/A. A large number of records (3,289) were affected by this cleaning process.

C.6 Hours worked per week

A number of records contained an abnormally high number of hours worked per week. A cut-off point of 85 hours per week (12 hours per day, seven days of the week) was decided upon. Any record of 85 hours per week or more was changed to N/A. This cleaning process affected 216 records.

C.7 Education Levels

As mentioned in Annex II, there was some ambiguity with regards to education levels. There were a number of instances where HWs had an education level that was too low for their stated cadre and also a number of instances where their reported level was too high.

C.7 Cadres

In addition to their cadre, HWs were asked what position they had at the facility. For example, a registered nurse might have as their position officer in charge. In some instances, the stated cadre was not compatible with the stated position. For example, a certified midwife with security guard as their position. In most of these cases, the education level of the HW also did not match the cadre. In cases where the position did not match, the cadre was changed to N/A. A total of 83 records were affected by this cleaning process.

C.8 Data cleaning overview

Variable	Cleaning process	Number of records affected	Percent of all records affected
Facility ID	Duplications of the same facility ID number in the same district removed by adding a new number.	64	10.6%
	Cases where the facility code depicted an incorrect type of facility (i.e. clinic, health center, hospital or pharmacy) were changed in consultation with MOHSW records.		
HW ID	Duplications of the same HW ID number in the same facility were corrected.	229	2.6%
Age	All records with a HW age higher than 80 and lower than 15 were altered to N/A.	18	0.2%
Years experience	All records where the difference between the years experience and the age of HW meant that the HW was younger than 15 when they started as a HW were altered to N/A.	57	0.7%
Income	Records where low-level HWs (i.e. nurse aides, cooks, registrars and cleaners) had an income of more than 2,000 LD and a case where a lab technician had in income of 10,642 LD and where a "property control officer" had an income of 7,151 LD were all altered to N/A.	8	2.6%
	Records where HWs who were not volunteers or interns but reported 0 income were changed to N/A.	224	
Distance to school	Records where HWs stated a distance of more than 5km were altered. Those records above 5km were interpreted as reporting the time it took to walk to the school. The distance was recalculated according to an average walking speed of 5km/hour. The records where this calculation resulted in a distance of more than 5km were altered to N/A.	3,289	37.5%
Hours worked per week	A cut-off point of 85 hours per week was taken (12 hours per day, 7 days a week). Anything higher was labeled as N/A in the results.	216	2.5%
Education	All records where nurse aides, lab aides, and security personnel had an education of BA/Bsc or higher were altered to N/A.	27	0.3%
Cadre	All cases where cadres conflicted with positions were altered to N/A (e.g. cases where a physician had security guard listed as his as position).	93	1.1%

Annex D: HW education levels

This section focuses on the problems surrounding the data on HW education.

A large proportion of HWs reported having an education level that was too low for their stated cadre, however, this is most likely due to the ambiguity of the terminology used in the questionnaire to describe education levels. As Table 24 shows, a number of key cadres reported education levels that were too low for their stated cadre. For example, 58% of LPNs reported having only a high school education and a small number (four in total) reported having never completed high school. The minimum requirement to be an LPN is to be a high school graduate and to have completed a two-year nursing certificate course, which is equivalent to an AA-level education. Similarly, 43% of certified midwives who should also have an AA-level education reported high school or lower as their education level. ** For MOH to add: do we have a standard definition for all education levels as what they mean in Liberia. Specifically AA-level education is not so clear. We nee to make clear whether the AA-level education encompasses fully the minimum levels needed for the relevant cadres.**

Commented [W15]: MOH: Please add, see comment in text

Table 25: Education levels of HWs

Cadre	None	High School drop-out	High School Diploma	AA	College Diploma	BSc/BA	MSc/MA/MBA(or Masters)	MD	PhD	Vocational training	Others	N/A	Total	Number of HW with too low education	% of HW with too low education
Nurse Aide	30	180	933	17	15					208	184	22	1589	0	0%
Registered Nurse	4	4	133	169	118	235	7			74	80	0	824	141	17%
Graduated Nurse	1		20	25	14	51	2			7	9	0	129	21	16%
LPN(Licensed Practical Nurse)	3	2	144	13	9	9	2			44	29	0	255	149	58%
Scrub Nurse		4	40	2	7	1				4	6	0	64	0	0%
Nurse Anesthetist		1	21	5	7	7		1		9	4	0	55	22	40%
Nurse Midwife	3	1	22	5	7	8	1			6	13	0	66	26	39%
Traditional Midwife	30	5	6							3	6	0	50	0	0%
Trained Traditional Midwife	77	33	24							32	26	1	193	77	40%
Certified Midwife	8	4	166	24	58	1				59	92	0	412	178	43%
Physician Assistant	4		70	22	87	20	1			29	53	0	286	74	26%
Physician			4		1	1	5	51	1		4	0	67	11	16%
Surgeon			2	1		1	1	16	1		1	0	23	5	22%
Lab Aide/Assistant	4	20	154	9	3					33	14	2	239	4	2%
Lab Technician		2	53	18	18	12	1			18	15	0	137	55	40%
X-Ray Technician			16	1	1						4	0	22	16	73%
Dentist	1		8	1			2				3	0	15	12	80%
Dental Surgeon			1		2			2			3	0	8	3	38%
Environmental Health Technician	2	6	42	10	9	7	1	1		20	20	1	119	2	2%
Dispenser	7	60	316	9	4	8				70	31	0	505	7	1%
Pharmacist		1	13		3	15	1			4	9	0	46	14	30%
Physiotherapist			4		1	1						0	6	4	67%
Registrar	7	66	305	6	3	6				28	35	1	457	7	2%
Accountant			15	11	4	40	5			2	11	0	88	8	9%
Field Worker	8	40	44	3	3	2	1			11	15	0	127	0	0%
Health Inspector		2	20	3	1	6				9	13	0	54	0	0%
Surveillance		3	20	1						2	2	0	28	0	0%
Social Worker	6	12	82	14	5	23	3	1		16	20	0	182	114	63%
Security	131	164	127	2	2					9	76	4	515	0	0%
Cleaner	318	208	92	1						6	77	5	707	0	0%
Non-Clinical Professional	158	232	410	51	28	144	16		1	95	140	10	1285	0	0%
Don't Know	16	24	43	13	2	8	1			3	19	3	132	0	0%
N/A	16	13	31	4	4	1				5	9	0	83	0	0%
Total	834	1087	3381	440	416	607	50	72	3	806	1023	49	8768	950	11%

Because of the high volume of outliers and the uncertainty surrounding education definitions, altering the cadres stated would not increase the accuracy of the indicators. Often when analyzing census data, the education level of HWs can be used to verify whether the stated cadre of HW is in fact correct. In the case of this census, the high volume of those with too low an education and the uncertainty surrounding definitions has meant that the stated cadres were not altered. Table 25 demonstrates what the number of HWs per cadre would be if the cadre variable would have been changed according to education levels. All the records where education levels were too low were changed to N/A. For some key cadres, notably licensed practical nursess and certified midwives, only 42% and 57%, respectively, of the original stock remains after the cleaning process. If the records were changed, the number of HWs with their cadre not available (N/A) would increase more than twelve-fold.

Table 26: Records changed if data cleaned according to reported education levels

Cadre Grouping	Total	Corrected total	as % of original total
Nurse Aide	1,653	1,653	100%
LPN(Licensed Practical Nurse)	255	106	42%
Registered Nurse / Bsc Graduated Nurse	1,074	864	80%
Physician Assistant	286	212	74%
Physician	67	56	84%
Surgeon	24	18	75%
Certified Midwife	412	234	57%
Dentist	15	3	20%
Dentist surgeon	8	5	63%
Environmental Health Technician	173	171	99%
Lab worker / technician	398	339	85%
Pharmacist	551	530	96%
Social Worker	182	82	45%
Other Clinical Health Workers	249	168	67%
Non-Clinical Health Workers	3,207	3,160	99%
Don't Know / Not Answered	132	132	100%
Not Available	82	1035	1262%
Total	8,768	8768	100%

Annex E: Notes on data analysis

In order to analyze some of the data resulting from the census, a number of conversions and variable groupings had to be carried out. For example, the date of birth of HWs was asked rather than their age since a HW could have had their birthday during the time of the census. Instances where conversions were made are described below.

E.1 Income

Both the US dollar (USD) and the Liberian dollar (LD) are valid forms of currency in Liberia and therefore the space for reporting total income included boxes for USD income and a box for LD income. A large number of HWs receive income in both USD and LD so the option of both was included. A conversion rate of 71LD for 1 USD was used to convert LD into USD. An example is shown below:

ID 163	Gender:	Income (USD)	Income (LD)
	Male	125.00	6,510.00

In the instance above, a HW has an income of 125 USD plus an additional 6,510 in LD.

The combined income is calculated by dividing the LD by 71 and adding the USD income

6510 (LD) / 71 (conversion rate) = 61.69 (USD)	61.96 (LD income) + 125.00 (USD income) = 216.96 total income

E.2 Department

The department under which a HW works is dependent on their cadre. All clinical staff at facilities work under the Department of Health Services, all non-clinical staff work under the Department of Planning, the Department of Administration and, in the case of social workers, the Department of Social Welfare. Since the questionnaire did not ask which department a HW was employed by but rather which department or program within the facility they worked (i.e. maintenance, nursing, ICU), the table on department is based on the cadre only. For this reason, the cases where the cadre is unknown, the department is also not known. Table 26 shows how the cadres were grouped.

Table 27: Allocation of cadres per department

Department	Cadre
Department of Administration	Accountant Dispenser Health Inspector
Department of Health Services	Certified Midwife Cleaner Dental Surgeon Dentist Environmental Health Technician Graduated Nurse Lab Aide/Assistant Lab Technician LPN(Licensed Practical Nurse) Nurse Aide Nurse Anesthetist Nurse Midwife Pharmacist Physician Physician Assistant Physiotherapist Registered Nurse Scrub Nurse Security Surgeon Traditional Midwife Trained Traditional Midwife X-Ray Technician
Department of Planning	Field Worker Registrar Surveillance
Department of Social Welfare	Social Worker
Don't know/ not stated	Don't Know N/A Non-Clinical Professional

Two thirds (66%) of the HWs who are GOL employees, on contract, interns or volunteers work within the Department of Health Services. The department in which a HW works is based on their role in the facility and these figures have been extrapolated based on a HW's cadre (see Annex V). In the cases where the particular cadre of a HW was not known, the department for which they work is therefore also not known.

Within facilities, the Department of Health Services employs the highest proportion of women. In this department, 44% are women, a little higher than the Department of Social Welfare (39%). In contrast, the Department of Planning employs a very low proportion of women at 14%.

Table 28: Distribution of HW according to department by gender

Total and proportion of HW in each department*			Gender breakdown of each department			
Department	Total	%	Male	%	Female	%
Department of Administration	473	7%	346	73%	127	27%
Department of Health Services	4369	66%	2461	56%	1908	44%
Department of Planning	496	7%	425	86%	71	14%
Department of Social Welfare	157	2%	96	61%	61	39%
Don't know/not stated	1145	17%	841	73%	304	27%
Total	6640	100%	4169	63%	2471	37%

E.3 Age of HW

The age of the HW was calculated by subtracting the year of birth from the year in which the census took place. For example, a HW that was born in 1968 was calculated to be 41 (2009 - 1968= 41).

Annex F: Lessons learnt and recommendations for future HW census initiatives

This section will provide an overview of the lessons learnt from the proceedings of the census and give recommendations for future HW censuses.

More input from county health teams and from local (non-Monrovia based) data collection teams will be needed to ensure that the methodology and the timeframe set out is feasible. The HW census involved the cooperation of various teams within the MOHSW, at the various facilities, and with LISGIS. The design phase of any similar census in Liberia should involve all the actors involved. Their combined input, based on experiences from this census, will help make any future endeavor more compatible with the difficult realities on the ground.

Liaison with non-ministry facilities (particularly JFK and some of the larger private facilities) would foster better cooperation during the census and inform the census teams of foreseeable problems. Although independent facilities like JFK were very cooperative, in some cases it took far longer for the census teams to be able to interview the HWs since channels of communication between the MOHSW and the private facilities are not as robust as with MOHSW facilities, meaning at times the right people had not been fully informed of the census. Making them part of the process would ensure a more effective way of working together.

Training of the data collection teams needs to ensure that every enumerator is very familiar with the purpose of the census and the meaning of each type of answer a HW could give. This is particularly important in Liberia as respondents might not always be aware of the different terminologies used and thus at times will have to be informed by the enumerators so that they are fully aware of the answers they are giving.

All persons involved in the census should be provided with a codebook. The codebook should: include details of the terminology used in the census questionnaire, specifically the definitions of each variable option (cadres, education levels, etc.); provide clear instructions on probing and steps to follow when there are doubts about answers given; provide a full list of codes for each county, district and facility; and provide a complete list of all facilities to be covered and the facility types.

The timeframe of the data collection process has to be feasible and flexible. The main reason for this is not only the difficulty and time it takes to get to certain facilities, but the fact that conditions can change very rapidly. For example, a good dirt road can become virtually impossible to navigate within a short amount of time due to heavy rainfall.

When piloting a future census, those developing the census should keep in mind the specific problems encountered in previous censuses. For example, if respondents or enumerators have problems with a particular question, this could be due to the design, and perhaps the question is not clear enough or the responses available are not extensive enough.

In order to prevent the duplication of HW codes, a more robust coding system should be developed. Coding according to county, district and facility remains a useful system but there are ways to improve its effectiveness. One way to do this is to allocate a health facility code, based on this census, for every facility and inform all facility heads (including heads of pharmacies) of their code. In a future census or survey, when a team of data collectors visits the facility, the health facility code should be confirmed by the facility head. If there are any discrepancies, then the central MOHSW should be contacted before any interviews with HWs take place. The HW suffix should then be added. Before leaving the facility, the data collection team should confirm that no duplications occurred with regard to the HW suffix. The emphasis here is on the health facility code since most of the duplications which occurred in this census were due to duplications of facility codes.

The coordination of supervisors and monitors has to be well managed to ensure that data is properly collected and that the data collection teams have enough support. In such a large and difficult study, a number of challenges are bound to arise. When a facility becomes hard to reach or a data collection team has run out of questionnaires, close communication and effective coordination are crucial in preventing these challenges from threatening the quality of the study. This is particularly difficult in Liberia where there are no telephone landlines and there is often a lack of mobile phone coverage in rural areas.

1. **After only a small portion of the data has been collected, an initial data set (one district, for example) should be delivered to the MOHSW in order for it to identify problems and then inform the**

census teams. Following this process will help in identifying problems early on so that steps can be taken to minimize further mistakes. For example, if it becomes clear that facilities are not being correctly coded, all teams could be given clearer instructions on correct coding procedures.

Annex G: HW data tables

G.1 HW to population ratios

Table 29: HW per 1000 population (detailed)

Cadre	Bomi	Bong	Gbarpolu	Grand Bassa	Grand Cape Mount	Grand Gedeh	Grand Kru	Lofa	Margibi	Maryland	Montserrado	Nimba	River Cess	River Gee	Sinoe	Total
Physician	0.01	0.01	0.01	0.02	0.01	0.02	0.02	0.03	0.02	0.04	0.04	0.01	0.01	0.00	0.01	0.03
Nurse	0.63	0.37	0.32	0.40	0.39	0.32	0.21	0.43	0.43	0.35	0.46	0.26	0.55	0.39	0.42	0.40
Certified Midwife	0.27	0.13	0.12	0.08	0.11	0.07	0.12	0.13	0.17	0.08	0.14	0.06	0.11	0.13	0.08	0.12
Nurse Aide	0.81	0.28	0.43	0.36	0.34	0.40	0.86	0.86	0.58	0.42	0.42	0.31	0.39	0.58	0.63	0.46
Physician Assistant	0.08	0.03	0.05	0.05	0.07	0.08	0.07	0.07	0.05	0.13	0.11	0.07	0.11	0.16	0.06	0.08
Traditional Midwife	0.00	0.01	0.12	0.06	0.03	0.07	0.29	0.21	0.01	0.07	0.02	0.09	0.18	0.13	0.34	0.07
Dentist	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.01
Environmental Health Technician	0.07	0.01	0.08	0.06	0.02	0.05	0.09	0.02	0.03	0.09	0.07	0.02	0.10	0.09	0.11	0.05
Lab technician / assistant	0.14	0.07	0.07	0.08	0.06	0.10	0.12	0.12	0.15	0.07	0.11	0.14	0.03	0.12	0.16	0.11
X-Ray Technician	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.01
Pharmacist	0.02	0.01	0.01	0.01	0.02	0.02	0.00	0.02	0.01	0.00	0.02	0.00	0.00	0.00	0.02	0.01
Other Health Cadres	0.24	0.18	0.11	0.13	0.31	0.22	0.22	0.19	0.15	0.23	0.19	0.17	0.28	0.39	0.39	0.20
Non-Clinical Health Workers	1.37	0.73	0.66	0.78	0.92	0.92	1.86	1.00	0.81	1.18	0.94	0.69	1.12	0.96	1.61	0.92
Total	3.65	1.85	1.99	2.03	2.27	2.28	3.87	3.10	2.43	2.66	2.55	1.82	2.88	2.96	3.82	2.46
Clinical HW per 1000 population	2.28	1.12	1.33	1.25	1.35	1.36	2.00	2.09	1.62	1.48	1.61	1.13	1.76	2.01	2.21	1.54
Physicians, Nurses and Certified Midwives per 1000 population	0.92	0.52	0.46	0.51	0.50	0.41	0.35	0.60	0.62	0.48	0.64	0.33	0.67	0.52	0.51	0.55

HWs.

G.2 Nationality

Table 30: Nationality of HWs

Nationality	Total	%
Central African	4	0.05%
East African	1	0.01%
Ghanaian	9	0.11%
Guinean	13	0.15%
Indian	6	0.07%
Ivoirien	5	0.06%
Liberian	8428	99.32%
Nigerian	9	0.11%
North African	1	0.01%
North American (USA/Canada)	1	0.01%
Other Asian	1	0.01%
Sierra Leonean	6	0.07%
Southern African	1	0.01%
Togolese	1	0.01%
Total	8486	

G.3 Wall types of HW residences

Table 31: Type of Wall of HW residences

county	Cement Blocks	Clay Bricks	Stone, Concrete	Wood or Board	Zinc or Iron	Mud & Bricks	Mud and Stick	Reed, Bamboo, Grass or Mat	Others	Total
Bomi	29.5%	4.5%	0.6%	0.0%	1.3%	18.9%	44.9%	0.3%	0.0%	312
Bong	22.1%	36.5%	1.6%	0.8%	0.0%	17.2%	21.8%	0.0%	0.0%	628
Gbarpolu	3.0%	15.6%	0.0%	0.0%	0.0%	19.2%	62.3%	0.0%	0.0%	167
Grand Bassa	30.7%	2.4%	13.4%	1.5%	7.2%	11.6%	28.5%	3.9%	0.7%	456
Grand Cape Mount	20.8%	13.4%	6.8%	0.7%	3.6%	25.1%	28.7%	0.3%	0.7%	307
Grand Gedeh	9.9%	5.9%	1.3%	0.7%	0.0%	4.3%	77.0%	0.3%	0.7%	304
Grand Kru	6.0%	0.4%	0.0%	0.0%	0.4%	2.1%	90.2%	0.9%	0.0%	234
Lofa	6.7%	1.0%	0.7%	0.1%	0.2%	53.8%	36.6%	0.2%	0.6%	868
Margibi	20.4%	26.8%	6.9%	0.0%	3.0%	25.3%	14.1%	2.6%	0.9%	538
Maryland	25.7%	2.7%	0.5%	0.8%	2.7%	4.6%	59.3%	3.6%	0.0%	366
Montserrado	61.9%	4.5%	8.7%	0.4%	7.5%	10.9%	3.4%	2.6%	0.1%	2908
Nimba	8.9%	5.1%	6.5%	0.7%	0.1%	63.7%	14.0%	0.9%	0.0%	857
River Cess	8.2%	0.0%	2.4%	0.5%	4.3%	16.4%	60.9%	5.8%	1.4%	207
River Gee	2.9%	0.0%	0.5%	0.5%	0.5%	2.4%	91.7%	1.0%	0.5%	206
Sinoe	13.2%	1.7%	4.0%	0.5%	3.5%	5.2%	71.1%	0.7%	0.0%	401
Total	30.8%	7.8%	5.4%	0.5%	3.6%	21.6%	28.3%	1.7%	0.3%	8759

G.4 Roof type of HW residences by county

Table 32: Type of roof of HW residences

County	Asbestos	Concrete	Titles	Zinc	Tarpaulin	Bamboo, Leaves or Thatch	Others	Total
Bomi	13.8%	0.6%	0.0%	69.9%	1.3%	14.4%	0.0%	312
Bong	2.4%	0.2%	0.2%	92.0%	1.3%	3.8%	0.2%	628
Gbarpolu	0.0%	0.0%	0.0%	63.5%	0.0%	36.5%	0.0%	167
Grand Bassa	2.9%	0.9%	2.6%	83.3%	1.3%	8.8%	0.2%	456
Grand Cape Mount	2.0%	2.3%	0.0%	81.8%	1.0%	12.7%	0.3%	307
Grand Gedeh	1.0%	0.3%	0.0%	47.7%	0.0%	51.0%	0.0%	304
Grand Kru	1.7%	0.9%	0.0%	37.2%	0.0%	60.3%	0.0%	234
Lofa	1.3%	0.1%	2.0%	77.3%	6.7%	12.3%	0.3%	868
Margibi	15.1%	0.6%	0.7%	77.7%	1.7%	3.2%	1.1%	538
Maryland	3.6%	1.4%	0.0%	74.6%	0.0%	20.5%	0.0%	366
Montserrado	3.6%	1.4%	0.9%	92.1%	1.4%	0.4%	0.2%	2908
Nimba	0.5%	0.1%	0.2%	94.4%	1.4%	3.4%	0.0%	857
River Cess	0.0%	1.0%	0.0%	52.7%	0.5%	39.1%	6.8%	207
River Gee	0.0%	0.5%	0.0%	42.2%	0.5%	56.8%	0.0%	206
Sinoe	1.5%	0.2%	0.2%	50.6%	0.2%	47.1%	0.0%	401
Total	3.5%	0.8%	0.7%	80.1%	1.6%	12.9%	0.4%	8759

G.5 Floor type in HW residence by county

Table 33: Types of floors of HW residences

County	Cement	Tiles	Wood	Mud	Others	Total
Bomi	72.1%	2.6%	0.0%	25.0%	0.3%	312
Bong	70.1%	9.9%	0.2%	19.9%	0.0%	628
Gbarpolu	59.9%	2.4%	0.0%	37.7%	0.0%	167
Grand Bassa	64.0%	11.0%	2.0%	23.0%	0.0%	456
Grand Cape Mount	73.3%	2.6%	2.9%	20.5%	0.7%	307
Grand Gedeh	43.8%	2.6%	0.0%	52.6%	1.0%	304
Grand Kru	35.5%	0.0%	0.4%	64.1%	0.0%	234
Lofa	39.9%	2.1%	0.2%	57.7%	0.1%	868
Margibi	65.2%	21.6%	0.6%	11.5%	1.1%	538
Maryland	68.6%	3.8%	1.4%	26.0%	0.3%	366
Montserrado	75.7%	19.4%	0.4%	4.3%	0.3%	2908
Nimba	63.4%	5.3%	0.4%	30.8%	0.2%	857
River Cess	42.0%	0.5%	0.5%	48.8%	8.2%	207
River Gee	37.9%	0.5%	0.5%	61.2%	0.0%	206
Sinoe	35.7%	2.2%	0.7%	61.1%	0.2%	401
Total	62.8%	10.4%	0.6%	25.8%	0.5%	8759

G.6 Number of HWs in all facilities by county

Table 34: HWs per facility by gender

County	Facility Type	Facility Name	Male	Female	Total
Bomi	Clinic	AHMADIYYA MUSLIM CLINIC	2		2
		BEAFINE COMMUNITY CLINC	3	2	5
		BEN TOWN COMMUNITY CLINIC	4	2	6
		BONJEH TOWN CLINIC	2	1	3
		DAGWEH COMMUNITY CLINIC	4	1	5
		DORTHY COMMUNITY CLINIC	1		1
		FEFEH TOWN COMMUNITY CLIN	6	1	7
		GAYAH HILL CLINIC	3	2	5
		GBAH COMMUNITY CLINIC	1	2	3
		GOGHEN CLINIC	2	4	6
		GONJEH CLINIC		1	1
		GONZIPO COMMUNITY CLINIC	7	4	11
		GUTHRIE CLINIC	32	17	49
		JENNEH #3 CLINIC	5	3	8
		MALEMA CLINIC	5	3	8
		MECCA COMMUNITY CLINIC	6	1	7
		SACKIE TOWN COMMUNITY CLINIC	4	2	6
		SASS TOWN CLINIC	7	4	11
		ST.LUKE CLINIC	5	3	8
		SUEHN CLINIC	4	4	8
		VORTOR COMMUNITY CLINIC	3	2	5
		WEAWOLO COMMUNITY CLINIC	4	2	6
		YOMO TOWN CLINIC	4	1	5
		ZORDEE COMMUNITY CLINIC	5		5
	Clinic Total		119	62	181
	Hospital	LIBEIRIA GOVT. HOSPITAL	69	59	128
	Hospital Total		69	59	128
	Pharmacy / Dispensary				
		CFM DRUG STORE	1		1
		MY FAVORITE MEDICINE STOR	1		1
		ST.JOHNSON MEDICINE STORE	1		1
	Pharmacy / Dispensary Total		3		3
Bomi Total			191	121	312
Bong	Clinic	AFBM CLINIC	11	4	15
		BAH-TA CLINIC	6	1	7
		BELEFANAI CLINIC	8	2	10
		BELLEMU CLINIC	1	2	3
		BOTOLA CLINIC	5	1	6
		DETERMININER MEDICAL CLIN	2	1	3
		FENUTOLI HEALTH CLINIC	8	2	10
		FOEQUELLEH CLINIC	2	1	3
		GAARMU CLINIC	4	2	6
		GBALATUAH CLINIC	4	3	7
		GBANSU SULONMA	5	1	6
		GBARTALA CLINIC	3	3	6

		GBECOHN CLINIC	8	6	14
		GBONOTA CLINIC	4	1	5
		HANDII COMMUNITY CLINIC	4	1	5
		JANYEA CLINIC	7	1	8
		JORWAH CLINIC	6		6
		KPAAI CLINIC	4	1	5
		LAM CLINIC	6	2	8
		MILLIONAIRE COMM.CLINIC	1		1
		NAAMA CLINIC	3	1	4
		PALALA CLINIC	6	3	9
		SAMAY CLINIC	5	2	7
		SANOYEA CLINIC	3	2	5
		SHANKPALAI CLINIC	6	1	7
		TOKPAIPOLU CLINIC	5	1	6
		TOTOTA CLINIC	6	5	11
		YILA COMMUNITY CLINIC	3	3	6
		ZEANZUE CLINIC	3	2	5
		ZEBAY CLINIC	6	2	8
		ZOMA MEDICAL CLINIC	2		2
		ZOWEINTA CLINIC	1	3	4
	Clinic Total		148	60	208
	Health Center	C.B. DUMBAR	13	10	23
		SALALA CLINIC	6	4	10
	Health Center Total		19	14	33
	Hospital	BONG MINE HOSPITAL	49	24	73
		PHEBE HOSPITAL	178	101	279
	Hospital Total		227	125	352
	Pharmacy / Dispensary				
		EMACY MEDICAL STORE	1		1
		FAITH MEDICINE STORE	1		1
		IN MEDICINE STORE	1		1
		OLU DRUGS STORE	1		1
		PEOPLE'S MEDINCESTORE	1		1
		PROGRESS MEDICINE STORE	1		1
		SANA MEDICINE STORE	23	4	27
		TRINITY MEDICINCE STORE	1		1
		WETLAND DRUG STORE	1		1
	Pharmacy / Dispensary Total		31	4	35
Bong Total			425	203	628
Gbarpolu	Clinic	BAMBUTA CLINIC	4	1	5
		FASSAMA BADE CLINIC	6	5	11
		GBANGAY CLINIC	5	6	11
		GBARMA CLINIC	7	5	12
		GBARYAMAH CLINIC	5	7	12
		GOKALA CLINIC	2	3	5
		HENRY TOWN CLINIC	5		5
		KPAYEAKWELLE CLINIC	6		6
		KUNGBOR CLINIC	3	3	6
		TARKPOIMA CLINIC	6	3	9

		TOTOQUELLEH CLINIC	4	2	6
		WEASUE CLINIC	3	2	5
	Clinic Total		56	37	93
	Hospital	CHIF JALLAHLONE HOSPITAL	43	31	74
	Hospital Total		43	31	74
Gbarpolu Total			99	68	167
Grand Bassa	Clinic	ACFI CLINIC	3	1	4
		BARSEEGIAH CLINIC	4		4
		BOBGLAY TOWN CLINIC	5		5
		BOKAY TOWN CLINIC	4	2	6
		BRE CLINIC	5		5
		BRENDA KINGS CLINIC	6	2	8
		CAMPHOR MISSION CLINIC	2	3	5
		CEEGBAH CLINIC	1		1
		CHRISTIAN EXTENSION	8	4	12
		CIVIL COMPOUND CLINIC #4	5	2	7
		CIVIL COMPUND CLINIC #2	5		5
		COMPOUND #3 CLINIC	10	4	14
		DESOE TOWN CLINIC	6	1	7
		EDINA CLINIC	4	1	5
		FAMILY PLANNING CLINIC		2	2
		FOSTER TOWN CLINIC	6		6
		GARDOUR CLINIC	6	1	7
		JACOB LATEH CLINIC	5	1	6
		JORIAM CLINIC	2	3	5
		LITTLE BASSA CLINIC	3	3	6
		LITTLE KOLA CLINIC	6	1	7
		LLOYDVILLE CLINIC	6	2	8
		NEW CESS CLINIC	1	1	2
		OWENSGROVE CLINIC	5	2	7
		RED CROSS	4	1	5
		SENYAH COMMUNITY CLINIC	5		5
		SOS CLINIC BASSA		1	1
		ST. JOHN CLINIC	6	2	8
		SUE TOWN CLINIC	2	2	4
		TUBMANVILLE CLINIC	5		5
		WELL BABY CLINIC	3	4	7
	Clinic Total		133	46	179
	Health Center	BACHT CLINIC	21	6	27
		CATHOLIC HEALTH CLINIC	8	6	14
	Health Center Total		29	12	41
	Hospital	ARCELORMITTAL HOSPITAL	17	3	20
		GOVERNMENT HOSPITAL	99	68	167
		LAC HOSPITAL	26	20	46
	Hospital Total		142	91	233
	Pharmacy / Dispensary	ALRAFI PHARMACY	1	1	2
		LUCY PHARCACY	1		1
	Pharmacy / Dispensary Total		2	1	3

Grand Bassa Total			306	150	456
Grand Cape Mount	Clinic	BAMBALLAH COMM.CLINIC	4		4
		BANGORMA COMM.CLINIC	2	2	4
		BENDAJA COMM.CLINIC	5	2	7
		BENDU CLINC	3	3	6
		BOMBOJA CLINIC	3	1	4
		BO-WATERSIDE CLINIC		4	4
		DAMBALLA COMM.CLINIC	6	4	10
		DIAH COMM.CLINIC	4	2	6
		FAHNJA CLINIC	4	2	6
		FANTI TOWN CLINIC	3	3	6
		GONDAMA CLINIC	3	1	4
		GONELOR COMM.CLINIC	5		5
		JENE WONDE CLINIC	3	2	5
		JUNDU CLINIC	2	1	3
		KANGA CLINIC	3	3	6
		KAWELAHUM COMM.CLINIC	3		3
		KPENEJE CLINIC	7	1	8
		KULANGOR CLINIC	4		4
		LOFA BRIDGE CLINIC	3	3	6
		MADINA CLINIC	3	3	6
		MAMBO CLINIC	6		6
		MANO RIVER KONGO CLINIC	3	2	5
		MBALOMA CLINIC	3		3
		SEBEHUM CLINIC	1	4	5
		ST. FRANCIS CLINIC CAPE MOUNT	1		1
		TAHN CLINIC	4		4
		TAHN-MAFA CLINIC	4		4
		TALLAH COMMUNITY CLINIC	5	1	6
		TIENI CLINIC	4	1	5
		VARGUAYE CLINIC	4	2	6
		ZAWAY CLINIC	3	2	5
	Clinic Total		108	49	157
	Health Center	CAVALLA HEALTH CENTER CAPE MOUNT	1	1	2
		SINJE HEALTH CENTER	27	14	41
	Health Center Total		28	15	43
	Hospital	ST TIMOTHY GOL HOSPITAL	71	30	101
	Hospital Total		71	30	101
	Pharmacy / Dispensary	BLEGHOUR MEDICINE STORE	1		1
		COLE MEDICINE STORE	1		1
		E.F P MEDICINE STORE	1		1
		FAMILY VISION MEDICINE ST	1		1
		GUY JHNNY MEDICINE STORE	1		1
		LOFA BRIDGE STORE	1		1
	Pharmacy / Dispensary Total		6		6
Grand Cape Mount Total			213	94	307
Grand Gedeh	Clinic	BEH TOWN CLINIC	5	1	6

		CHRIST THE KING CLINIC	1	2	3
		GBARZON JARWODEE CLINIC	5	1	6
		GBOLEKEN CLINIC	4	1	5
		GORBO WORGBA CLINIC	5	2	7
		JANZON CLINIC	6	1	7
		KARLORWLEH TOMN CLINIC	3	2	5
		KONOBO ZIAH TOWN CLINIC	8	2	10
		KUMAH TOWN CLINIC	5	2	7
		PENNOKON CLINIC	7	1	8
		POLAR CLINIC	7	1	8
		PUTU JARWODEE CLINIC	6		6
		TOE TOWN CLINIC	6	2	8
		TOFFIA TOWN CLINIC	5		5
		TUZAN CLINIC	4	1	5
		ZAI CLINIC	3	5	8
	Clinic Total		80	24	104
	Hospital	M.TUBMAN MEMORIAL HOSPITAL	123	69	192
	Hospital Total		123	69	192
	Pharmacy / Dispensary				
		GALAPO DRUG STORE	1		1
		J&R PHARMACY		1	1
		JAM PHARMACY	1		1
		NEW ZWEDRU MEDICINE STORE	1		1
		ORLANDO TARLUE PHARMACY	1		1
		SELF-HELP PHARMACY	1		1
		SIS GLORIA'SDRUG STORE	1		1
		ZWEDRU COMMUNITY MED STOR		1	1
	Pharmacy / Dispensary Total		6	2	8
Grand Gedeh Total			209	95	304
Grand Kru	Clinic	BUAH HEALTH CENTER		1	1
		GARRAWAY CLINIC	5	1	6
		GBALAPO CLINIC	9		9
		GBANKEN CLINIC	5	2	7
		GBLEEBO CLINIC	4	2	6
		GENOYAH CLINIC	5	1	6
		JUDUKEN CLINIC	5	2	7
		NEMIAH WILSON CLINIC	1		1
		NEWAKEN CLINIC GRAND KRU	7	1	8
		NIFFU CLINIC	6	1	7
		NYANKUNPO CLINIC	5	1	6
		PICNICCESS CLINIC	6	9	15
		SASSTOWN HEALTH CENTER	10	3	13
		WILSONVILLE CLINIC	4	1	5
	Clinic Total		72	25	97
	Health Center	BARCLAYVILLE HEALTH CENT.	29	7	36
		BEHWAN HEALTH CENTER	7	2	9
	Health Center Total		36	9	45
	Hospital	RALLY TIME HOSPITAL	48	46	94
	Hospital Total		48	46	94

Grand Kru Total			156	80	236
Lofa	Clinic	BALAGWALAZU CLINIC	5	2	7
		BARKEDU CLINIC	4	2	6
		BARZIWEN CLINIC	3	2	5
		BAZAGIZIA CLINIC	5	2	7
		BONDI CLINIC	7	2	9
		BORKEZA CLINIC	6	1	7
		DOGOMAI CLINIC	8	3	11
		FANGODA CLINIC	5	10	15
		FASSAVOLU COMMUNITY CLINI	5	3	8
		FISSEBU CLINIC	5	1	6
		FOYA HEALTH CENTER	64	40	104
		FOYA COMMUNITY CLINIC		1	1
		FOYA TENGIA CLINIC	5	2	7
		GANGLOTA CLINIC	4		4
		GBALAKPALASU CLINIC	5	2	7
		GBANWAY CLINIC	5	2	7
		GBONYEA CLINIC	4	2	6
		GORDONLAHUN CLINIC	9	1	10
		GORLU CLINIC	4		4
		KAINTAHUN CLINIC	5	1	6
		KAMATAHUN CLINIC	10	1	11
		KORWORHUN CLINIC	5	1	6
		KPADEMA CLINIC	6	2	8
		KPAIYEA CLINIC	6	1	7
		KPAKAMAI CLINIC	4	2	6
		KPOTOMAI CLINIC	5	4	9
		LAWALAZU CLINIC	6	1	7
		LEINGBAMBH CLINIC	6	2	8
		LUSAKU CLINIC	14	2	16
		LUYEAMA CLINIC	5	1	6
		NYANDEMOLAHUN CLINIC	7	1	8
		POPALAHUN CLINIC	7	2	9
		PORLUMA CLINIC	4	1	5
		SALAYEA CLINIC	5	3	8
		SARKONEDU CLINIC	5	2	7
		SHELLO CLINIC	4	1	5
		SORLUMBA CLINIC	7	1	8
		SUCROMU CLINIC	5	1	6
		V.F.P. CHURCH CLINIC	4	4	8
		VENALU CLINIC	6	3	9
		WARSONGA CLINIC	6		6
		YARKPUAH CLINIC	5		5
		YEALA CLINIC	5	1	6
		YEGBEDU CLINIC	8	1	9
		ZAWORDAMAI CLINIC	4	1	5
		ZENALORMAI CLINIC	5	3	8
		ZOLOWO CLINIC	4		4
	Clinic Total		316	121	437

	Health Center	BOLAHUN HEALTH CENTER	11	11	22
		KONIA HEALTH CENTER	7	2	9
		VAHUN HEALTH CENTER	14	9	23
	Health Center Total		32	22	54
	Hospital	CURRAN LUTHERAN HOSPITAL	58	29	87
		FOYA COMMUNITY HOSPITAL	6	3	9
		KOIKOI HOSPITAL	1		1
		KOLAHUN HOSIPTAL	55	22	77
		TELLEWOYAN MEMORIAL HOSPT	138	67	205
	Hospital Total		258	121	379
Lofa Total			606	264	870
Margibi	Clinic	BEYAN KESSELLEY CLINIC	8	6	14
		CAVALLA CLINIC MARGIBI		1	1
		CHARLESVILLE CLINIC	5	3	8
		CITY CLINIC	10	11	21
		CITY CLINIC ANNEX	5	1	6
		DIVISION28 HEALTH CENTER	6	2	8
		DR BARCOLLEH CLINIC	9	7	16
		FAMILY PLANNING CLINIC	2	6	8
		GBAYE-TA CLINIC	3	3	6
		KAKATA HEALTH CENTER	5	2	7
		KENDEI MEDICAL CLINIC	2	3	5
		LARKAY TA CLINIC	4	1	5
		MODERN MEDICAL CLINIC	7	3	10
		PETER'S TOWN CLINIC	5	1	6
		PIONEER FOR CHRIST CLINIC	4	4	8
		SAMUEL COOPER HEALTH CENT	6	1	7
		SARCO MEDICAL CLINIC	10	6	16
		SCHIEFFLIN CLINIC	5	2	7
		SRC FACTORY CLINIC	3	1	4
		TUCKER TA CLINIC	2	1	3
		UNCLE MS CLINIC	7	2	9
		VALLEY TA CLINIC	4		4
		WEALA COMMUNITY CLINIC	1	5	6
		WOLOLA CLINIC	5	1	6
		WORHN CLINIC	5	1	6
		YARWULLIE CLINIC	4	1	5
		YEAMAI CLINIC	5	1	6
		ZEEWORTH CLINIC	4	2	6
	Clinic Total		136	78	214
	Health Center	DOLO'S TOWN HEALTH CENTER	10	11	21
		HARBEL HEALTH CENTER	9	9	18
		LIBERIA HEALTH CARE CENTE	7	5	12
		MARSHALL HEALTH CENTER	9	4	13
		SRC HEALTH CENTER	9	2	11
		UNI TOWN HEALTH CENTER	7	11	18
	Health Center Total		51	42	93
	Hospital	C.H.RENNIE HOSPITAL	71	43	114
		HARBEL HOSPITAL FIRESTONE	62	55	117

	Hospital Total		133	98	231
Margibi Total			320	218	538
Maryland	Clinic	BARRAKEN CLINIC	3	2	5
		BONIKEN CLINIC	5	1	6
		CAVALLA CLINIC	3	2	5
		FISH TOWN CLINIC	4	2	6
		FLELOKEN CLINIC	4	1	5
		GBAWILIKEN CLINIC	5	2	7
		GLOFARKEN CLINIC	4	2	6
		JULUKEN CLINIC	5	1	6
		MANOLU CLINIC	5	1	6
		NEMEKEN/KUNOKUDI CLINIC	4		4
		NEWAKEN CLINIC	6		6
		OLD SODOKEN CLINIC	6	1	7
		POUGBAKEN CLINIC	4	3	7
		PULLA CLINIC	4	4	8
		ROCK TOWN CLINIC	5	1	6
		ROCK TOWN KUNOLUDI CLINIC	3	2	5
		SACRED HEART CLINIC	2	9	11
		ST.FRANCIS CLINIC	4	7	11
		YEDIAKEN CLINIC	4	2	6
	Clinic Total		80	43	123
	Health Center	CAVALLA HEALTH CENTER	11	9	20
		KARLOKEN HEALTH CENTER	6		6
		PLEEBO HEALTH CENTER	21	3	24
	Health Center Total		38	12	50
	Hospital	JJ DOSSEN HOSPITAL	118	75	193
	Hospital Total		118	75	193
Maryland Total			236	130	366
Montserrado	Clinic	ACFI MEDICAL CENTER	5	4	9
		ARTHINGTON CLINIC	3	3	6
		BANJOR COMMUNITY CLINIC	4	9	13
		BLAMACEE COMMUNITY CLINIC	1	3	4
		BROMLEY COMMUNITY CLINIC	2	3	5
		CAREYSBURG CLINIC	5	4	9
		CHOCLATE CITY CLINIC	3	4	7
		CLAYASLAND CLINIC		3	3
		CROZIERVILLE CLINIC	3	2	5
		DAOUDA CLINIC	2	2	4
		DAQMOW CLINIC LARKPAZEE	4	4	8
		DWEH/CENTRAL MATADI CLINI	3	5	8
		EJ GOODRIDGE CLINIC	5		5
		FAITH CLINIC	3	5	8
		FEW HEALTH SERVICE		1	1
		GARDNERSSVILLE CLINIC	7	9	16
		GBANSU SULONMA HEALTH CEN	1		1
		GERMAN CLINIC	6	11	17
		GOBAH TOWN CLINIC	3	1	4
		GREY STONE CLINIC	3	7	10

		HARRISBURG CLINIC	3	8	11
		HYDRO MERCI CLINIC	2	7	9
		IMANI HOUSE CLINIC	5	5	10
		JAMAICA ROAD CLINIC	9	16	25
		JOHNSONVILLE CLINIC	3	2	5
		KEBBEH MAT.AND LAB. CLINI		2	2
		KENEJA CLINIC	6	6	12
		KINGSVILLE CLINIC	3	2	5
		KOON TOWN CLINIC	2	2	4
		KPALLAH COMMUNITY CLINIC	7	4	11
		LOTTCAREY MISSION CLINIC		1	1
		LOUISIANA CLINIC	3		3
		MARIAMA BROWN CLINIC	1	3	4
		MARIAMA Z. BROWN CLINIC		2	2
		MAWA CLINIC	7	3	10
		MERCI CLINIC		3	3
		MONROVIA CENTRAL PRISON C	2	3	5
		MORRIS FARM CLINIC	4	7	11
		MOTHER AND CHILD CLINIC	6	5	11
		NEW COMMUNITY CLINIC	8	6	14
		PAPHE FAITH CLINIC	2	2	4
		PRES BY TERIAN CLINIC	1		1
		PROVIDENCE CLINIC	11	9	20
		PUCC COMMUNITY CLINIC	7	14	21
		RCD MARSHALL CLINIC	3	7	10
		RED CROSS CLINIC	6	5	11
		RICKS MISSION CLINIC		1	1
		SLIPWAY CLINIC	5	13	18
		SOINWEN COMM.CLINIC	11	23	34
		SOS CLINIC	27	22	49
		ST.JOSEPH CATHOLIC CLINIC	4	5	9
		THIRD ROCK CHINESE CLINIC	5	1	6
		WHITE PLAINS CLINIC	3	3	6
		WILLIAM BOOTH CLINIC	1	7	8
		ZANNAH TOWN CLINIC	3	1	4
Clinic Total			223	280	503
Health Center		BARBARA ANN HEALTH CENTER	11	9	20
		BARDNERSVILLE HEALTH CENT	7	16	23
		BENSONVILLE HEALTH CLINIC	14	9	23
		BISHOP COLLINS HEALTH CEN	7	6	13
		CLARA TOWN HEALTH CENTER	15	33	48
		DUPORT ROAD HEALTH CENTER	8	21	29
		NEW GEORGIA HEALTH CENTER	9	16	25
		NEW KRU TOWN CLINIC	32	44	76
		NYEHN HEALTH CENTER	7	4	11
		PIPELINE HEALTH CENTER	4	19	23
		SATP CLINIC	1		1
		SIS AGNES HEALTH CENTER	2	11	13
		ST. BENEDICT HEALTH CENTE	8	11	19

	STAR OF THE SEA HEALTH CENTER	18	19	37
Health Center Total		143	218	361
Hospital	BENSON HOSPITAL	77	90	167
	ELWA HOSPITTAL	62	59	121
	ISLAND HOSPITAL	51	58	109
	JOHN F KENNEDY HOSPITAL	302	267	569
	REDEMPTION HOSPITAL	112	130	242
	SDA COOPER HOSPITAL	45	35	80
	ST.JOSEPH CATHOLIC HOSPITAL	53	59	112
	TB ANNEX HOSPITAL	70	28	98
Hospital Total		772	726	1498
MOH Office	MOH CENTRAL	332	162	494
MOH Office Total		332	162	494
Pharmacy / Dispensary	A.A MEDICINE STORE	1		1
	AGE PHARMACY	1		1
	ANATAH PHARMACY BROAD ST.	1		1
	B&B MEDICINE STORE		1	1
	B-KAY PHARMACY BROAD ST	2		2
	CHARIF PHARMACY	1		1
	DESTINY MEDEICINE STORE	1		1
	DR.SALMAN PHARMACY	1		1
	F.B.K.MEDICINE STORE	1		1
	F.L.MEDICINE STORE	1		1
	GENTLE MEDICINE STORE	1		1
	GEORGE PHARMACY ASHM.ST	1		1
	GOD'S WILL PHARMACY	1		1
	GOLDEN VALLEY MEDICINE ST	1		1
	GOOD WILL PHARMACY R.ST	1		1
	H.E.MEDICINE STORE	1		1
	HOME PHARMACY	1		1
	INDO-LIBERIAN PHARMACY	1		1
	JACK ZU PHARMACY	1		1
	JOSCON MEDICINE STORE	1		1
	JUST PHARMACY	1		1
	KENNEH &SONS PHARMACY	1		1
	KONKPAMA PHARMACY	1		1
	KPANGISUA MEDICINE STORE	1		1
	LAST HOPE PHARMACY	1		1
	MALAG PHARMACY MECH.ST	1		1
	MAS PHARMACY	1		1
	MENSAH MEDICINE STORE	2		2
	MERCY MEDICINE STORE	1		1
	MIGHTY LAND MEDICINE STOR	1		1
	MIRACLE PHARMACY	1		1
	MJ MEDICINE STORE	1		1
	MODERN ASSACITE MEDICINE	1		1
	MOTHER'S PHARMACY BROAD S	1		1
	MY FAVORITTE MEDICINE ST.		1	1

		O.BLESSING MEDICINE STORE		1	1
		OBUKO SISTER MEDICINE STO	1		1
		POUTAL PHARMACY	1		1
		R&R MEDICINE STORE	2		2
		RAMI PHARMACY BROAD ST	1		1
		RITTER PHARMACY BROAD ST	1		1
		SHREE KRISHUA PHARMACY	1		1
		SUU PHARMACY RANDALL ST	1		1
		SWARAY PHARMACY	1		1
		SWARY PHARMACY FRONT ST	1		1
		TROPICAL PHARMACY ASHM.ST	1		1
		U-2MEDICINE STORE	1		1
		UNCLE TOM PHARMACY		1	1
		U-Z MEDICINE STORE	1		1
		VAYLAZU MEDICINE STORE	1		1
	Pharmacy / Dispensary Total		49	4	53
Montserrado Total			1519	1390	2909
Nimba	Clinic	AGAPE HEALTH CLINIC	4	2	6
		BAHN MISSION CLINIC	2	3	5
		BEADATUO CLINIC	3	2	5
		BEO YOOLAR CLINIC	6	1	7
		BONLAY CLINIC	5	3	8
		BUNADIN CLINIC	5	3	8
		BUUTUO INLAND CLINIC	7	1	8
		CLINIC FLUMPA COMM.	4	3	7
		CLINIC FLUMPAULIC	6	2	8
		CLINIC KARNWEE	5	2	7
		CONSOLATA CLINIC	6	4	10
		DIALLAH CLINIC	6	2	8
		DOU TIAYEE CLINIC	5	3	8
		DUO CLINIC	6	1	7
		DUOPLAY CLINIC	4	2	6
		DUOYEE CLINIC	6	2	8
		EQUIP COMMING CLINIC	1		1
		GANTA COMMUNITY CLINIC	6	3	9
		GARPLAY CLINIC	1	4	5
		GBEIVONWEA CLINIC	3	3	6
		GBLOULAY CLINIC	2		2
		GOAGORTUO CLINIC	7		7
		GRALE CLINIC	4	5	9
		KL FOUNDATION CLINIC	3	2	5
		KPAYTUO CLINIC	2	5	7
		KPEIN CLINIC	4	3	7
		KWEDIN CLINIC	5	2	7
		LEPULA CLINIC	5	3	8
		LIBCO COCOPA CLINIC	6	7	13
		LOGUATUO CLINIC	3	1	4
		LUGBEYEE CLINIC	6	1	7
		MEHNLA CLINIC	10		10

		MID BAPTIST CLINIC	5	6	11
		NEW MAN CHRISTIAN CLINIC	6	3	9
		PAYEE CLINIC	3	2	5
		POWER HOUSE CLINIC	5	2	7
		ST. MARY CLINIC	10	4	14
		TOWEH TOWN CLINIC	7	2	9
		VAYENGALY CLINIC	4	3	7
		WEHPLAY CLINIC	5	1	6
		YMCA CLINC	2	5	7
		YOUNLAY CLINIC	5	2	7
		YOURPEA COMM. CLINIC	5	5	10
		ZODRU CLINIC	4	1	5
		ZOE GEH MEDICAL CLINIC	5	2	7
		ZORGOWEE CLINIC	7	2	9
		ZUAPLAY CLINIC	5	5	10
		ZUOPLAY CLINIC	2	2	4
	Clinic Total		228	122	350
	Health Center	BAHN HEALTH CENTER	12	5	17
		KARNPLAY HEALTH CENTER	15	5	20
		SACLEPEA COMP. HEALTH CENTER	59	36	95
		ZEKEPA CLINIC	2	3	5
	Health Center Total		88	49	137
	Hospital	ARCELOR MITTAL YEKEPA HOSPITAL	28	7	35
		GANTA UM HOSPITAL	126	78	204
		GW HARLEY CLINIC	83	36	119
	Hospital Total		237	121	358
	MOH Office	MINISTRY HEALTH TAPPITA	2		2
	MOH Office Total		2		2
	Pharmacy / Dispensary	COMMUNITY MEDICINE STORE	1		1
		J.B MEDICINE STORE	1		1
		JAMESNYAMA MEDICINE STORE	1		1
		LAKE TELEH MEDICINE STORE	1		1
		MA HANNA MEDICINE STORE	1		1
		MA ZAYE MEDICINE STORE		1	1
		TORSARLO MEDICINE STORE	1	1	2
		ZONGO ZERRLEE DRUGE STORE	1		1
		ZONNIE MEDICINE STORE	1		1
	Pharmacy / Dispensary Total		8	2	10
Nimba Total			563	294	857
River Cess	Clinic	BODOWHEA CLINIC	7	1	8
		BOEGEEZAY CLINIC	6	1	7
		CHARLIE TOWN CLINIC	5	2	7
		DOEBOR CLINIC	3	1	4
		GBEDIAH COMMUNITY CLINIC	4	1	5
		GBLORSEO COMMUNITY CLINIC	5	1	6
		GOZOHN CLINIC	6	1	7
		ITI CLINIC	5	3	8
		KAYAH COMMUNITY CLINIC	5		5

		KONGBO CLINIC	5	2	7
		LARKPASEE CLINIC	6	2	8
		NEEZUIN CLINIC	7	1	8
		NEIGHBORHOOD MINI CLINIC	1		1
		OPEN BIBLE MISSION CLINIC	3	3	6
		SARYAH TOWNCLINIC	5	3	8
		TIMBO COMPOUND CLINIC	6	2	8
		ZAMMIE COMMUNITY CLINIC	6	1	7
	Clinic Total		85	25	110
	Hospital	ST. FRANCES HOSPITAL	68	30	98
	Hospital Total		68	30	98
	Pharmacy / Dispensary				
		ABEL MEDICINE STORE	1	1	2
		DEVINE MEDICINE STORE	1		1
	Pharmacy / Dispensary Total		2	1	3
River Cess Total			155	56	211
River Gee	Clinic	CHEBOKEN CLINIC	7	1	8
		JARKAKEN CLINIC	6	2	8
		JAYPROKEN CLINIC	4		4
		JIMMYVILLE CLINIC	5	3	8
		JUWELPO CLINIC	6	1	7
		KANWEAKEN CITY CLINIC	3	1	4
		KILLEPO KANWEAKEN CLINIC	5	3	8
		NYAAKEN CLINIC	3	4	7
		NYENEBO CLINIC	4	2	6
		PRONOKEN CLINIC	4	3	7
		PUTUKEN CLINIC	4	2	6
		RIVER GBEH CLINIC	5	4	9
		ST. KIZTOO'S CLINIC	1	3	4
		TUOBO CLINIC	5	3	8
		U-BOR CLINIC	6	1	7
	Clinic Total		68	33	101
	Health Center	FISHTOWN HEALTH CENTER	13	11	24
		GBEAPO HEALTH CENTER	14	5	19
		SARBO HEALTH CENTER	11	7	18
	Health Center Total		38	23	61
	MOH Office	COUNTY HEALTH TEAM	31	4	35
	MOH Office Total		31	4	35
	Pharmacy / Dispensary				
		BEN MEDICINE STORE		1	1
		EMDORS DRUG STORE	1		1
		FRAKLIN/SIS.MEDICINE STOR	1		1
		JEROME CHELLEA DRUG STOR	1		1
		KARBO SON'S MEDICINE STOR	1		1
		MECAL DRUGS STORE	1		1
		MULBAH DRUGS STORE	1		1
		ORLANDO DRUG STORE	1		1
		TWALLAH DRUGS STORE	1		1
	Pharmacy / Dispensary Total		8	1	9

River Gee Total			145	61	206
Sinoe	Clinic	B.O.PC CLINIC	3	2	5
		BUTAW CLINIC	5	3	8
		CHEBIOH TOWN CLINIC	6	1	7
		DOODWICKEN CLINIC	6	1	7
		DRAPO CLINIC	4	2	6
		DUCORFREE CLINIC	7	1	8
		DYANKPO CLINIC	5	2	7
		EDWARD MEMD. CLINIC	5	2	7
		ENI CLINIC	3	3	6
		GBARTEKEN CLINIC	5	1	6
		GOVT,CAMP CLINIC	7		7
		JACKSONVILLE CLINIC	4	3	7
		JARPUKEN CLINIC	6	1	7
		JOKOKEN CLINIC	6	1	7
		JUARYEN CLINIC	5	1	6
		JUARZON CLINIC	4	1	5
		KARQUEKPO CLINIC	5	2	7
		KILO TOWN CLINIC	5	1	6
		KWITATUZON CLINIC	5	2	7
		LEXINGTON SEESEE CLINIC	5	3	8
		MEWEH WALKER CLINIC	6	2	8
		NYENNAWILKEN CLINIC	4	1	5
		PANAMA CLINIC	6	2	8
		PYNE TOWN CLINIC	6	3	9
		RTM CLINIC	7	1	8
		SAYWON TOWN CLINIC	4	3	7
		SRC CLINIC	6	1	7
		ST.JOSEPH CATHOLIC CLINIC	2	4	6
		TOE MEDICINE CLINIC	1		1
		TUBMANVILLE CLINIC SINOE	5	3	8
		TUZON CLINIC	5	1	6
		VOOGBADEE CLINIC	4	1	5
		WIAH TOWN CLINIC	3	3	6
	Clinic Total		160	58	218
	Hospital	F.J GRANTE HOSPITAL	122	55	177
	Hospital Total		122	55	177
	Pharmacy / Dispensary	BIG J MEDICINE STORE	1		1
		JULIE MEDICINE STORE	1		1
		KAMARA MEDICINE STORE	1		1
		UNCLE T MEDICINE STORE	1		1
		UNIQUE MEDICINE STORE	1		1
		W.V KESSELLE MEDICINE	1		1
	Pharmacy / Dispensary Total		6		6
Sinoe Total			288	113	401
Total			5431	3337	8768

G.7 Number of each cadre per facility

Table 35: Number of HW per cadre per county, facility type and facility

County	Facility Type		Physician	Nurse	Certified Midwife	Nurse Aide	Physician Assistant	Traditional Midwife	Dentist	Environmental Health Technician	Lab technician / assistant	X-Ray Technician	Pharmacist	Other Health Cadres	Non-Clinical Health Workers	Total
Bomi	Clinic	AHMADIYYA MUSLIM CLINIC		1											1	2
		BEAFINE COMMUNITY CLINC		1		1								1	2	5
		BEN TOWN COMMUNITY CLINIC		1	1	1								1	2	6
		BONJEH TOWN CLINIC		1											2	3
		DAGWEH COMMUNITY CLINIC		1		1								1	2	5
		DORTHY COMMUNITY CLINIC													1	1
		FEFEH TOWN COMMUNITY CLIN		1	1	2								1	2	7
		GAYAH HILL CLINIC		1		2									2	5
		GBAH COMMUNITY CLINIC				2									1	3
		GOGHEN CLINIC		1	1	1								1	2	6
		GONJEH CLINIC									1					1
		GONZIPO COMMUNITY CLINIC		1	1	3	1							1	4	11
		GUTHRIE CLINIC		8	2	19	1				2		1	2	14	49
		JENNEH #3 CLINIC		1	1	2				1	1				2	8
		MALEMA CLINIC		1	1	1					1			1	3	8
		MECCA COMMUNITY CLINIC		1	1	2				1					2	7
		SACKIE TOWN COMMUNITY CLINIC		1	1	2									2	6
		SASS TOWN CLINIC		2	2	3					1			1	2	11
		ST.LUKE CLINIC		1	1	2	1				1				2	8
		SUEHN CLINIC		2	1	1					1			1	2	8
		VORTOR COMMUNITY CLINIC			2	1								1	1	5

		WEAWOLO COMMUNITY CLINIC		1		3								2	6
		YOMO TOWN CLINIC		2									1	2	5
		ZORDEE COMMUNITY CLINIC		1		1							1	2	5
	Clinic Total			30	16	50	3		2	8		1	14	57	181
	Hospital	LIBEIRIA GOVT. HOSPITAL	1	23	7	17	4		4	4		1	4	58	123
	Hospital Total		1	23	7	17	4		4	4		1	4	58	123
	Pharmacy / Dispensary	CFM DRUG STORE											1		1
		MY FAVORITE MEDICINE STOR				1									1
		ST.JOHNSON MEDICINE STORE											1		1
	Pharmacy / Dispensary Total					1							2		3
Bomi Total			1	53	23	68	7		6	12		2	20	115	307
Bong	Clinic	AFBM CLINIC		2	1	4	1			2				5	15
		BAH-TA CLINIC		1	1	2							1	2	7
		BELEFANAI CLINIC		2	1	1	1			1			2	1	9
		BELLEMU CLINIC				1							1	1	3
		BOTOLA CLINIC		1		2	1						1	1	6
		DETERMININER MEDICAL CLIN		1		1				1					3
		FENUTOLI HEALTH CLINIC		1	1	2		1		1			1	3	10
		FOEQUELLEH CLINIC		1										2	3
		GAARMU CLINIC		1	1							1		3	6
		GBALATUAH CLINIC		1	1	2						1		2	7
		GBANSU SULONMA		1	1	2							1	1	6
		GBARTALA CLINIC		1	1	1							1	2	6
		GBECOHN CLINIC		2	1	1	1	2	1				1	4	13
		GBONOTA CLINIC			1	2								2	5
		HANDII COMMUNITY CLINIC		1		1							1	2	5
		JANYEA CLINIC		1	1	1			1				1	2	7
		JORWAH CLINIC		1		1		1					1	2	6
		KPAAI CLINIC		1		2							1	1	5
		LAM CLINIC		2		1							1	3	7
		MILLIONAIRE COMM.CLINIC								1					1
		NAAMA CLINIC		1									1	2	4
		PALALA CLINIC		1	2	1							2	3	9
		SAMAY CLINIC		1	1	2							1	2	7

		SANOYEA CLINIC		1	1								1	2	5
		SHANKPALAI CLINIC		1	1	2							1	2	7
		TOKPAIPOLU CLINIC		1	1	2							1	1	6
		TOTOTA CLINIC		1	3								4	2	10
		YILA COMMUNITY CLINIC			1	2								3	6
		ZEANZUE CLINIC		1	1								1	2	5
		ZEBAY CLINIC			1	2				1			1	3	8
		ZOMA MEDICAL CLINIC								1		1			2
		ZOWEINTA CLINIC			1	1							1	1	4
	Clinic Total			29	24	39	4	4	2	8		3	28	62	203
	Health Center	C.B. DUMBAR		5	2	3							2	9	21
		SALALA CLINIC		1	1	2	1			1			2	2	10
	Health Center Total			6	3	5	1			1			4	11	31
	Hospital	BONG MINE HOSPITAL	1	7	1	17	2		1	3	1	1	6	32	72
		PHEBE HOSPITAL	4	78	15	24	3		2	10		1	11	128	276
	Hospital Total		5	85	16	41	5		3	13	1	2	17	160	348
	Pharmacy / Dispensary														
		EMACY MEDICAL STORE											1		1
		FAITH MEDICINE STORE				1									1
		IN MEDICINE STORE				1									1
		OLU DRUGS STORE											1		1
		PEOPLE'S MEDINCESTORE											1		1
		PROGRESS MEDICINE STORE												1	1
		SANA MEDICINE STORE		3		7		1					8	8	27
		TRINITY MEDICINCE STORE											1		1
		WETLAND DRUG STORE		1											1
	Pharmacy / Dispensary Total			4		9		1					12	9	35
Bong Total			5	124	43	94	10	5	5	22	1	5	61	242	617
Gbarpolu	Clinic	BAMBUTA CLINIC		1		2								2	5
		FASSAMA BADE CLINIC		1	1	3		3		1			1	1	11
		GBANGAY CLINIC		1		1		5					1	3	11
		GBARMA CLINIC		1	2	3	1		1				1	3	12
		GBARYAMAH CLINIC		3	1	5				1				2	12
		GOKALA CLINIC				3								2	5
		HENRY TOWN CLINIC				1	1						1	2	5

		KPAYEAKWELLE CLINIC		2		1						1	2	6
		KUNGBOR CLINIC		1		2		1				1		5
		TARKPOIMA CLINIC		1		3		1		2			2	9
		TOTOQUELLEH CLINIC		1	1	1						1	2	6
		WEASUE CLINIC		2		1							2	5
	Clinic Total			14	5	26	2	10	1	4		7	23	92
	Hospital	CHIF JALLAHLONE HOSPITAL	1	13	5	10	2		6	2	1	2	32	74
	Hospital Total		1	13	5	10	2		6	2	1	2	32	74
Gbarpolu Total			1	27	10	36	4	10	7	6	1	9	55	166
Grand Bassa	Clinic	ACFI CLINIC		2		1							1	4
		BARSEEGIAH CLINIC		1		1						1	1	4
		BOBGLAY TOWN CLINIC	1			1				1			2	5
		BOKAY TOWN CLINIC		1		1		1					3	6
		BRE CLINIC										1	4	5
		BRENDA KINGS CLINIC				1		1				1	4	7
		CAMPHOR MISSION CLINIC		1	1			1		1		1		5
		CEEGBAH CLINIC				1								1
		CHRISTIAN EXTENSION					2	4		1		1	4	12
		CIVIL COMPOUND CLINIC #4		1	1							1	4	7
		CIVIL COMPUND CLINIC #2				1						1	3	5
		COMPOUND #3 CLINIC		2		3		1		1		1	5	13
		DESOE TOWN CLINIC		1		1		1				1	3	7
		EDINA CLINIC		1								1	3	5
		FAMILY PLANNING CLINIC			1	1								2
		FOSTER TOWN CLINIC						1		1			4	6
		GARDOUR CLINIC		1				1				1	4	7
		JACOB LATEH CLINIC		1		1	1	1				1	1	6
		JORIAM CLINIC		1	1	2							1	5
		LITTLE BASSA CLINIC					1	1				1	3	6
		LITTLE KOLA CLINIC		1				1				1	3	6
		LLOYDVILLE CLINIC		1	1	2				1		1	2	8
		NEW CESS CLINIC		1		1								2
		OWENSGROVE CLINIC			1	1	1					1	3	7
		RED CROSS				1							4	5
		SENYAH COMMUNITY CLINIC				1						1	3	5

		SOS CLINIC BASSA		1												1
		ST. JOHN CLINIC		2	1	1								1	3	8
		SUE TOWN CLINIC				2									2	4
		TUBMANVILLE CLINIC		1										1	3	5
		WELL BABY CLINIC			1		1							1	3	6
	Clinic Total		1	20	8	24	6	14		6				20	76	175
	Health Center	BACHT CLINIC	1	4	1	1			10						10	27
		CATHOLIC HEALTH CLINIC		1	1	5	1			2			1		3	14
	Health Center Total		1	5	2	6	1		10	2			1		13	41
	Hospital	ARCELORMITTAL HOSPITAL	1	5		3	1			1	1	1			7	20
		GOVERNMENT HOSPITAL		41	6	43	2		3	6				6	59	166
		LAC HOSPITAL	2	18	2	4				3				1	16	46
	Hospital Total		3	64	8	50	3		3	10	1	1		7	82	232
	Pharmacy / Dispensary	ALRAFI PHARMACY												1	1	2
		LUCY PHARCACY													1	1
	Pharmacy / Dispensary Total													1	2	3
Grand Bassa Total			5	89	18	80	10	14	13	18	1	2		28	173	451
Grand Cape Mount	Clinic	BAMBALLAH COMM.CLINIC		1										1	2	4
		BANGORMA COMM.CLINIC			1	1									2	4
		BENDAJA COMM.CLINIC		2		1		1						1	2	7
		BENDU CLINC		1		1								2	2	6
		BOMBOJA CLINIC		1	1										2	4
		BO-WATERSIDE CLINIC		2										1	1	4
		DAMBALLA COMM.CLINIC		2	1	1								1	4	9
		DIAH COMM.CLINIC		2		1								1	2	6
		FAHNJA CLINIC		1										1	3	5
		FANTI TOWN CLINIC		1	1									1	3	6
		GONDAMA CLINIC		1										1	2	4
		GONELOR COMM.CLINIC				1	1							1	2	5
		JENE WONDE CLINIC		1		1								1	2	5
		JUNDU CLINIC		1		1									1	3
		KANGA CLINIC		1	1	1								1	2	6
		KAWELAHUM COMM.CLINIC		1		1									1	3

		KPENEJE CLINIC		1			1	1		1			1	3	8
		KULANGOR CLINIC			1	1								2	4
		LOFA BRIDGE CLINIC		1	1					1				3	6
		MADINA CLINIC		1	1	1							1	2	6
		MAMBO CLINIC		1		1				1			1	2	6
		MANO RIVER KONGO CLINIC		2		2								1	5
		MBALOMA CLINIC				1							1	1	3
		SEBEHUM CLINIC		1		1		1					1	1	5
		ST. FRANCIS CLINIC CAPE MOUNT												1	1
		TAHN CLINIC				1							1	2	4
		TAHN-MAFA CLINIC		1		1							1	1	4
		TALLAH COMMUNITY CLINIC		1	1								1	3	6
		TIENI CLINIC				2	1							2	5
		VARGUAYE CLINIC		1	1	1							1	2	6
		ZAWAY CLINIC		1									1	3	5
	Clinic Total			29	10	22	3	3		3			23	62	155
	Health Center	CAVALLA HEALTH CENTER CAPE MOUNT				1								1	2
		SINJE HEALTH CENTER		5	2	5	5		1	2		1	5	13	39
	Health Center Total			5	2	6	5		1	2		1	5	14	41
	Hospital	ST TIMOTHY GOL HOSPITAL	1	14	2	15	1	1	2	3		1	6	41	87
	Hospital Total		1	14	2	15	1	1	2	3		1	6	41	87
	Pharmacy / Dispensary	BLEGHOUR MEDICINE STORE		1											1
		COLE MEDICINE STORE											1		1
		E.F P MEDICINE STORE											1		1
		FAMILY VISION MEDICINE ST											1		1
		GUY JHNNY MEDICINE STORE											1		1
		LOFA BRIDGE STORE											1		1
	Pharmacy / Dispensary Total			1									5		6
Grand Cape Mount Total			1	49	14	43	9	4	3	8		2	39	117	289
Grand Gedeh	Clinic	BEH TOWN CLINIC		1		2		1						2	6
		CHRIST THE KING CLINIC			1	1								1	3
		GBARZON JARWODEE CLINIC		1	1	1						1		2	6
		GBOLEKEN CLINIC		1		1							1	2	5

		GORBO WORGBA CLINIC		1		1		1					1	3	7
		JANZON CLINIC		1		1					1		1	3	7
		KARLORWLEH TOMN CLINIC						1					2	2	5
		KONOBO ZIAH TOWN CLINIC			1	2	1				1		1	4	10
		KUMAH TOWN CLINIC		1		1		1					1	3	7
		PENNOKON CLINIC		1		1		1			1		1	3	8
		POLAR CLINIC		1		1		1			1		1	3	8
		PUTU JARWODEE CLINIC		1		1					1		1	2	6
		TOE TOWN CLINIC			1	1	1				1		1	3	8
		TOFFIA TOWN CLINIC		1		1							1	2	5
		TUZAN CLINIC				1	1						1	2	5
		ZAI CLINIC		1	1	1					1		1	3	8
	Clinic Total			11	5	17	3	6			7	1	14	40	104
	Hospital	M.TUBMAN MEMORIAL HOSPITAL	2	29	4	33	7	3	1	6	6	1	6	75	173
	Hospital Total		2	29	4	33	7	3	1	6	6	1	6	75	173
	Pharmacy / Dispensary	GALAPO DRUG STORE											1		1
		J&R PHARMACY											1		1
		JAM PHARMACY											1		1
		NEW ZWEDRU MEDICINE STORE											1		1
		ORLANDO TARLUE PHARMACY											1		1
		SELF-HELP PHARMACY											1		1
		SIS GLORIA'SDRUG STORE											1		1
		ZWEDRU COMMUNITY MED STOR											1		1
	Pharmacy / Dispensary Total												8		8
Grand Gedeh Total			2	40	9	50	10	9	1	6	13	2	28	115	285
Grand Kru	Clinic	BUAH HEALTH CENTER				1									1
		GARRAWAY CLINIC			1	4								1	6
		GBALAPO CLINIC		1		2							1	5	9
		GBANKEN CLINIC		1		2		1					1	2	7
		GBLEEBO CLINIC			1	1		1					1	2	6
		GENOYAH CLINIC		1		2		1						2	6
		JUDUKEN CLINIC				2		1		1				3	7
		NEMIAH WILSON CLINIC		1											1
		NEWAKEN CLINIC GRAND KRU			1	1				1	1		1	3	8

		NIFFU CLINIC		1		1		1					1	3	7
		NYANKUNPO CLINIC				1								5	6
		PICNICCESS CLINIC		1	1	3		3			1		1	5	15
		SASSTOWN HEALTH CENTER		1		4		1			1		2	4	13
		WILSONVILLE CLINIC				1		1					1	2	5
	Clinic Total			7	4	25		10		2	3		9	37	97
	Health Center	BARCLAYVILLE HEALTH CENT.		2	1	2	2	2		2	1		2	20	34
		BEHWAN HEALTH CENTER			1	1	1			1	1		1	3	9
	Health Center Total			2	2	3	3	2		3	2		3	23	43
	Hospital	RALLY TIME HOSPITAL	1	3	1	22	1	5			2		1	48	84
	Hospital Total		1	3	1	22	1	5			2		1	48	84
Grand Kru Total			1	12	7	50	4	17		5	7		13	108	224
Lofa	Clinic	BALAGWALAZU CLINIC		1		1		1					2	2	7
		BARKEDU CLINIC		2		2							1	1	6
		BARZIWEN CLINIC			1	1							2	1	5
		BAZAGIZIA CLINIC		1		3							1	1	6
		BONDI CLINIC		1		5		1						2	9
		BORKEZA CLINIC		1		2		1					1	2	7
		DOGOMAI CLINIC		1		2					1		1	4	9
		FANGODA CLINIC		1		3		7			1		2		14
		FASSAVOLU COMMUNITY CLINI		1				3					2	2	8
		FISSEBU CLINIC		1	1	3								1	6
		FOYA HEALTH CENTER	1	11	6	25	4	3		2	6	1	7	36	102
		FOYA COMMUNITY CLINIC											1		1
		FOYA TENGIA CLINIC		1		1		1			1		1	2	7
		GANGLOTA CLINIC		1		3									4
		GBALAKPALASU CLINIC		1		2		1					1	2	7
		GBANWAY CLINIC		1	1	3							1	1	7
		GBONYEA CLINIC		1	1	2								2	6
		GORDONLAHUN CLINIC		1		2		1			1		1	4	10
		GORLU CLINIC		1		1								2	4
		KAINTAHUN CLINIC		1		2		1					1	1	6
		KAMATAHUN CLINIC				5	1	1					1	3	11
		KORWORHUN CLINIC		1		1		1					1	2	6
		KPADEMA CLINIC		1		2		1						3	7

	KPAIYEA CLINIC		1		4		1						1	7
	KPAKAMAI CLINIC	1			3		1						1	6
	KPOTOMAI CLINIC		1		2		2						4	9
	LAWALAZU CLINIC		1	1	1							2	2	7
	LEINGBAMBH CLINIC		1	1	2		1						3	8
	LUSAKU CLINIC		1		4	1	2		2			1	5	16
	LUYEAMA CLINIC		1		1		1					1	2	6
	NYANDEMOLAHUN CLINIC		2		1		1					2	2	8
	POPALAHUN CLINIC				4							1	3	8
	PORLUMA CLINIC		2	1									2	5
	SALAYEA CLINIC		1	1	3	1						1	1	8
	SARKONEDU CLINIC		1		2		1					1	2	7
	SHELLO CLINIC				2		1						2	5
	SORLUMBA CLINIC		1		5				1				1	8
	SUCROMU CLINIC		1	1	3								1	6
	V.F.P. CHURCH CLINIC		1		4				1				2	8
	VENALU CLINIC		1		4		1						3	9
	WARSONGA CLINIC				1							1	4	6
	YARKPUAH CLINIC		1		2								2	5
	YEALA CLINIC		1		3		1						1	6
	YEGBEDU CLINIC		1		5		1					1		8
	ZAWORDAMAI CLINIC				4								1	5
	ZENALORMAI CLINIC		1		3		1						2	7
	ZOLOWO CLINIC		1		3									4
Clinic Total		2	52	15	137	7	38	2	14		1	38	121	427
Health Center	BOLAHUN HEALTH CENTER		2	1	7	2	5		1			1	3	22
	KONIA HEALTH CENTER		2	2	1				1			1	2	9
	VAHUN HEALTH CENTER		3		5	1	4		2			1	6	22
Health Center Total			7	3	13	3	9		4			3	11	53
Hospital	CURRAN LUTHERAN HOSPITAL	2	25	8	17	1	1	1	5		1	2	24	87
	FOYA COMMUNITY HOSPITAL	1		1	3		2						2	9
	KOIKOI HOSPITAL					1								1
	KOLAHUN HOSIPTAL		7	3	21	2	5	1	2			7	29	77
	TELLEWOYAN MEMORIAL HOSPT	4	29	7	47	6	2	2	8	2	3	3	90	203
Hospital Total		7	61	19	88	10	10	4	15	2	4	12	145	377

Lofa Total			9	120	37	238	20	57	6	33	2	5	53	277	857
Margibi	Clinic	BEYAN KESSELLEY CLINIC		3		5				1			2	3	14
		CAVALLA CLINIC MARGIBI			1										1
		CHARLESVILLE CLINIC		1	1								1	5	8
		CITY CLINIC		2	2	9				2		1		5	21
		CITY CLINIC ANNEX				2				2				2	6
		DIVISION28 HEALTH CENTER		1	2	2								2	7
		DR BARCOLLEH CLINIC		3	1	5				1			1	5	16
		FAMILY PLANNING CLINIC		2	1	2								3	8
		GBAYE-TA CLINIC		2		2								2	6
		KAKATA HEALTH CENTER			1		1			1			2	2	7
		KENDEI MEDICAL CLINIC			1	1								2	4
		LARKAY TA CLINIC			1	1							1	2	5
		MODERN MEDICAL CLINIC		1		5				2				2	10
		PETER'S TOWN CLINIC		1	1	1							1	2	6
		PIONEER FOR CHRIST CLINIC		3		3		1							7
		SAMUEL COOPER HEALTH CENT		2									1	4	7
		SARCO MEDICAL CLINIC		2		7				1			1	3	14
		SCHIEFFLIN CLINIC		1	1	1			1				1	2	7
		SRC FACTORY CLINIC			1		1			1				1	4
		TUCKER TA CLINIC				1							1	1	3
		UNCLE MS CLINIC		3		1		1		2				2	9
		VALLEY TA CLINIC		1									1	2	4
		WEALA COMMUNITY CLINIC		3						1		1		1	6
		WOLOLA CLINIC		1	1	1							1	2	6
		WORHN CLINIC		1	1	1							1	2	6
		YARWULLIE CLINIC		1		1							1	2	5
		YEAMAI CLINIC		1	1	1							1	2	6
		ZEEWORTH CLINIC		1	1	1							1	2	6
	Clinic Total			36	18	53	2	2	1	14		2	18	63	209
	Health Center	DOLO'S TOWN HEALTH CENTER		3	2	8				2			2	4	21
		HARBEL HEALTH CENTER		5	1	4	1							6	17
		LIBERIA HEALTH CARE CENTE		1	1	2	1			1			1	5	12
		MARSHALL HEALTH CENTER		2	1	3				1			2	3	12
		SRC HEALTH CENTER		2	2	1	1			1				4	11

		UNI TOWN HEALTH CENTER		1	3	5	2	1			2				3	17
	Health Center Total			14	10	23	5	1			7			5	25	90
	Hospital	C.H.RENNIE HOSPITAL	2	19	6	25	4			4	5	1	1	9	35	111
		HARBEL HOSPITAL FIRESTONE	2	21	2	21				1	5	2			47	101
	Hospital Total		4	40	8	46	4			5	10	3	1	9	82	212
Margibi Total			4	90	36	122	11	3		6	31	3	3	32	170	511
Maryland	Clinic	BARRAKEN CLINIC		1		2									2	5
		BONIKEN CLINIC		2		2									2	6
		CAVALLA CLINIC		1		1								1	2	5
		FISH TOWN CLINIC		1		2	1								2	6
		FLELOKEN CLINIC				1	1							1	2	5
		GBAWILIKEN CLINIC		1				1		1				1	3	7
		GLOFARKEN CLINIC		1				1		1				1	2	6
		JULUKEN CLINIC		1	1	2									2	6
		MANOLU CLINIC		1						1				2	2	6
		NEMEKEN/KUNOKUDI CLINIC		1										1	2	4
		NEWAKEN CLINIC		1						1				1	3	6
		OLD SODOKEN CLINIC		1	1					1				1	3	7
		POUGBAKEN CLINIC		1				1		1				1	3	7
		PULLA CLINIC			1	1	1				1			1	3	8
		ROCK TOWN CLINIC		1		1								1	2	5
		ROCK TOWN KUNOLUDI CLINIC		1				2						1	1	5
		SACRED HEART CLINIC		1	1	2		1						1	5	11
		ST.FRANCIS CLINIC		1		2	1	1		1	1			3	1	11
		YEDIAKEN CLINIC		1				1		1				1	2	6
	Clinic Total			18	4	16	4	8		8	2			18	44	122
	Health Center	CAVALLA HEALTH CENTER			1	5	1				1				11	19
		KARLOKEN HEALTH CENTER		2		1								1	2	6
		PLEEBO HEALTH CENTER		5	1		2			2	2			2	10	24
	Health Center Total			7	2	6	3			2	3			3	23	49
	Hospital	JJ DOSSEN HOSPITAL	6	23	5	35	10	1		2	5			10	94	191
	Hospital Total		6	23	5	35	10	1		2	5			10	94	191
Maryland Total			6	48	11	57	17	9		12	10			31	161	362
Montserrado	Clinic	ACFI MEDICAL CENTER				3					1		1		4	9
		ARTHINGTON CLINIC		1		2									3	6

		BANJOR COMMUNITY CLINIC		1	1	6	1						2	2	13
		BLAMACEE COMMUNITY CLINIC		1	1	1								1	4
		BROMLEY COMMUNITY CLINIC		1		2								2	5
		CAREYSBURG CLINIC			1	1	1						4	2	9
		CHOCLATE CITY CLINIC			2	1	1						2	1	7
		CLAYASLAND CLINIC				1		1						1	3
		CROZIERVILLE CLINIC		1		2								2	5
		DAOUDA CLINIC		1		2								1	4
		DAQMOW CLINIC LARKPAZEE				4	1			1				2	8
		DWEH/CENTRAL MATADI CLINI				3	1	1					2	1	8
		EJ GOODRIDGE CLINIC		1						1			1	2	5
		FAITH CLINIC		1		2				1			1	3	8
		FEW HEALTH SERVICE				1									1
		GARDNERSSVILLE CLINIC		3	3	4			1	1				4	16
		GBANSU SULONMA HEALTH CEN												1	1
		GERMAN CLINIC		1	3	8	1			1				3	17
		GOBAH TOWN CLINIC				2				1					3
		GREY STONE CLINIC		1	1	3				1			1	1	8
		HARRISBURG CLINIC		1	1	4			1	1				2	10
		HYDRO MERCI CLINIC		1	2	1	1			1			1	2	9
		IMANI HOUSE CLINIC		1			1	1		1			1	5	10
		JAMAICA ROAD CLINIC		1	1	8	4	1		4		1	1	4	25
		JOHNSONVILLE CLINIC		1	1	1								2	5
		KEBBEH MAT.AND LAB. CLINI			1					1					2
		KENEJA CLINIC		4		6								2	12
		KINGSVILLE CLINIC		2	1									2	5
		KOON TOWN CLINIC				1							2	1	4
		KPALLAH COMMUNITY CLINIC		2	2	2							1	4	11
		LOTTCAREY MISSION CLINIC				1									1
		LOUISIANA CLINIC												2	2
		MARIAMA BROWN CLINIC		1		1	1							1	4
		MARIAMA Z. BROWN CLINIC				2									2
		MAWA CLINIC				4								6	10
		MERCI CLINIC			1	2									3
		MONROVIA CENTRAL PRISON C			1	1	1						1	1	5

	MORRIS FARM CLINIC		3		5					1				1	1	11
	MOTHER AND CHILD CLINIC		1		4	1				1				1	3	11
	NEW COMMUNITY CLINIC		1	1	4	1				1				1	5	14
	PAPHE FAITH CLINIC		1		1								1		1	4
	PRES BY TERIAN CLINIC													1		1
	PROVIDENCE CLINIC		2	1	3	2	2			1			1	1	7	20
	PUCC COMMUNITY CLINIC			3	9	1				1				4	3	21
	RCD MARSHALL CLINIC		1	1	4				1					1	2	10
	RED CROSS CLINIC	1	3		1	2				2				1	1	11
	RICKS MISSION CLINIC		1													1
	SLIPWAY CLINIC		2	1	6	1	2			1				2	3	18
	SOINWEN COMM.CLINIC		3	3	17	3				1				2	4	33
	SOS CLINIC	3	7		10	1				3	2			1	22	49
	ST.JOSEPH CATHOLIC CLINIC		2	1	2										4	9
	THIRD ROCK CHINESE CLINIC		2		1					1					2	6
	WHITE PLAINS CLINIC				3	1	1								1	6
	WILLIAM BOOTH CLINIC	1	2	1	1					1					2	8
	ZANNAH TOWN CLINIC			1	1										2	4
Clinic Total		5	58	36	154	27	9		3	30	2	4	36	133		497
Health Center	BARBARA ANN HEALTH CENTER		4		5					2				1	8	20
	BARDNERSVILLE HEALTH CENT		3	3	8	3	1								5	23
	BENSONVILLE HEALTH CLINIC		3	1	6	3				2				2	6	23
	BISHOP COLLINS HEALTH CEN		3	2	1		1			2					4	13
	CLARA TOWN HEALTH CENTER		2	13	11	5			1	2				4	9	47
	DUPORT ROAD HEALTH CENTER		4	8	6				1	2			1	1	6	29
	NEW GEORGIA HEALTH CENTER		2	3	6	3	1	1		1				2	5	24
	NEW KRU TOWN CLINIC		8	7	21	10				5				3	21	75
	NYEHN HEALTH CENTER		2	1	2				1	1				2	2	11
	PIPELINE HEALTH CENTER		5	4	7	1				2				2	2	23
	SATP CLINIC					1										1
	SIS AGNES HEALTH CENTER		2	3	2					2					4	13
	ST. BENEDICT HEALTH CENTE	1	1	3			2			3				3	5	18
	STAR OF THE SEA HEALTH CENTER	1	8	6	4	3	4			2				1	8	37
Health Center Total		2	47	54	79	29	9	1	3	26			1	21	85	357
Hospital	BENSON HOSPITAL		54	4	26	18			3	8			1	4	48	166

	ELWA HOSPITTAL	1	25	6	21		8		7	1		9	37	115
	ISLAND HOSPITAL		41	3	26	13			5	1	1	1	17	108
	JOHN F KENNEDY HOSPITAL	24	140	21	57	13	11	4	27	7	1	20	238	563
	REDEMPTION HOSPITAL	3	66	16	55	10	1	1	8		1	8	71	240
	SDA COOPER HOSPITAL	2	14	3	14	1			2		3	3	37	79
	ST.JOSEPH CATHOLIC HOSPITAL	4	24	4	23	2			4	1	1	2	47	112
	TB ANNEX HOSPITAL	1	13	3	7	4		3	6	1	3	6	49	96
Hospital Total		35	377	60	229	61	20	11	67	11	11	53	544	1479
MOH Office	MOH CENTRAL	4	26	3	6	8		56	2		3	77	278	463
MOH Office Total		4	26	3	6	8		56	2		3	77	278	463
Pharmacy / Dispensary	A.A MEDICINE STORE				1									1
	AGE PHARMACY											1		1
	ANATAH PHARMACY BROAD ST.		1											1
	B&B MEDICINE STORE											1		1
	B-KAY PHARMACY BROAD ST	1										1		2
	CHARIF PHARMACY											1		1
	DESTINY MEDEICINE STORE											1		1
	DR.SALMAN PHARMACY											1		1
	F.B.K.MEDICINE STORE												1	1
	F.L.MEDICINE STORE											1		1
	GENTLE MEDICINE STORE											1		1
	GEORGE PHARMACY ASHM.ST					1								1
	GOD'S WILL PHARMACY											1		1
	GOLDEN VALLEY MEDICINE ST											1		1
	GOOD WILL PHARMACY R.ST				1									1
	H.E.MEDICINE STORE											1		1
	HOME PHARMACY				1									1
	INDO-LIBERIAN PHARMACY		1											1
	JACK ZU PHARMACY										1			1
	JOSCON MEDICINE STORE												1	1
	JUST PHARMACY											1		1
	KENNEH &SONS PHARMACY		1											1
	KONKPAMA PHARMACY											1		1
	KPANGISUA MEDICINE STORE											1		1

		LAST HOPE PHARMACY												1		1
		MALAG PHARMACY MECH.ST												1		1
		MENSAH MEDICINE STORE												2		2
		MERCY MEDICINE STORE												1		1
		MIGHTY LAND MEDICINE STOR												1		1
		MIRACLE PHARMACY													1	1
		MJ MEDICINE STORE				1										1
		MODERN ASSACITE MEDICINE												1		1
		MOTHER'S PHARMACY BROAD S				1										1
		MY FAVORITTE MEDICINE ST.													1	1
		O.BLESSING MEDICINE STORE												1		1
		OBUKO SISTER MEDICINE STO												1		1
		POUTAL PHARMACY												1		1
		R&R MEDICINE STORE		1										1		2
		RAMI PHARMACY BROAD ST												1		1
		RITTER PHARMACY BROAD ST													1	1
		SHREE KRISHUA PHARMACY				1										1
		SUU PHARMACY RANDALL ST													1	1
		SWARAY PHARMACY												1		1
		SWARY PHARMACY FRONT ST													1	1
		TROPICAL PHARMACY ASHM.ST	1													1
		U-2MEDICINE STORE				1										1
		UNCLE TOM PHARMACY													1	1
		U-Z MEDICINE STORE												1		1
		VAYLAZU MEDICINE STORE												1		1
	Pharmacy / Dispensary Total		2	4		7	1						1	29	8	52
Montserrado Total			48	512	153	475	126	18	21	73	125	13	20	216	1048	2848
Nimba	Clinic	AGAPE HEALTH CLINIC		2							2		1		1	6
		BAHN MISSION CLINIC		1				1						1	2	5
		BEADATUO CLINIC		1		2								1	1	5
		BEO YOOLAR CLINIC		1		2		1						1	2	7
		BONLAY CLINIC		1		1		3						1	2	8
		BUNADIN CLINIC		1	1	1		1			1			1	2	8
		BUUTUO INLAND CLINIC		3				1			1			1	2	8
		CLINIC FLUMPA COMM.		1		1	1				1			1	2	7

		CLINIC FLUMPAULIC	2		1			1	1	3	8
		CLINIC KARNWEE	1		2				1	2	6
		CONSOLATA CLINIC	1		3	1	2	1		2	10
		DIALLAH CLINIC	2		2			1	2	1	8
		DOU TIAYEE CLINIC	3		1				1	3	8
		DUO CLINIC	1	1	1			1	1	2	7
		DUOPLAY CLINIC	1	1	1				1	2	6
		DUOYEE CLINIC			1	2	1		1	3	8
		EQUIP COMMING CLINIC								1	1
		GANTA COMMUNITY CLINIC	1	1	2	1			1	3	9
		GARPLAY CLINIC	1		1			1	1	1	5
		GBEIVONWEA CLINIC	1	1	1			1	1	1	6
		GBLOULAY CLINIC	1						1		2
		GOAGORTUO CLINIC	1		2			1	1	2	7
		GRALE CLINIC	1		2		2		2	2	9
		KL FOUNDATION CLINIC		1	1			1	1	1	5
		KPAYTUO CLINIC	1		1		4		1		7
		KPEIN CLINIC	1	1	2			1		2	7
		KWEDIN CLINIC	1		1		1	1	2	1	7
		LEPULA CLINIC	1			1			2	4	8
		LIBCO COCOPA CLINIC	1	1	3		3		2	3	13
		LOGUATUO CLINIC			1		1			2	4
		LUGBEYEE CLINIC	1		1			2		3	7
		MEHNLA CLINIC			3	1		2	1	3	10
		MID BAPTIST CLINIC			2	1	4	1	1	2	11
		NEW MAN CHRISTIAN CLINIC	2		3			2		2	9
		PAYEE CLINIC	1		1		1			2	5
		POWER HOUSE CLINIC	1		3	1	1	1			7
		ST. MARY CLINIC	2	1	2		1	2	2	4	14
		TOWEH TOWN CLINIC			3	1		2	1	2	9
		VAYENGALY CLINIC			2			1	1	3	7
		WEHPLAY CLINIC	1					2	1	2	6
		YMCA CLINC	2		2				1	2	7
		YOUNLAY CLINIC	1		1				1	4	7
		YOURPEA COMM. CLINIC		1		1	3	1	2	2	10

		ZODRU CLINIC		1		1					1			1	1	5
		ZOE GEH MEDICAL CLINIC				1	2								4	7
		ZORGOWEE CLINIC		1		2					2			1	3	9
		ZUAPLAY CLINIC		1		2	1	2			1			1	2	10
		ZUOPLAY CLINIC				1								1	2	4
	Clinic Total			47	10	66	14	33			35		1	45	98	349
	Health Center	BAHN HEALTH CENTER			2	3	1	1		1	1			2	5	16
		KARNPLAY HEALTH CENTER		2		1	3	1			3			4	6	20
		SACLEPEA COMP. HEALTH CENTER	1	10	3	21	7	3		2	6			5	37	95
		ZEKEPA CLINIC		1				1			1			1	1	5
	Health Center Total		1	13	5	25	11	6		3	11			12	49	136
	Hospital	ARCELOR MITTAL YEKEPA HOSPITAL		3	1	8	2				2	1	1		17	35
		GANTA UM HOSPITAL	3	37	5	29	1		1	1	12	1		9	93	192
		GW HARLEY CLINIC	1	21	5	15	4	1		2	5			6	58	118
	Hospital Total		4	61	11	52	7	1	1	3	19	2	1	15	168	345
	MOH Office	MINISTRY HEALTH TAPPITA								1					1	2
	MOH Office Total									1					1	2
	Pharmacy / Dispensary															
		J.B MEDICINE STORE				1										1
		JAMESNYAMA MEDICINE STORE												1		1
		LAKE TELEH MEDICINE STORE					1									1
		MA HANNA MEDICINE STORE													1	1
		MA ZAYE MEDICINE STORE				1										1
		TORSARLO MEDICINE STORE												2		2
		ZONGO ZERRLEE DRUGE STORE												1		1
		ZONNIE MEDICINE STORE												1		1
	Pharmacy / Dispensary Total					2	1							5	1	9
Nimba Total			5	121	26	145	33	40	1	7	65	2	2	77	317	841
River Cess	Clinic	BODOWHEA CLINIC		1		2								1	3	7
		BOEGEEZAY CLINIC		1		1		1						1	3	7
		CHARLIE TOWN CLINIC		2	1									1	3	7
		DOEBOR CLINIC		1		1		1							1	4
		GBEDIAH COMMUNITY CLINIC		1		1								1	2	5
		GBLORSEO COMMUNITY CLINIC		1		1		1						1	2	6
		GOZOHN CLINIC		2				1		1				1	2	7

		ITI CLINIC			1	1	1					1	4	8
		KAYAH COMMUNITY CLINIC		1					1			1	2	5
		KONGBO CLINIC		1	1	1	1					2	1	7
		LARKPASEE CLINIC		2		2		2					2	8
		NEEZUIN CLINIC		1	1	1	1					1	3	8
		NEIGHBORHOOD MINI CLINIC											1	1
		OPEN BIBLE MISSION CLINIC		1		1		1				1	2	6
		SARYAH TOWNCLINIC		1	1	2		1				1	1	7
		TIMBO COMPOUND CLINIC		2	1	1						1	3	8
		ZAMMIE COMMUNITY CLINIC		1				1				2	2	6
	Clinic Total			19	6	15	3	9	2			16	37	107
	Hospital	ST. FRANCES HOSPITAL	1	19	2	12	5	3	5	2		4	43	96
	Hospital Total		1	19	2	12	5	3	5	2		4	43	96
	Pharmacy / Dispensary	ABEL MEDICINE STORE		1				1						2
		DEVINE MEDICINE STORE				1								1
	Pharmacy / Dispensary Total			1		1		1						3
River Cess Total			1	39	8	28	8	13	7	2		20	80	206
River Gee	Clinic	CHEBOKEN CLINIC				2	1	1				1	3	8
		JARKAKEN CLINIC		2	1	1				1		1	2	8
		JAYPROKEN CLINIC		1		1						1	1	4
		JIMMYVILLE CLINIC		1		2	1			1			3	8
		JUWELPO CLINIC		1		2						1	3	7
		KANWEAKEN CITY CLINIC					1					1	1	3
		KILLEPO KANWEAKEN CLINIC			1	3				1			3	8
		NYAAKEN CLINIC		1		1		1				2	2	7
		NYENEBO CLINIC		1		1		1				1	2	6
		PRONOKEN CLINIC		1		3		1					2	7
		PUTUKEN CLINIC			1	1	1					2	1	6
		RIVER GBEH CLINIC			1	2	1	1		1		2	1	9
		ST. KIZTOO'S CLINIC			1	1		1					1	4
		TUOBO CLINIC		1		1						1	5	8
		U-BOR CLINIC		2		2		1				1	1	7
	Clinic Total			11	5	23	5	7		4		14	31	100
	Health Center	FISHTOWN HEALTH CENTER		5	1	5		2	2	1		2	4	22

		GBEAPO HEALTH CENTER	1	1	4	3		1	1	1	7	19
		SARBO HEALTH CENTER	4	1	3	1		1	2	2	4	18
	Health Center Total		10	3	12	4	2	4	4	5	15	59
	MOH Office	COUNTY HEALTH TEAM	3	1	2	2		2		2	18	30
	MOH Office Total		3	1	2	2		2		2	18	30
	Pharmacy / Dispensary											
		BEN MEDICINE STORE			1							1
		EMDORS DRUG STORE			1							1
		FRAKLIN/SIS.MEDICINE STOR	1									1
		JEROME CHELLEA DRUG STOR								1		1
		KARBO SON'S MEDICINE STOR								1		1
		MECAL DRUGS STORE								1		1
		MULBAH DRUGS STORE								1		1
		ORLANDO DRUG STORE	1									1
		TWALLAH DRUGS STORE								1		1
	Pharmacy / Dispensary Total		2		2					5		9
River Gee Total			26	9	39	11	9	6	8	26	64	198
Sinoe	Clinic	B.O.PC CLINIC			2	1	1				1	5
		BUTAW CLINIC		1	1		1		1		4	8
		CHEBIOH TOWN CLINIC			1	1	1		1	1	2	7
		DOODWICKEN CLINIC			1					1	5	7
		DRAPO CLINIC	1		1		1				3	6
		DUCORFREE CLINIC			1		1	1		1	4	8
		DYANKPO CLINIC	1		2						4	7
		EDWARD MEMD. CLINIC	1		1					1	4	7
		ENI CLINIC	1		1		1				3	6
		GBARTEKEN CLINIC					1			1	4	6
		GOVT,CAMP CLINIC	1		1				1	1	3	7
		JACKSONVILLE CLINIC	1		1		1			1	3	7
		JARPUKEN CLINIC	1		1		1			1	3	7
		JOKOKEN CLINIC	1		2		1			1	2	7
		JUARYEN CLINIC	1		1		1			1	2	6
		JUARZON CLINIC			3				1		1	5
		KARQUEKPO CLINIC	1		1		1			1	3	7
		KILO TOWN CLINIC			1		1			1	3	6

		KWITATUZON CLINIC		1		1		1		1				1	2	7
		LEXINGTON SEESEE CLINIC		2		1		1			1			1	2	8
		MEWEH WALKER CLINIC		1		1		1			1			1	3	8
		NYENNAWILKEN CLINIC						1			1				3	5
		PANAMA CLINIC		1		1		1			1			1	3	8
		PYNE TOWN CLINIC		1		1		1			1			1	4	9
		RTM CLINIC				1	1	1			1			1	3	8
		SAYWON TOWN CLINIC		1		1		1						1	3	7
		SRC CLINIC		1		1								1	4	7
		ST.JOSEPH CATHOLIC CLINIC				1								2	3	6
		TOE MEDICINE CLINIC		1												1
		TUBMANVILLE CLINIC SINOE			1	1		1			1				4	8
		TUZON CLINIC		1		1		1						1	2	6
		VOOGBADEE CLINIC		1		1		1						1	1	5
		WIAH TOWN CLINIC				2		1						1	2	6
	Clinic Total			21	2	36	3	25		2	11			25	93	218
	Hospital	F.J GRANTE HOSPITAL	1	22	6	27	3	10		9	5		2	10	72	167
	Hospital Total		1	22	6	27	3	10		9	5		2	10	72	167
	Pharmacy / Dispensary	BIG J MEDICINE STORE												1		1
		JULIE MEDICINE STORE				1										1
		KAMARA MEDICINE STORE												1		1
		UNCLE T MEDICINE STORE												1		1
		UNIQUE MEDICINE STORE												1		1
		W.V KESSELLE MEDICINE												1		1
	Pharmacy / Dispensary Total					1								5		6
Sinoe Total			1	43	8	64	6	35		11	16		2	40	165	391
Total			90	1393	412	1589	286	243	23	173	376	22	46	693	3207	8553

G.8 Number of HWs by stated education level per cadre

Table 36: Numbers of HW by stated education per cadre grouping and cadre detail

Cadre Grouping	Cadre	None	High School Diploma	High School drop-out	AA	College Diploma	BSc/BA	MSc/MA/MBA(or Masters)	MD	PhD	Vocational training	Others	Total
Physician	Physician		4			1	1	5	51	1		4	67
	Surgeon		2		1		1	1	16	1		1	23
Nurse	Graduated Nurse	1	20		25	14	51	2			7	9	129
	LPN(Licensed Practical Nurse)	3	144	2	13	9	9	2			44	29	255
	Nurse Anesthetist		21	1	5	7	7		1		9	4	55
	Nurse Midwife	3	22	1	5	7	8	1			6	13	66
	Registered Nurse	4	133	4	169	118	235	7			74	80	824
	Scrub Nurse		40	4	2	7	1				4	6	64
Certified Midwife	Certified Midwife	8	166	4	24	58	1				59	92	412
Nurse Aide	Nurse Aide	30	933	180	17	15					208	184	1567
Physician Assistant	Physician Assistant	4	70		22	87	20	1			29	53	286
Traditional Midwife	Traditional Midwife	30	6	5							3	6	50
	Trained Traditional Midwife	77	24	33							32	26	192
Dentist	Dental Surgeon		1			2			2			3	8
	Dentist	1	8		1			2				3	15
Environmental Health Technician	Environmental Health Technician	2	42	6	10	9	7	1	1		20	20	118
	Health Inspector		20	2	3	1	6				9	13	54
Lab technician / assistant	Lab Aide/Assistant	4	154	20	9	3					33	14	237
	Lab Technician		53	2	18	18	12	1			18	15	137
X-Ray Technician	X-Ray Technician		16		1	1						4	22
Pharmacist	Pharmacist		13	1		3	15	1			4	9	46
Other Health Cadres	Dispenser	7	316	60	9	4	8				70	31	505
	Physiotherapist		4			1	1						6
	Social Worker	6	82	12	14	5	23	3	1		16	20	182
Non-Clinical Health Workers	Accountant		15		11	4	40	5			2	11	88
	Cleaner	318	92	208	1						6	77	702
	Field Worker	8	44	40	3	3	2	1			11	15	127
	Non-Clinical Professional	158	410	232	51	28	144	16		1	95	140	1275
	Registrar	7	305	66	6	3	6				28	35	456
	Security	131	127	164	2	2					9	76	511
	Surveillance		20	3	1						2	2	28
Total		802	3307	1050	423	410	598	49	72	3	798	995	8507