Better Information, Better Planning, Better Health

JUL-DEC 2015

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Health Information Bulletin

Government of Sierra Leone
Ministry of Health and Sanitation

1. Introduction

The Ministry of Health and Sanitation produces health bulletins to update the public and development partners on how key health indicators perform within a specified period. This bulletin presents routine health data collected through the District Health Information Systems (DHIS2) as well as some programme data collected from individual programme databases. This edition of the bulletin covers the period July to December 2015 and presents data on Peripheral Health Units (PHUs). These are public health facilities below the hospital level, such as Maternal Child Health Posts, Community Health Posts and Community Health Clinics. The information is presented in seven sections: Section One discusses data collection and reporting rates while the second section covers maternal health services such as Ante Natal Care (ANC), deliveries and complications, causes of maternal deaths and distribution of insecticide treated bed nets (ITNs). Section Three presents child health services data which includes immunization, nutrition surveillance, deworming, malaria management and early initiation of breastfeeding. Section Four presents data on HIV testing and treatment. Section Five will present data on Tuberculosis and Leprosy case notifications, treatment success rates and TB/HIV coinfection while Section Six presents data on reproductive health focussing on Family Planning. The final section presents data on Community Health Workers (CHWs) focusing on why people take their children to CHWs.

1.1 Data Collection, Completeness and Quality

PHUs collect monthly data on: 1) morbidity, 2) children's preventive services, 3) reproductive health services, 4) stocks, 5) mortality, 6) community interventions, 7) semi-permanent data, and 8) HIV and TB/Leprosy. This data is tallied in summary forms and submitted to the DHMTs, where it is cleaned and entered into the DHIS 2 .

The national Monitoring and Evaluation department in the Directorate of Policy, Planning and Information (DPPI) collates, validates and analyses data to provide usable information to all stakeholders in the country. Other sources of health data are the individual health programme databases (Malaria, HIV,

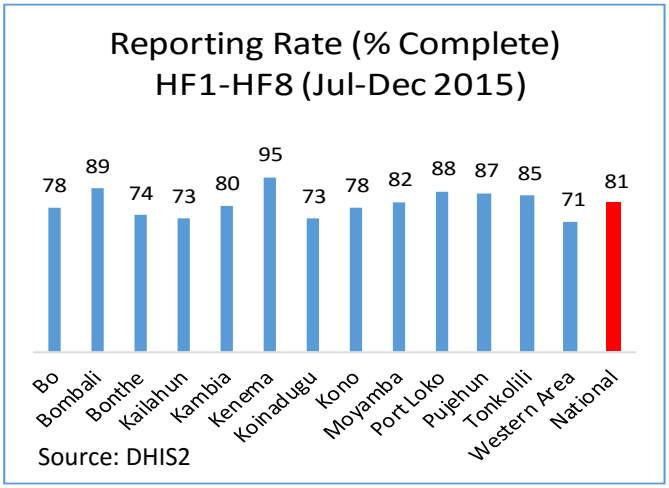
Nutrition, RMNCH and others). The HMIS unit of the DPPI has been making concerted efforts to improve the quality of data generated from the districts through the DHIS 2.

The Directorate is also working closely with the programmes and other Directorates to harmonise their data and integrate their databases into DHIS 2 as this will foster data consistency and accuracy. While this harmonisation is on-going, there is still some data that is more up-to-date in programme databases and as such this data has been presented in this bulletin where relevant

In an effort to improve data quality, DPPI supported by donor agencies and development partners has engaged the services of a number of technical experts to work on improving and updating the DHIS 2 system; review health facility data collection forms and harmonise data elements; define national indicators and compile a national data dictionary; and to integrate programme databases into DHIS 2. These activities are in progress and it is expected that when completed, there will be significant improvement in the quality of data generated through the DHIS2, thus increasing confidence of all users in the accuracy of routine health data.

The DHIS 2 is also able to track reporting from districts to determine the timeliness and completeness of reports on a monthly basis. During the period under review, (Jul-Dec 2015), the overall reporting rate was 81%. This is a remarkable improvement when compared to the Jan-Jun 2015 data where only 70% was captured. Surprisingly, Kenema District which scored the lowest (24%) in the first half of the year now tops the table with 95% reporting rate. In the previous half (Jan-Jun) Pujehun had the second least reporting rate (43%) but has also improved tremendously to 87%. The districts with the lowest reporting rates are Western Area (71%), Kailahun (73%) and Koinadugu (73%). Incidentally, Kailahun district recorded the highest reporting rate in the first half (Jan-Jun 2015) but has dropped to the bottom. It must however be noted that there were inconsistencies in the data housed within the HIS and there were a few notable data quality issues with the data analysed for this bulletin. Figure 1 below presents reporting rates by district (Jul-Dec 2015)

Figure 1: Reporting Rates by District (Jul-Dec 2015)



Maternal Health Services

For a child to be born, grow and survive depends largely on the health care services the mother receives during pregnancy, at birth and after birth. In April 2011, the Government of Sierra Leone introduced the Free Health Care Initiative (FHCI) primarily to reduce the high incidence of infant and maternal morbidity and mortality.

In this direction, the Ministry introduced several measures to improve the quality and quantity of maternal health care services delivered across the nation. Among these are: improving and increasing facility deliveries and making health services free to all under-fives children, pregnant and lactating mothers.

This section examines three tracer indicators that track the status of Maternal Health Services: Antenatal Care Attendance, Deliveries and Complications, and Distribution of Insecticide Treated Mosquito Nets.

2.1 Ante Natal Care (ANC) Attendance

Antenatal clinic is attended by pregnant mothers to seek needed health services including advice on prevention and treatment of malaria, sexually transmitted infections (STI), including HIV/AIDS, tetanus immunization family planning. ANC caregivers advise pregnant mothers to make a minimum of four ANC visits to help identify potential pregnancy and delivery complications. This is done so that possible pregnancy or delivery related issues will be spotted early on and appropriate measures taken to prevent or minimise their negative effect on the mother or child, to achieve safe delivery.

Between first and fourth visits, programme data indicates that there was an overall dropout rate of 19.9%. This is an improvement to the first half of the same year which recorded 29% dropout rate. It could be that because Ebola was already receding during the second half, pregnant mothers were beginning to regain confidence in the health facility staff. Kailahun recorded the least dropout rate although this data could be questioned as there were more fourth visits than first visits. Bo recorded the second least while Bonthe and Kono recorded the highest dropout rates of 36.1 and 35.3% respectively. See Figure 2 for ANC attendance by district (Jul-Dec 2015).

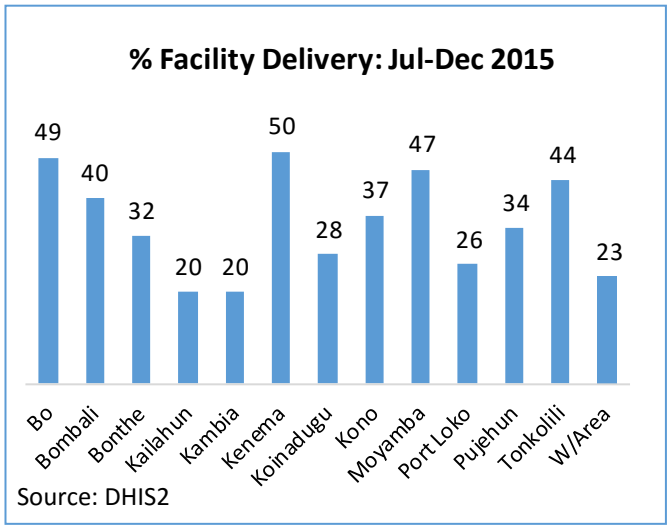
Figure 2: ANC Attendance by district (Jul-Dec 2015)

Figure 2: ANC—First and Fourth Visits (JULY-DECEMBER 2015)			
DISTRICT	ANC 1st Visit	ANC 4th visit	% Dropout
Bo	11583	11254	2.8
Bombali	9203	8025	12.8
Bonthe	3824	2442	36.1
Kailahun	7828	7833	-0.1
Kambia	7638	4945	35.3
Kenema	12913	10744	16.8
Koinadugu	7840	5748	26.7
Kono	6439	4140	35.7
Moyamba	8127	7215	11.2
Port Loko	13341	9979	25.2
Pujehun	6509	5456	16.2
Tonkolili	14570	11465	21.3
Western Area	22477	16669	25.8
National	**132292**	**105915**	**19.9**
Source: EPI Programme data			

2.2 Deliveries and Complications

When a delivery is properly managed it greatly improves outcomes for mother and child's survival. For July to December 2015, data shows that 34.7% of women delivered their babies at a PHU. Compared to the figures in the first half of the same year (27.7%) this is an improvement. It could be that within this period communities were now beginning to regain trust in the health facilities as Ebola was being increasingly contained. Kenema (50.3%), and Bo districts (49.2%) recorded the highest percentage of facility deliveries while Kailahun (20.0%) and Kambia (20.1%) recorded the least. See Figure 3 for proportion of facility delivery by district.

Figure 3: Facility Delivery by district (Jul-Dec 2015)

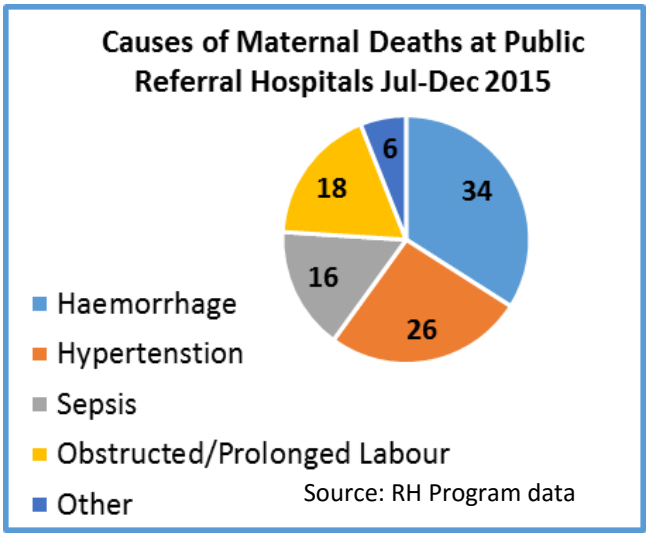


For the period under review (Jul-Dec 2015), there were a total of 192,668 delivery complications. Nationally, 1.8% of these (3276) were referred for secondary level care due to complications. This figure is slightly higher than the first half of the same year where about 1.5% were referred. Bombali (2.6%) and Bonthe (2.3%) districts had the highest percentage of referrals. Kambia (0.7%) and Tonkolili, (1.0%) had the lowest. See Figure 4 for delivery complications referred.

Figure 4: Complications Referred (Jul-Dec 2015)			
District	Total Complications	Maternal Complications Cases Referred	% Referred
Bo	14952	280	1.9
Bombali	15414	395	2.6
Bonthe	4789	111	2.3
Kailahun	9494	148	1.6
Kambia	7550	52	0.7
Kenema	16459	282	1.7
Koinadugu	11322	181	1.6
Kono	12311	173	1.4
Moyamba	6129	84	1.4
Port Loko	19407	292	1.5
Pujehun	6190	245	4.0
Tonkolili	29546	302	1.0
Wstn Area	39105	731	1.9
National	192668	3276	1.8
Source: DHIS2			

Among the major complications leading to maternal death are hypertension, haemorrhage, sepsis and obstructed/prolonged labour. Data collected between July and December 2015 showed that 34% of all maternal deaths at public referral hospitals were caused by haemorrhage, while 26% were caused by hypertension. See Figure 5 for data on causes of maternal deaths at public hospitals.

Figure 5: Causes of Maternal Deaths Jul-Dec 2015



2.3 Distribution of Insecticide Treated Bed Nets (ITNs)

Insecticide Treated Nets (ITNs) are one of the preventive interventions aimed at controlling malaria. ITNs are mostly distributed to women during pregnancy (ANC) and at birth to prevent both mother and child from contracting the disease.

Nationally, during the period under review, 127,911 ITNs were distributed among women during their ANC visits and at delivery. Pregnant women in Western Area received the highest number of ITNs (18,458) while Bonthe received 3,341. Please note that these are absolute figures and are not calculated proportionally. Figure 6 shows the number of ITNs distributed by district.

Figure 6: Number ITNs Distributed by District (Jul-Dec 2016)			
District	No. of LLITN given at Delivery	LLITN given at ANC (PHU)	Total
Bo	231	11347	11578
Bombali	349	8571	8920
Bonthe	27	3314	3341
Kailahun	356	6565	6921
Kambia	328	6404	6732
Kenema	3407	11789	15196
Koinadugu	284	7372	7656
Kono	1195	5711	6906
Moyamba	1356	7458	8814
Port Loko	1870	12174	14044
Pujehun	190	6060	6250
Tonkolili	124	12971	13095
Western Area	1073	17385	18458
Total	10790	117121	127911
Source: DHIS2			

3.0 Child Health Services

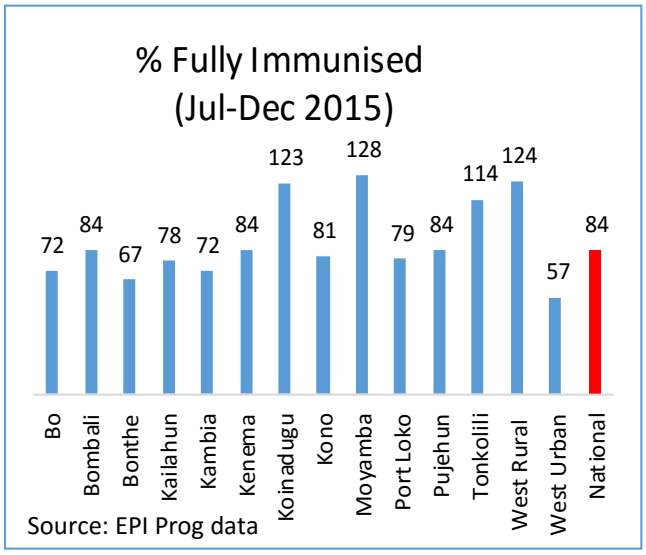
There are several aspects to child health services but this bulletin will focus mainly on indicators tracking immunisation, nutrition and malaria management.

3.1 Immunisation Coverage

A fully immunised child (FIC) is one that has the correct and timely doses of BCG, OPV0, Penta 1, OPV1, Rota 1, Penta 2, OPV2, Rota 2, Penta 3, OPV3, Measles and Yellow Fever. Nationally, over 8 in 10 children were immunised (84%) within the second half of 2015. Moyamba district recorded the highest (128%) immunisation rate while Western Urban recorded the least (57%). These figures may be misleading as some districts including Tonkolili, Moyamba, Koinadugu and western rural recorded in excess of 100% each.

Although there is generally a marked improvement in FIC, these excess figures should be of concern to the monitoring units at both national and programme levels. Please see Figure 7 for proportion of fully immunised children.

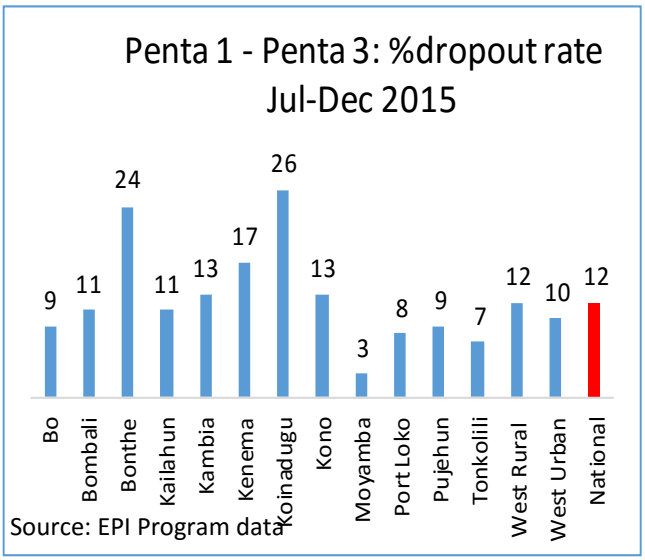
Figure 7: Fully Immunised—FIC (Jul to Dec 2015)



3.2 Penta 1 –3 Dropout

Mothers are advised to ensure that their children take at least the first three Penta vaccines to protect the children against diseases. Some mothers , for some reasons, do not take all the Penta vaccines. Koinadugu (26%) recorded the highest dropout rate between Penta 1 and Penta 3 while Moyamba reported the least dropout rate of 3%. The national dropout rate is 12%. There is notable incongruence between FIC and Penta 1-3 dropout rate for some districts that the programme could not explain. See Figure 8 for Penta 1-Penta 3 dropout rate

Figure 8: Penta 1-Penta 3 Dropout Rate



3.3 Malaria Management

Malaria-, the leading cause of under-five mortality, accounts for over 30% of under-fives mortality in the country. Sierra Leone's Health Ministry and Sanitation recommends ACT as a treatment for malaria. For the period under review, 487,348 under-fives were tested and confirmed positive for malaria, while 259, 307 people above five years were tested and confirmed malaria positive. During the period under review, Bo district recorded the highest number of confirmed cases in under-fives (58,563) and the highest number of malaria cases above five years (36,923). Bonthe recorded the lowest number with 15,046 confirmed cases in under-fives while Kambia District recorded the lowest number of confirmed malaria cases above five years (8,894).

A total of 494,102 under-fives and 281,861 individuals above five years of age were treated for malaria (whether tested or suspected) at PHU level with

ACT in the country during the period under review.

Bo district recorded the highest ACT uptake for under-fives (58,728), while Bonthe accounted for the lowest ACT uptake among children under five, (15,621). Bo recorded the highest ACT uptake for individuals above five years of age (37,177) while Kambia recorded the lowest at 10518. See Figure 9 for confirmed and treated malaria cases.

Figure 9: Malaria Confirmed and treated with ACT (Jul-Dec 2015)

	Total Confirmed (July -December - 2015)		Total Treated (July -December - 2015)	
District	Under Five Years	Five Years & above	Under Five Years	Five Years & above
Bo	58563	36923	58728	37177
Bombali	56052	31836	56237	32325
Bonthe	15046	10285	15621	11227
Kailahun	29343	16035	29442	17116
Kambia	28032	8894	27356	10518
Kenema	55763	28529	58368	29051
Koinadugu	27338	17203	33191	16789
Kono	26149	12462	25867	12617
Moyamba	36366	13128	36091	12331
Port Loko	43297	18415	43463	23761
Pujehun	19406	12338	19163	12143
Tonkolili	54974	26477	53580	35443
Western Area	37019	26782	36995	31363
National	**487348**	**259307**	**494102**	**281861**

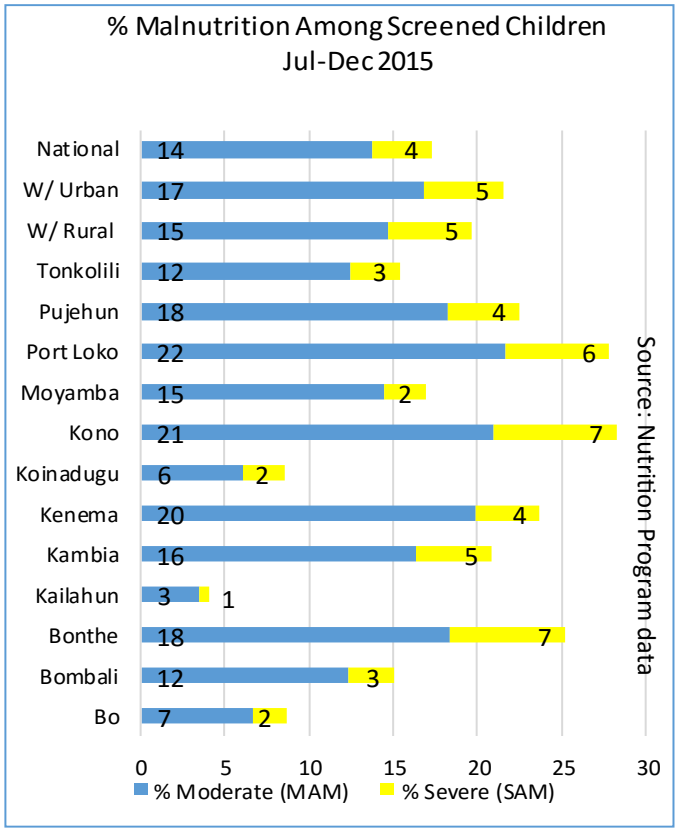
Source: Malaria Control Programme Data

3.4 Nutrition: Growth Monitoring

Malnutrition has remained a major health issue affecting child survival and development in the country. Data collected on malnutrition at PHUs tracks both moderate and severe malnutrition. One in four under-fives deaths among children are caused by malnutrition. Programme data shows that out of the children screened 3.5% of the under-fives were severely malnourished while 13.8% were moderately malnourished. Kono District recorded the highest malnutrition rate with 7.2% followed by Port Loko District with 6.3% of the children screened severely malnourished. Kailahun reported the lowest rates of severe malnutrition at 0.6%, followed by Bo district at 2.0%.

There seems to be a slight improvement in the nutritional status of children compared to the first half of the year which recorded 4% of severe malnutrition. Figure 10 represents malnutrition data reflecting percentages of moderate and severe malnutrition.

Figure 10: Growth Monitoring (Jul-Dec 2015)

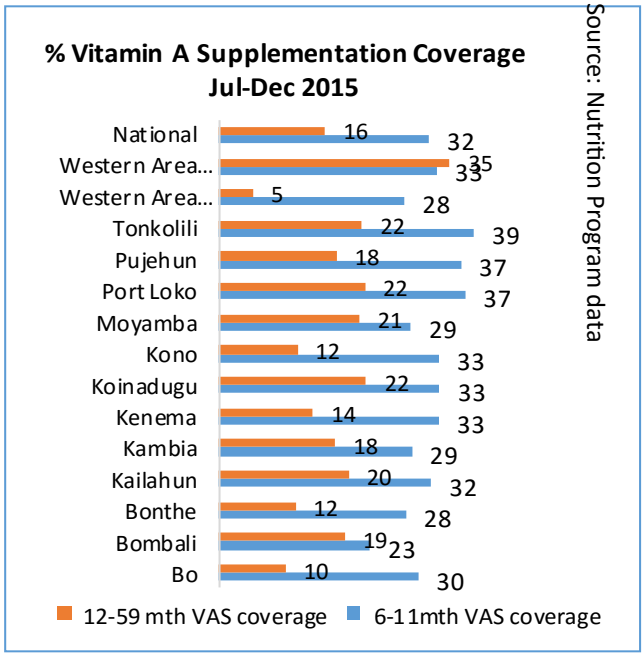


3.5 Vitamin A Supplementation

Some children suffer childhood illness such acute diarrhoea, ARI, skin conditions and preventable blindness because of Vitamin A deficiency. Vitamin A deficiency can potentially increase morbidity and mortality resulting from diarrhoeal diseases and measles. Vitamin A supplementation for under-fives is associated with a reduced risk of all-cause mortality and the reduced incidence of diarrhoea. VAS helps strengthen the immune system and increases resistance to diseases like diarrhoea and measles.

Nationally, routine Vitamin A supplementation coverage for children 6-11months was 32% whilst the VAS coverage for children 12-59months was 15%. . For children between 6 and 11 months, Tonkolili District had the highest routine VAS coverage of 39% followed by Port Loko and Pujehun districts with 37% each. Among the 12-59 month children, Western Urban reported the highest coverage of routine VAS (35%) followed by Koinadugu (22.3%). The least routine VAS coverage for 6-11 months was reported by Bombali while Western Urban reported the least for 12-59 months (5.2%). The above shows that routine VAS coverage is generally much lower than desired (97%) and as such there is a great need for increased national focus on increasing routine VAS uptake. Routine VAS uptake is much lower than the mass supplementation conducted twice yearly with 96% coverage. See Figure 11 for % VAS coverage

Figure 11: % VAS Coverage: Jul-Dec 2015

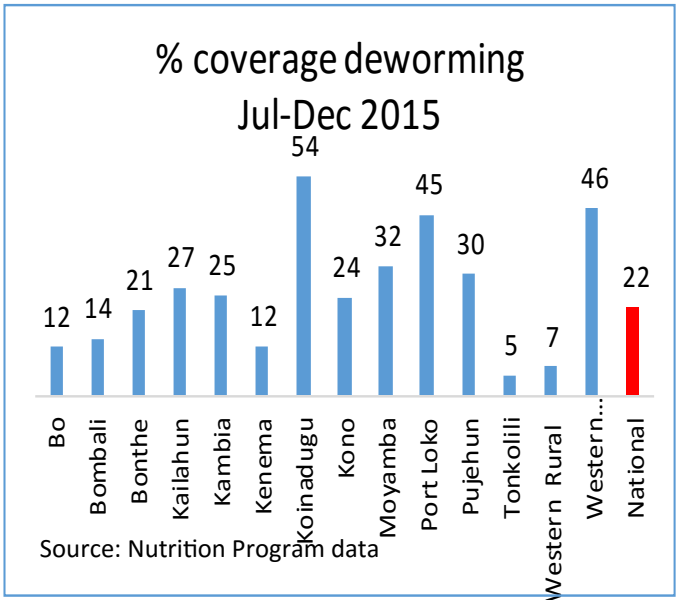


3.6 Deworming (12-59 Months)

Worm infestation is a contributor to infant mortality and morbidity as it could cause cognitive impairment, tissue damage, diarrhoea and anaemia, resulting from internal bleeding.

Nationally, about 22% of children 12-59 months were dewormed routinely during the period under review. Koinadugu and Western Urban recorded the highest deworming rate with 54 and 46% respectively. Tonkolili and Western Rural reported the least deworming rate with 5 and 7% respectively. See Figure 12 for deworming proportion by District

Figure 12: % Deworming: Jul-Dec 2015

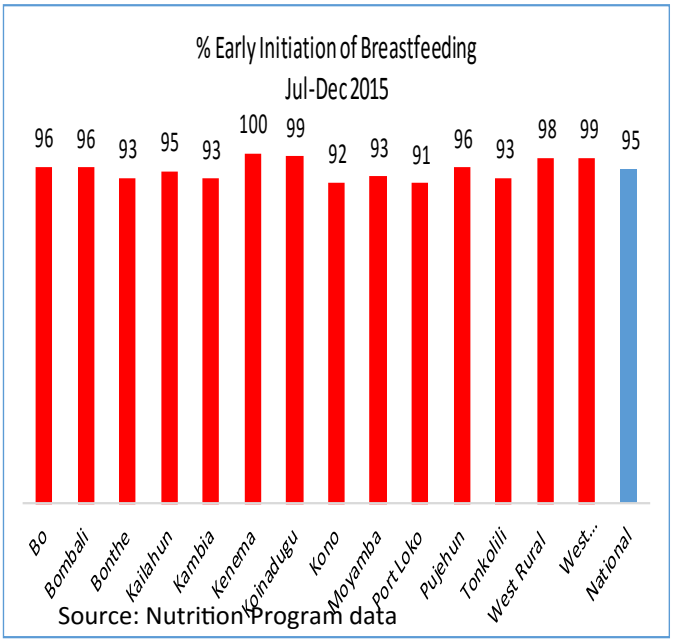


3.7 Early Initiation of Breastfeeding

It is recommended that mothers breastfeed their children exclusively for at least the first six months starting within the first hour of birth. Exclusive breastfeeding is crucial for children's growth and development. The Food and Nutrition Directorate used to analyse exclusive breastfeeding data but due to data reliability issues it was stopped, as exclusive breastfeeding for six months can only be self-reported. Now only data for early initiation of breastfeeding is captured.

Programme data shows that there is huge adherence to early initiation of breastfeeding as the country records 95% adherence. Kenema topped the list by recording a hundred per cent of early initiation followed by Koinadugu and Western Urban with 99% each. Port Loko recorded the least with 91% followed by Kono district with 92%. See figure 13 for proportion of early initiation of breastfeeding by district for July to December 2015.

Figure 13: Breastfed in First Hour (Jul-Dec 2015)



Source: Nutrition Program data

4.0 HIV Testing and Treatment

But for the Ebola Virus Disease, HIV/AIDS has been the disease with the most stigma in the country for years. This stigma, coupled with the knowledge that there is no cure for the disease, are among the reasons why people hardly opt for voluntary test. HIV remains a major public health challenge in most parts of Africa, Sierra Leone being no exception.

Stigma and discrimination is still rife in many parts of the country and continue to act as a deterrent to people accessing care. This section focuses on HIV testing and treatment, tracking the number of people tested and receiving results . Figure 15 indicates that out of a total number of 230,544 people tested across the country pregnant women accounted for 0.55% positive cases while children accounted for 0.02 %. From this total number tested 1.71% of the general population (barring children and pregnant women) tested positive for HIV. It is critical to note that these figures are not indicating HIV prevalence in the country or respective districts, rather it shows the proportion of HIV infection among those tested. Western Area District recorded the highest infection rates among those tested. See figure 14 for HIV Tested and infection rates among those tested in Jul -Dec 2015.

Figure 14: HIV Tests and Positive Results (Jul-Dec 2015)

	Total Number Tested	% General Population +ve	% Pregnant Women +ve	% Children +ve
Bo	15279	1.85	0.48	0.03
Bombali	34788	0.97	0.18	0.01
Bonthe	6320	0.47	0.06	0.00
Kailahun	6279	0.75	0.22	0.00
Kambia	11786	0.60	0.56	0.03
Kenema	21339	0.80	0.38	0.00
Koinadugu	10303	0.52	0.22	0.00
Kono	10510	1.68	0.49	0.00
Moyamba	5502	1.16	0.44	0.00
Port Loko	16468	1.22	0.49	0.02
Pujehun	5691	0.23	0.30	0.00
Tonkolili	21668	0.50	0.35	0.00
West Rural	14070	2.30	1.17	0.01
West Urban	50541	4.06	1.06	0.04
National	230544	1.71	0.55	0.02

Source: HIV Programme data

5.0 Tuberculosis and Leprosy Case Notifications

Tuberculosis and leprosy are two of the oldest infectious diseases. TB is primarily an airborne disease that is transmitted in very tiny microscopic droplets when the sufferer coughs, sneezes, spits, sings or laughs. When a few of the infected person's germs are inhaled by another person the latter becomes more vulnerable.

Leprosy on the other hand is contracted through contacting an infected person's nasal secretions or respiratory route. It is however not as contagious as other infectious diseases like tuberculosis and Ebola. Men are more prone to contracting leprosy than women, in most countries (WHO).

In Sierra Leone (Jul-Dec 2015) there were 6,317 TB cases notified with Western Urban (2,311) followed by Western Rural (540) recording the highest. Bonthe (85) and Pujehun (101) recorded the lowest TB case notifications.

Nationally, there were 82 leprosy cases notified within this period with Tonkolili (15) recording the highest followed by Kono (9). Western Rural (0) and Pujehun (1) recorded the lowest. See figure 15 for TB Leprosy case notifications, Jul-Dec 2015. Leprosy and TB are treated for free in Sierra Leone.

Figure 15: TB and Leprosy Case Notification: Jul-Dec 2015

District	No of TB Cases Notified	No. of Leprosy Cases Notified
Bo	595	5
Bombali	526	8
Bonthe	85	4
Kailahun	118	6
Kambia	233	7
Kenema	479	5
Koinadugu	156	6
Kono	212	9
Moyamba	115	4
Port Loko	450	7
Pujehun	101	1
Tonkolili	396	15
Western Rural	540	0
Western Urban	2311	5
National	6317	82

Source: NLTC Programme data

5.1 HIV/TB Coinfection

HIV and TB co-infection is tracked by the HIV and TB programmes in an effort to reduce morbidity and maintain TB control. Both HIV and Tuberculosis attack and weaken the immune system, hence make patients prone to other diseases. HIV/TB coinfection is not uncommon and therefore people with either of the conditions will be constantly monitored for coinfection. Unlike HIV though, tuberculosis is curable—and treatment is free for both.

Data collected during the period under review (Jul-Dec 2015) shows that of the 1726 PLHIVs tested for TB infection, 243 (14.1%) were proved TB positive. Of this number, Western Urban which tested 905 patients, 159 (17.6%) were positive, accounting for the highest. The rates are not TB/HIV prevalence but calculated from the numbers tested. See Figure 16 for HIV/TB coinfection rate

Figure 16 HIV/TB Coinfection (Jul-Dec 2015)

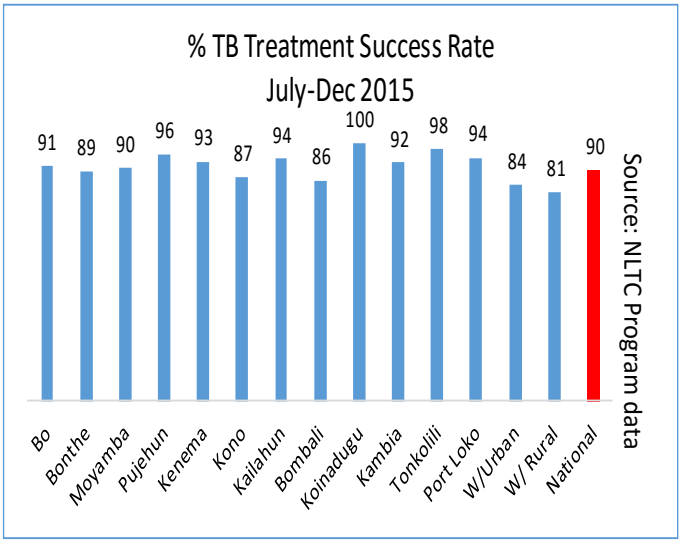
District	Total No. Positive	Total No. on Treatment	No.of PLHIVs Tested for TB (Sputum/ Xray)	No. of PLHIVs with a positive TB result
Bo	361	706	61	12
Bombali	403	1019	118	6
Bonthe	34	195	0	0
Kailahun	61	276	30	1
Kambia	140	681	37	2
Kenema	254	1017	101	9
Koinadugu	77	325	2	0
Kono	228	260	104	7
Moyamba	88	188	43	4
Port Loko	285	492	86	12
Pujehun	30	210	8	2
Tonkolili	185	335	74	7
W. Rural	490	997	157	22
W. Urban	2604	5909	905	159
National	**5240**	**12610**	**1726**	**243**

Source: HIV Programme Data

5.2 Tuberculosis Treatment Success Rate

With appropriate and prompt antibiotic treatment, tuberculosis is mostly curable. In Sierra Leone, TB treatment is provided free of charge. Patients however, need to undergo a long course of antibiotic treatment to achieve a cure. There is also the growing problem of multi-drug resistant TB, which makes it imperative to properly monitor patients on treatment and track treatment success. During the period under review, a 90% treatment success rate was reported nationally, with Koinadugu district recording the highest success rate at 100% and Western-rural district reporting the lowest success rate (81%). See Figure 17 for % TB treatment success rate across all the districts (Jul-Dec 2015).

Figure 17: % TB TSR (Jul-Dec 2015)



6.0 Family Planning

Controlling how many children to have and how to space them is Family Planning. This could improve families' standards of living and reduce the risk of unwanted pregnancies and the resultant abortions, sometimes unsafe.

Family planning could improve maternal mortality rate, as the practice helps to avoid some pregnancy related complications and some planning methods could even reduce the risk of contracting infectious diseases like STIs.

The country records 1, 374, 699 FP clients on various family planning methods. Among these, Western Area (urban and rural combined) accounts for the highest with 1,041,723 clients whilst Bonthe District records the least—9,245 clients. See figure 18 for number of family planning clients, Jul-Dec 2015.

Figure 18: Number of Family Planning Clients (Jul-Dec 2015)

District	No. of Family Planning Clients
Bo	32, 213
Bombali	29, 508
Bonthe	9, 245
Kenema	37, 599
Kambia	15, 084
Kailahun	22, 525
Kono	19, 233
Koinadugu	21, 877
Moyamba	57, 575
Port Loko	29, 703
Pujehun	25, 073
Tonkolili	33, 311
Western Area	1, 041, 723
Sierra Leone	1, 374, 669

Source: DHIS2

7.0 Role of Community Health Workers (CHWs)

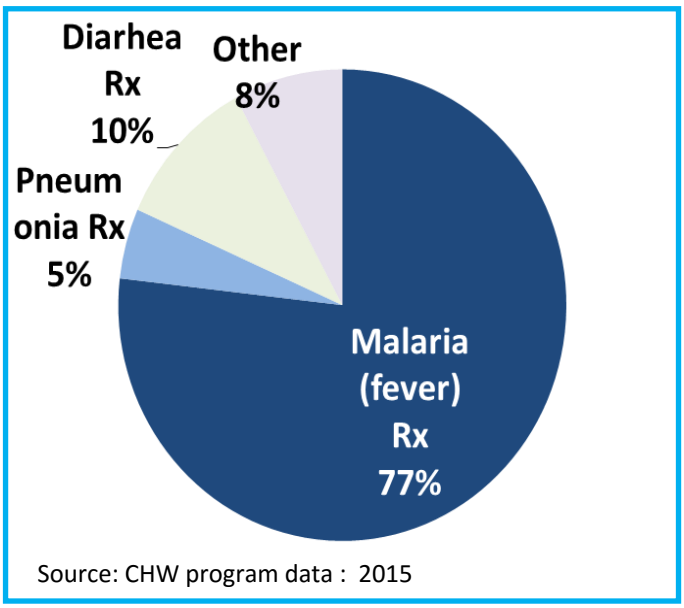
Community Health Workers were drafted into the mainstream health delivery system in 2012 but were largely volunteers and their use was not sustained. It was revitalised in 2015 after an eye opening realisation of the use of community structures in health care, exposed by the effectiveness of social mobilisation in the fight against EVD, where CHWs played a vital role.

The key achievements of the CHW programme are their contribution to the reduction of infant and maternal mortality by doing early referrals and treating minor illnesses, and home visits to promote antenatal and postnatal visits and facility deliveries. In 2015, CHWs provided health promotion messages related to antenatal care to nearly 90,000 pregnant women and related to postnatal care to nearly 71,000 women. Data shows that 77% of children seen by CHWs have malaria (or related illness) followed by diarrhoea (10%)—see figure 19. CHWs referred to PHU or treated over 410,000 children who were ill.

As the CHW policy is being reviewed, some of the key additions are: Community Based Surveillance, Infection Prevention and Control, and an emphasis on Family Planning, dealing only with pills and condoms.

Their key challenges are: lack of robust supervision, commodity stock out, and adequate training.

Figure 19: Why People take children to CHWs?



8.0 Ebola Vaccine Impact Depends on a Strong Health System

By: Dr SAS Kargbo (October 2015)

As a medical doctor responsible for the health of mothers and children in the nation of Sierra Leone, there is one job I never expected to have: chief undertaker.

For five months last year, I led the national team responsible for the safe burials of victims of Ebola, which was being transmitted as family members cared for the sick or grieved the dead. At the height of the epidemic, about one hundred people a week succumbed to the disease and it was hard to see the future or remember the past.

Fast forward 15 months. The first week of October marked the third consecutive week in Sierra Leone with no confirmed cases and all contacts of people previously diagnosed with Ebola have cleared as disease free. However, the risk of new cases remains, particularly in Guinea, where public health workers are following 509 contacts.

Meanwhile, the clinical trial of a promising new Ebola vaccine, rVSV-ZEBOV, has been underway in the three most affected countries of Guinea, Liberia and Sierra Leone. It offers the vaccine to all contacts and contacts of contacts — associated with confirmed cases. Interim results of the trial had already indicated the vaccine was 100 percent effective in preventing Ebola disease.

Although the data is still preliminary, it grows stronger by the day and offers what seemed like impossible hope just six months ago. A safe, effective vaccine will be an invaluable tool to combat Ebola wherever and whenever it emerges next.

But even once a vaccine is approved for widespread use, it will be no silver bullet. The gaps in our health care system that allowed Ebola to advance so quickly must be filled if this new vaccine — or any vaccines — are to realize their life-saving potential.

When Ebola hit Sierra Leone, we had fewer than 500 doctors for a population of 6 million. We had five ambulances, and 16 specialized obstetric care centres for the whole country. Perhaps most telling, life expectancy at birth was a mere 45 years, a number brought down by high rates of maternal and infant mortality.

But when Ebola hit, we also had vision of a better health system. In 2010, President Ernest Koroma and the government had put in place a health care initiative that provided free treatment and medicine to pregnant women, lactating mothers and children under the age of 5. Alongside this initiative, doctors and nurses received a pay rise from 200 to 400 percent.

We had begun to experience the benefits of these monumental reforms. In one district, the number of births in the local health facility rose from 197 in 2010 to 468 in 2013. The number of new mothers bringing in their infants for follow-up care tripled. This meant the babies were being immunized. They were receiving lifesaving vaccines that protect against diarrhoea, pneumonia, tuberculosis, polio and other diseases. Our national coverage rate for measles reached 99 percent — second to none. We were on the road to better health for all our citizens, starting with mothers and children.

Ebola set back the clock. A total of 304 health workers became infected with the disease and the country also lost 11 physicians and 221 nurses and nurse aides to the virus.

Nearly every resource at our disposal became focused against this new threat. Vaccination campaigns were suspended, as they required large numbers of people to congregate, raising the specter of contagion. Within months, the vaccination rate for measles dropped to 76 percent.

The cost of Ebola was mothers who died in childbirth, falling vaccination rates, and the emergence of old diseases — including outbreaks of measles in all three West African countries most affected by Ebola. To date, an estimated 600,000 children have missed out on routine immunization services in the three countries.

Equally troubling has been the loss of trust by our citizens in our health care centers and health care providers. Expectant mothers and others did all they could to avoid health care facilities, regardless of whether or not they were designated Ebola treatment centers.

Thankfully, this has begun to change, and as we work to repair the loss in trust, we must reprioritize the vaccination of infants and children against preventable diseases. Vaccines are one of the best weapons we have against infectious diseases, and one of the surest ways to lower the rate of infant and child mortality.

In the aftermath of the Ebola crisis, we are rebuilding our health system — giving us the opportunity to do things better than before. This means taking stock of the weak points that still exist in our vaccine delivery and public health systems, and fixing them.

We need good roads that reach all 1,300 of our peripheral health units, the "last-mile" outposts that provide primary medical care to remote rural communities. We need stronger cold chains and refrigeration systems to keep vaccines and medicines stable. An improved cold chain will be essential for the new Ebola vaccine. In its current formulation, the vaccine must be kept at -60 degrees Celsius, a temperature so low it must be shipped with dry ice. We need hundreds of new health workers trained, at every level of the medical system.

Other changes would also help. One simple example is vaccine packaging. Most standard childhood vaccines come in 10-dose packages. Rather than open a full 10-pack, health workers often tell parents and children to go home and come back when demand is higher, to ensure no vaccines are wasted.

Looked at one way, it might be cheaper to deliver vaccines in 10 vial packages, rather than as single doses, especially when there is a weak cold chain. Yet, what are the costs of disease treatment and of lives lost for parents and children who are sent home unvaccinated?

A commitment to childhood vaccination means, at its core, a commitment to rebuilding our health system with attention to both the big picture and the details that make quality health care available to every individual.

Especially now, when we are recovering from our most vulnerable state, we need to look closely at how to practically meet our basic health needs. As we continue the fight against Ebola, we must effectively use the vaccines we already have in hand, and ensure the survival of our youngest, most vulnerable children.

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Please help us improve future editions by sending your comments and suggestions to:

1. Edward Foday
DPPI, MOHS
Youyi Building, Fifth Floor, East Wing
efoday@health.gov.sl
+23278366493

2. Wogba Kamara
DPPI, MOHS
Youyi Building, Fifth Floor, East Wing
wogbaepkamara@gmail.com
+23276 734513

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