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Health Impacts of the Living Conditions of People Residing in Informal Settlements in Freetown

Report on the Future Health Systems (FHS) Research in Freetown



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2018 by Sierra Leone Urban Research Centre (SLURC)

Printed and published by the Sierra Leone Urban Research Centre, December 2018

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Please cite as follows: Macarthy, J.M., Conteh, A., Sellu, S.A., Heinrich, L., 2018. 'Health Impacts of the Living Conditions of People Residing in Informal Settlements in Freetown'. SLURC Publication.

The manuscript was edited by Annie Wilkinson and Daniela Rodriguez
Design and typesetting by Thomas Doughty

Photo Credit: Sudie Austina Sellu

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ISBN: 978-0-9956342-3-7
Publication Stock No: 004

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List of Acronyms

ACF	Action Contre La Faim
ANC	Antenatal Care
CBO	Community Based Organization
CHW	Community Health Worker
CHMC	Community Health Management Committee
DHIS2	District Health Information System 2
EIDSR	Electronic Integrated Disease Surveillance and Reporting
EPI	Expanded Programme on Immunization
EVD	Ebola Virus Disease
FCC	Freetown City Council
FGD	Focus Group Discussion
GVWC	Guma Valley Water Company
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
IDI	Individual Interview
MLH&E	Ministry of Lands, Housing and the Environment
MoHS	Ministry of Health and Sanitation
MoWR	Ministry of Water Resources
MSWGCA	Ministry of Social Welfare Gender and Children's Affairs
NGO	Non-Governmental Organization
PCNH	Princess Christian Maternity Hospital
PHC	Peripheral Health Centre
PI	Principal Investigator
RGH	Rokupa Government Hospital
SLURC	Sierra Leone Urban Research Centre
TB	Tuberculosis
TBA	Traditional Birth Attendant
UN-Habitat	United Nations Human Settlement Programme
UNICEF	United Nations International Children's Emergency Fund
WHO	World Health Organization
YMCA	Young Men's Christian Association

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Executive Summary

The rapid pace of urbanisation in most countries in Africa makes urban environments a major determinant of population health. In Freetown, urban growth is associated with the proliferation of informal settlements/slums owing largely to the prevalent poverty, overcrowded and filthy living conditions. Therefore, health outcomes are generally worse with intermittent disease outbreaks which can sometimes spread beyond a single neighbourhood to overwhelm the entire city. But, while a number of studies have documented evidences on the urban health situation in Freetown, such studies have not sufficiently explained the specific and community-wide health risks that people in each informal settlement are faced with. The study describes the living conditions in informal settlements, and explore how these relate to the health of people living there, as told and understood by the residents themselves and as reported in routine statistics.

The study was based on the mixed methods approach (qualitative and quantitative) in four informal settlements in Freetown – Cockle Bay, Portee-Rokupa, Dwarzack and Moyiba - to explore the links between human health and the living conditions in informal settlement. We conducted 8 FGDs with community members and 35 IDIs with policy makers, community leaders (e.g. chiefs, CBO leads), civic leaders (e.g. city council representatives), traditional birth attendants, traditional healers and health facility providers (e.g. nurses, community health workers). This also involved investigating secondary data (DHIS2) for patterns of service utilization at local Freetown health facilities. Following the preparation of the draft report, opportunities were created to discuss and validate the research findings.

The key findings were that the living condition of precarious informal settlements in Freetown is generally appalling. In Freetown human health in informal settlements is influenced by a range of factors. These same factors condition the living environment which is mediated by the geographic location of settlements and the constraint posed by the topography. The factors include toilets, water, waste, housing, energy, and livelihoods. The most common toilet in all the case study areas was the pit toilet which was observed to be generally poor. Hanging toilets which are generally makeshift (made from sticks and empty sack) are more common in Cockle Bay, Portee-Rokupa and some parts of Dwarzack. There are also shared toilets and a few public toilets which are mostly makeshift. There are a variety of water sources in the communities. These include water wells, running stream, underground sources and taps. However, most communities have difficulty accessing water. Water access was observed to differ widely among residents based on where they live with the low-lying precarious areas of Portee-Rokupa and the hillside areas of Dwarzack and Moyiba suffering the most. In both Cockle Bay and Portee-Rokupa, water from water wells is somehow salty but this does not deter residents from using it for bathing, laundry and cooking.

There is no specified waste deposition site in any of the communities so, waste is deposited almost anywhere. Waste irresponsibly disposed can be washed into gutters which causes blockages thereby leading to flooding and the littering of trash in the street. It can also cause the proliferation of mosquitoes. In Cockle Bay and Portee-Rokupa, waste is used for 'banking' specifically to reclaim land for housing development. However, some can be flushed out into the sea by tidal waters.

The study areas have different housing types consisting of brick, mud and panbody houses. Brick houses are generally fewer with more panbody houses in Portee-Rokupa and more mud houses in Dwarzack and Moyiba. Both houses (panbody and mud) are mostly made of local materials and so, they are not strong. Moreover, they are mostly built in unstable areas prone to hazard risks. Overcrowding in houses is a major problem coupled with risks of eviction owing to the prevalent tenure insecurity. The different energy sources and the diverse livelihood activities of people were also observed to affect the health of residents. However, these activities differed according to the topography of settlement with fishing and stone mining being the main activity in Portee-Rokupa and Moyiba respectively.

Apart from conditioning the living environment, all six factors were found to be associated with the health conditions faced by people living in the study area. In particular, poor toilet conditions and the improper disposal of faeces causes not only the proliferation of flies which contaminate food and drinking water but also the breeding of mosquitoes which results in the frequent spread of malaria. This makes sanitation a major problem in all four communities. Other health conditions reported by respondents include cholera, dysentery, typhoid and skin rashes which is linked with either drinking or washing with contaminated water. Contamination of water in homes is worsened by infiltrations of damaged water pipes which are passed through drainages where open defecation takes place. There are also perceived risks of getting illnesses from toilet sharing. Health conditions such as malaria, typhoid, cholera and diarrhoea are also associated with poor waste disposal systems and the clogging of drainages which allows mosquitoes to breed. Irritations allergy and other respiratory illnesses are caused by mould growth in damp buildings while overcrowding is linked with the easier spread of TB, cholera and a variety of skin diseases. Pest infestation (cockroaches, rats, rodents and insects) and poor ventilations also underlie some of the health challenges faced.

The majority of health concerns were found to be similar in the four settlements. These include pains, headaches, malaria, dysentery, typhoid and skin infections. Even though infrequent, cholera is also a major concern. Waist pains and knee problems were more common among women while children suffer more from fever, cold, pneumonia and malaria especially in the rainy season. Other illnesses include HIV, hepatitis, hypertension and TB. The health concerns were linked to some risky behaviours such as the non-use of free bed nets to protect against mosquitoes, unprotected sex, digging beneath hanging boulders which may collapse on dwellings, drug abuse, electrical faults due to irregular connection, leaving candles unattended and leaving their kids unsupervised.

A mix of care seeking practices were observed among residents in the communities. These include PHC/hospital visits, self-medication, pharmacy visits, and visits to traditional birth attendants (TBAs), traditional healers and community nurses. Drug peddlers and traditional healers are the more common health providers since they already live within the communities and therefore, can be easily accessed. Moreover, most people will self-treat before seeking care at a health facility and this will be only for more serious health conditions or when their condition has worsened. Occasionally, delivery cases by pregnant women are presented late due to first being treated by a TBA. This is in spite of the frequent warnings to pregnant women against going to TBAs for delivery. A few health issues (e.g. convulsions, “pile”, epilepsy, elephantitis, etc.) are only taken to traditional healers since people do not trust conventional medicine for such illnesses. Care seeking is affected by people’s prior experiences with service provision in the PHC; the amount paid for the service; and the prospect of having cure for the ailment. Other factors include the place of dwelling within the settlements and the related difficulty to access PHCs by those living either on the rugged hilly terrains or in the low-lying flood plains.

Only three settlements have PHCs located within their geographic area. Residents of Cockle Bay seek care from PHCs nearby. In general, PHCs have between 4 to 6 rooms which is usually too small compared to the population threshold they cover. The majority are regularly open with nurses on duty and, are equipped with some vital equipment (bed, generator, solar light) and supplies (e.g. drugs). Not all nurses are on salary since quite a few are volunteers. Because of the generally poor conditions of service, some workers are not fully committed to their jobs resulting often in long wait times with health workers requesting for kickbacks from patients.

Several main barriers were found to limit people’s access to health care. These include high charges for treatment, long distances, rugged relief, poor roads/mobility, long wait times and social/cultural barriers. Nevertheless, it was observed that the high cost for seeking care was the main limiting factor for most people. Additionally, communication between communities and the PHUs is rare with hardly any mechanism for reporting grievances in the community. Therefore, some people will resort to airing their grievances on the radio to the displeasure of the health workers.

Overall, it was found that health outcome in all four communities is poor owing largely to the failure of delivery of services of all kinds (water, sanitation, housing, health) to address the deteriorating conditions and to prevent such places from becoming incubators for the spread of diseases beyond the settlements to the city population as a whole.

Three key lessons from the study were that first, the right to basic services remain unrealised for the majority of poor and vulnerable people since tenure insecurity and the lack of appropriate space inhibits the expansion of service infrastructure. This reality underlies the appalling living conditions in informal settlements and hence, the health situation. Second, services provided (e.g. drugs) and the accompanying health infrastructure (e.g. delivery beds) do not meet the current (and maybe long term) needs and affordability of poor and vulnerable groups. Overcoming drug scarcities and water and electricity outages remain a big challenge to most PHCs. Third, the location of informal settlements and the nature of the terrain are critical for the health risks faced in different communities including their access to health care and the provision of services such as water.

Four main recommendations were that (i) slum upgrading programmes should be promoted as a deliberate effort to improve the locations as well as make them better serviced; (ii) public health planning should give special consideration to the needs of poor and vulnerable informal settlement dwellers who are constantly faced with health problems associated with their poor living conditions (iii) efforts be intensified to increase access especially to people living in hard-to-reach areas including areas located far away from the nearest PHC, and; (vi).the government to recruit more CHWs and to strengthen their relations with CHMCs in ways that will improve community awareness as well as allow them to work mutually in dealing with the local health problems.

Chapter I: Introduction

1.1 Background and Rationale of the Study

The rapid and unbalanced growth of cities in Africa makes urban environments a major determinant of population health. In many places, the rapid pace of urbanisation has outpaced the ability of governments to provide appropriate health and other services (Montgomery, 2009). In Sierra Leone's capital, Freetown, urban growth is characterised by the proliferation of informal settlements including slums. Available data in the country shows that health outcomes are worse in slums than in the nearby affluent communities (UN Habitat, 2010: 107). Research (WHO, 2010; WHO, 2016) has associated urban poverty, overcrowded and filthy living conditions with social unrest and the outbreak of diseases which can occasionally spread beyond a single neighbourhood to overwhelm the entire city. As the 2014-15 Ebola outbreak showed, the existence of a large proportion of city residents in such neglected conditions can contribute to an increased risk of disease spread.

However, beyond some sweeping generalizations, little is known about health in informal settlements. For example, what health services are available, whether they are appropriate and of quality, and how they differ between settlements. Moreover, while data on population health is generally poor for all social and economic groups in Sierra Leone, for residents in Freetown slums it is even more limited as their living and health conditions are rarely given attention in official health statistics (e.g. the 2013 Sierra Leone Demographic and Health Survey). The lack of information on the health conditions in slum settlements prevents a clear identification and understanding of the problem and the kinds of policy and programmatic actions required to deal with the problem (Baqui, 2009).

A recent scoping study of existing evidence on urban health in Sierra Leone (Macarthy and Conteh, 2018) has documented existing risks and barriers to health care services in urban areas of Sierra Leone. The study noted that the risks and health problems which were most frequently recorded were barriers to health care services owing largely to distance, out of pocket cost and a variety of other factors; contamination of groundwater systems as a result of seepages from latrines; faecal contamination of water sources by overflowing rain water; poor waste disposal system leading to waste accumulations in slums causing the propagation of flies, mosquitoes and rodents; vulnerability of most seaside slum communities to flooding and a variety of health risks since they suffer indiscriminately from poor sanitation; and some serious health problems faced by EVD survivors as a consequence of the severe impact of the virus. However, we noted that most of this evidence base focused on single diseases or themes (e.g. sanitation) and is likely to represent the interests of researchers rather than a comprehensive overview of the health conditions in slums.

1.2 Aim of the Research

This study aims to examine the links between human health and the living conditions of informal settlement dwellers in Freetown.

1.3 Research Objectives

The objectives include the following:

- To assess the current living and health conditions of residents in four informal settlements in Freetown
- To identify the most frequently reported health problems in the settlements
- To examine how the health problems are associated with the living conditions of the people
- To determine the problems of access to health services by community residents

1.4 Research Questions

The objectives of this research will be explored by way of seeking answers to the following research questions:

- What is the current state of the living and health conditions of the case study areas?
- Which health problems are more commonly reported in the four localities?
- How are the reported health problems linked to the living conditions of the people?
- What are the main health services available in the community and how accessible are they?

1.5 Relevance of the Research

Sierra Leone is becoming rapidly urbanised with 41 per cent of its total population already living in urban areas compared to 36.7 per cent in 2004 (Statistics Sierra Leone, 2015). One major problem of urbanisation in Freetown is the proliferation of precarious informal settlements. The rise and spread of informal settlements became more severe during the civil war (1992 to 2002) mainly as a result of the massive displacement caused and has continued since. Informal settlements usually concentrate a high proportion of the urban poor. However, because the settlements are generally perceived by the government to be illegal, they are not provided with basic services through official means. Therefore, living in informal settlements in Freetown has been frequently associated with extreme poverty, congestion, poor housing, lack of access to water and sanitation facilities (water, toilet, waste disposal) and health care services. Owing largely to their precarious conditions, informal settlements are also recognised as incubators for the spread of diseases among residents and the city population as a whole (Riley et al, 2007). As the Ebola outbreak showed, the very nature of the living conditions makes several informal settlements not only social clusters for engendering health problems but also reservoirs of a wide range of health conditions (Riley et al 2007). There are a number of studies that have documented evidences on the urban health situation in Freetown, but much of what they have generated in their analysis cannot sufficiently explain the specific and community-wide health risks that people are faced with in each of the informal settlements. As Macarthy and Conteh (2018) have shown, the limited understanding of the environmental and social determinants of health of the informal settlement dwellers affect policy decisions and planning for improving the wellbeing of the residents. Moreover, because the evidence base of much of the research on urban health in informal settlements in Freetown have focused on single diseases or themes (e.g. sanitation) and is unlikely to represent a comprehensive overview of the health conditions in slums, this study has been devised to fill this gap. It will describe the living conditions in informal settlements, and explore how these relate to the health of people living there, as told and understood by the residents themselves and as reported in routine statistics.

Given this background, it is important for a research to be conducted to understand the living conditions in informal settlements, as experienced by the people themselves. In Sierra Leone, official health statistics are generated by community health facilities, part of which inform policies but do not often explain social determinants of health behaviours and access to care. These official records reveal disease prevalence and health utilization patterns but are often grey in terms of explaining why such health conditions exist, as well as factors that underlie poor health service utilization. At the same time, health statistics provide generalized health outcomes, but do not specify what obtains at the urban slum clusters, where majority of people are poor and live in conditions that are trigger poor health outcomes.

1.6 Limitations

The study was designed based on a mixed methods approach. This involved merging qualitative field data with quantitative DHMIS health data held by the Ministry of Health and Sanitation (MoHS) in Sierra Leone. The DHMIS was envisioned to provide valuable, relevant data for the study since it is generated from community health records. However, only a limited data was found to be pertinent since much of the data is not disaggregated by community. Besides, the peripheral health centre (PHC) health records for some of the ailments were found to also include people living outside of the informal settlement. For that reason, it was difficult to triangulate much of the data (qualitative and quantitative) except for a few. Nevertheless, this did not in any way compromise the study outcome owing to the rigorous internal checks put in place.

Chapter II: Methodology

2.1 Study Design

The research adopts mixed methods combining qualitative methods and secondary data analysis of quantitative indicators. This approach was preferred because it provides a holistic understanding of the issues by allowing the researcher to explore and analyse data from different (qualitative, quantitative etc.) sources. The qualitative component combines focus group discussions (FGDs) with informal settlement community members, and in-depth interviews (IDIs) with relevant stakeholders, including informal settlement leaders, civic representatives and health facility providers. Both the FGDs and IDIs were undertaken in four informal settlement communities around Freetown. Secondary data analysis of DHIS2 indicators from the Sierra Leone Health Monitoring Information System (HMIS) were used to understand patterns of service utilization at local Freetown health facilities. The secondary data analysis was accessed through getting approval from the MOHS who provided us with the access code to the DHIS2.

2.2 Study Area Description

As highlighted in Section 2.2, the study participants for the FGD and IDI were a cross-section of adult residents (aged 18+ years) drawn from four informal settlements in Freetown: Cockle Bay, Portee-Rokupa, Dwarzack and Moyiba communities (see Figure 1). The four settlements are generally described as informal. While two are coastal settlements (Cockle Bay and Portee-Rokupa) with the other two (Dwarzack and Moyiba) located on the hillside, they are commonly characterised by high levels of poverty, inequality, and poor hygiene. Most local dwellers have limited access to essential services such as water and electricity. Largely as a result of their location, residents are disproportionately affected by disaster events such as seasonal flooding, particularly the 2012 floods which displaced over 3,000 people; the 2012 cholera event, and; the 2014 EVD outbreak. Moreover, the residents are also faced with persistent (annual) and long-standing threats of eviction on the basis of both a formal designation of the area as risk prone (mainly due to floods and disease outbreaks). In spite of this generality, the specific features of each of settlements is hereby briefly discussed.

Cockle Bay: is located on the shores along the Aberdeen Creek in western Freetown. The settlement has evolved since the civil war with people squatting in an environmentally protected area and reclaiming land for housing. Already, it is home to an estimated 540 households. Although no extreme weather-related hazard has been reported in this community, its low altitude, poor drainage and weak infrastructure renders several areas and developments at risk of flooding associated with heavy rains, tidal waves and sea level rise. There is no resident PHC in Cockle Bay so, residents access the PHC in nearby Murray Town.

Portee-Rokupa is a merger of two settlements (Portee and Rokupa) that used to exist separately. The settlement is located in a small bay along the coastline and surround by a cliff. It is a vibrant fishing community in eastern Freetown with slightly over 6,000 people (YMCA 2012). Owing largely to the prevalent poverty, housing shortages, high rental cost and a shortage of land for housing, most people are into land reclamation especially at the seafront. There is a very high environmental risk due to the cliff and the population living on the plateau sends its waste and contamination down to the informal settlements. There is a PHC in Portee-Rokupa named ISCON but residents also visit the Rokupa referral hospital when they are sick.

Dwarzack is a hillside settlement located near the city centre. A study by Cumming (2012) estimates the population to be 16,500 residents with 65 percent of this total under the age of 30. The topography

of the land is undulating and composed of large rocks/boulders over hanging dwellings. The settlement shares similar features with Moyiba regarding poor housing, poor road networks, high illiteracy, poverty and inequality. Some of the women are involved in agricultural activities along the bank of the George-Brook Stream. There is limited water to the community so, locals depend on the George-Brook Stream, wells and spring water.

Moyiba is situated in a hilly area on the eastern side of Freetown. According to the last census (2015), the settlement has 37,000 resident population of which half are young people. Income levels in Moyiba are generally low. The majority of the residents derive their livelihoods from stone quarrying, self-employment or small business enterprises (petty trading). The settlement is characterised by poor housing, congestion, poor road networks, poor hygiene, high illiteracy and unemployment rate and high poverty and inequality. It also suffers from severe erosion during heavy rains leading to flooding and the contamination of the stream.

The four settlements were selected since, apart from being well known to the researchers, they are the main study areas for SLURC in Freetown.

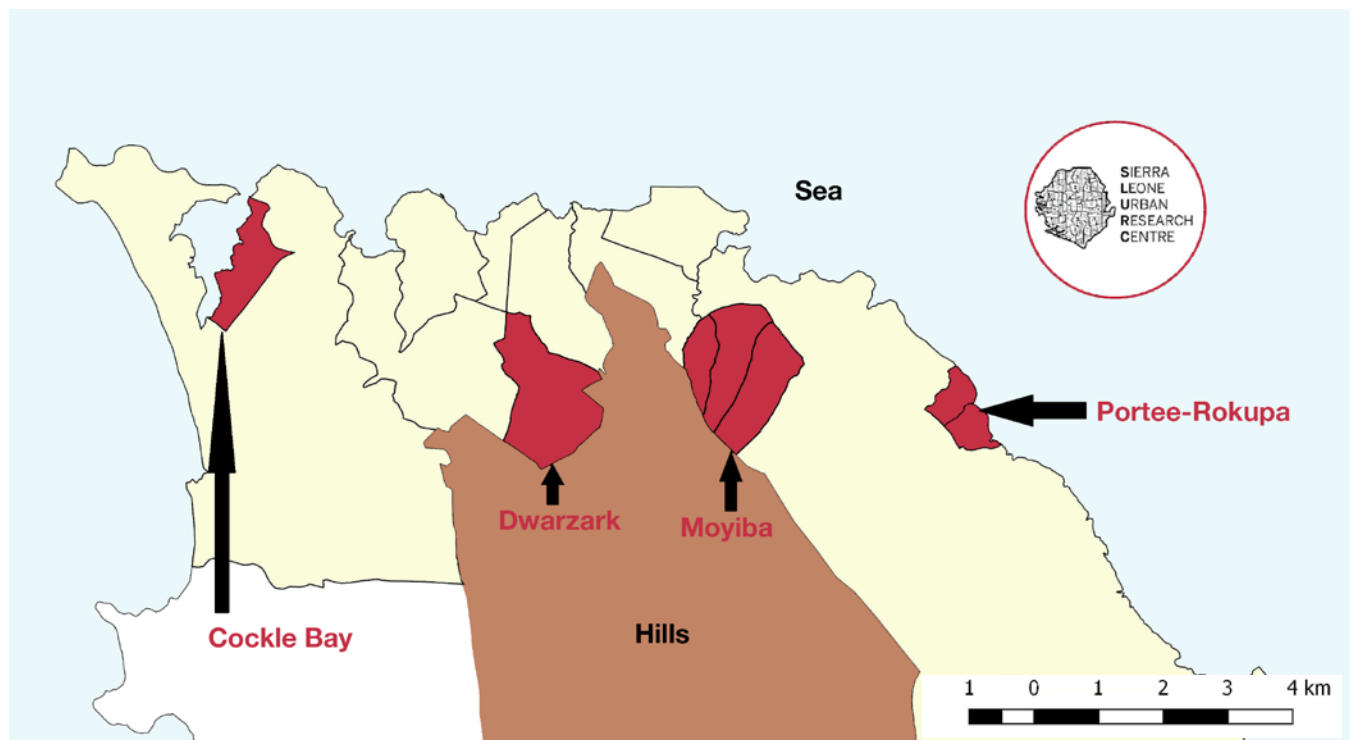


Figure 1: A map of Freetown showing the study areas

2.3 Sample Size and Sampling

The research involved holding two FGDs per informal settlement community (one male, one female) for a total of 8 FGDs. Each FGD session consisted of 8 participants (see Table 1), for a total of 64 participants (32 male, 32 female). Samples for the FGD were selected from among ordinary residents in only dwellings with households that have lived in the settlement for at least five years. This category was preferred because they were viewed to be more knowledgeable about their communities, including the main health problems frequently faced.

Table 1: List of FGD participants from the study areas

Community	Number of Participants	Types of Participants	Gender
Cockle Bay	16 (divided into 2 groups: male and female)	Business men and women, housewives, youth groups & students	8 males and 8 females
Dwarzack	16 (divided into 2 groups: male and female)	Disaster Management Committee members, traders, housewives, students & auto-mechanics	8 males and 8 females
Moyiba	16 (divided into 2 groups: male and female)	Stone miners, traders, & housewives	8 males and 8 females
Portee -Rokupa	16 (divided into 2 groups: male and female)	Fishermen, fishmongers, net repairers & traders	8 males and 8 females
Totals	64 participants		32 males and 32 females

Additionally, a total of 35 IDIs were held involving 28 IDIs with eight individuals associated with each informal settlement (see Table 2) and 7 IDIs with policy makers (see Table 3). Respondents from the informal settlements included community leaders (e.g. chiefs, CBO leads), civic leaders (e.g. city council representatives), traditional birth attendants, traditional healers and health facility providers (e.g. nurses, community health workers).

Table 2: List of IDI representatives from the study areas

Community	Number of Respondents	Types of Respondents	Gender
Cockle Bay	7	2 health workers, 1 Traditional healer, 2 CBO reps, 1 civic leader & 1 community leader	4 females and 3 males
Dwarzack	7	2 health workers, 1 Traditional Birth Attendant, 2 Community Based Organizations, 1 civic leader & 1 community leader	4 females and 3 females

Moyiba	7	2 health workers, 1 Traditional Birth Attendant, 2 Community Based Organizations, 1 civic leader & 1 community leader	3 females and 4 males
Portee-Roku-pa	7	2 health workers, 1 Traditional Birth Attendant, 2 Community Based Organizations, 1 civic leader & 1 community leader	3 females and 4 males
Totals	28 respondents		14 females and 14 males

The rationale for investigating this category of persons/organisations was based on SLURC's assumption that to have depth knowledge of the living condition in the communities, including the way it affects human health, it is important to gauge the views of the different persons/organisations that are either more actively involved in health systems delivery or are often involved in addressing environmental sanitation issues in the locations.

Table 3: List of policy makers from public institutions

Institutions	Number of Respondents	Gender
Freetown City Council	1	Male
Ministry of lands, Housing and the Environment	1	Male
Ministry of Social Welfare, Gender and Children's Affairs	1	Male
Ministry of Water Resources	1	Male
Office of National Security	1	Male
Ministry of Health and Sanitation	2	1 male and 1 female
Totals	7	6 males & 1 female

Alternatively, the sampling procedure for the 7 IDIs with policy makers involved identifying public institutions at both the local and national levels that either have responsibility for health service provision or have urban settlement development as part of their agenda. The selection of public institutions was based on an analysis of public health institutions previously undertaken as part of the scoping study. Overall, six institutions Ministry of Health and sanitation (MoHS), Freetown City Council (FCC), Office of National Security (ONS), Ministry of Lands, Housing and the Environment (MLH&E) and (Ministry of Water Resources (MoWR) were purposively selected with one (MoHS) having two respondents based on the nature of their role. Only relevant senior/middle level management officials were selected for the interview since they are deemed to be more familiar with the issues pertinent to the study.

2.4 Data Collection

2.4.1 Qualitative Data

Both the FGD and the IDI involved interviewing each respondent only once during the course of the study. Participants for the FGD were each met in person to explain the study aim and to invite them to participate. Once the person accepted to participate, an appointment was set for the FGD. Recruitment to the FGD was conducted by the PI and co-investigators. Each FGD lasted for around 60 minutes and was conducted in a location within the informal settlement convenient to most respondents. On the other hand, the IDI respondents were identified via snowballing sample. This involved the PI and co-investigators approaching participants in person to explain the study aim and to invite them to participate. Appointment was then set with consenting participants for an interview. Each IDI took between 60 to 90 minutes and was conducted in person at the location of the respondent's choice. The main languages used were English and Krio. Interviews from the FGDs and IDIs were audio recorded with a few jottings taken by the researcher.

2.4.2 Quantitative Data

The study also involved accessing DHIS2 data for the health facilities most proximate to the informal settlements in the study in order to conduct secondary data analyses. Data was only accessed from 6 facilities since sample selection was based on proximity to the informal settlements included in the study. The DHIS2 service data (also known as HMIS) provided information from patients treated at facilities on for example, service volume (e.g., number of ANC visits, family planning clients, blood smear tests performed for malaria diagnosis) as well as general patient demographics which are aggregated at the facility level. Since the quantitative method involved collecting secondary data which were entirely aggregate counts, no information on the participants is included.

2.5 Data Analysis and Interpretation

Data from the FGD and IDI were transcribed, translated as needed, and systematically coded. Unlike the FGD which was coded manually the IDI was coded electronically using a thematic analysis approach involving the use of the Dedoose and Atlas.ti software programs. Key domains of interest included how different aspects of community members' living conditions affect their health, differences between how living conditions affect different members of the community (e.g. mothers and children, youth, adult men), care-seeking behaviours both in the formal and informal healthcare sectors, how different environmental factors affect community health both directly (e.g. flooding) and indirectly (e.g. crowding), etc. Alternatively, the quantitative data was analysed by running basic descriptive statistics to understand trends and patterns of service utilization over time and across service categories (e.g. antenatal care, outpatient visits, childhood immunizations) and gender/age groups. Overall, priority was given to the qualitative data at both the data collection and analysis stages. The quantitative method was accorded less priority since it was largely used to provide supporting information on the trends and patterns of health service utilisation in informal settlements.

2.6 Data Storage

Since the coding also involved de-identifying and anonymizing the data before analysis, the file that linked the code with the participants' information was password-protected and filed separately. The data was then encrypted into a format where only authorised SLURC researchers will have the ability to decrypt and view it. The data was saved into a folder backed up to a secured cloud storage service. However, because internet and electricity are not reliable in Sierra Leone two further copies were made on external hard drives which will be kept apart from each other and in locked facilities. Additionally, a good antivirus software will be used to protect our system from malicious software including worms, spyware, Trojan horses and other malware.

2.7 Data Validation

Following the preparation of the draft report, an opportunity was created to discuss and validate the research findings. This involved a one day workshop held at the SLURC office with participants from the four communities and from the local and national government; and, two half-day validation workshops with the first held with community stakeholders in Cockle Bay for representatives drawn from the two coastal communities and the second held in Dwarzack for representatives drawn from the two hillside communities. All workshops provided a platform for dialogue around the issues raised as well as providing an opening for participants to submit any further information that may not have been covered in the draft report. Participants were also required to identify additional ways in which the health challenges in the communities might be addressed going forwards.

2.8 Ethical Considerations

There were no privacy issues associated with recruitment and both the FGD and IDIs did not require discussion of sensitive information. However, each interview (FDG and IDI) was preceded by obtaining the informed consent of respondent. This involved providing the participant with a written and/or oral information about the project, including highlighting the data collection methods, processes of anonymization, and any risks or expectations involved in their participation. Respondents were told of their right to refuse participation or to stop at any time. The participant were required to either sign the consent form or to stamp their mark on the page to indicate giving their consent. The results of the consent discussion (agreement or not) were recorded by the interviewer but not stored with study data. Moreover, because the quantitative data was limited to facility identifiers, no individual identifiers were included. This study was reviewed and approved by the Office of the Sierra Leone Ethics and Scientific Review Committee.

Chapter III: Discussion of Findings

3.1 Description Of The Living Conditions Of Informal Settlements

The living condition of precarious informal settlements in Freetown can generally be described as appalling. Undoubtedly, several studies (Bonney, 2007; Corburn and Karanja, 2016; Sverdluk, 2011) have associated poor living conditions with many of the factors affecting human health. Although these factors do sometimes vary, in Freetown human health in informal settlements is largely influenced by the following factors which condition the living environment: toilets, water, waste, housing, energy, and livelihoods. These factors are mediated by the geographic location of settlements including the constraints posed by the topography. While the exact link between human living conditions and human health is so far, not fully understood, a description of the aforesaid factors will provide an idea of how the living condition shapes health outcomes in the study area. Each of the factors will now be examined in turns.

3.1.1 Toilets

The most common toilet in all the case study areas was the pit toilet which were usually partitioned into two rooms; one for men and one for women. The toilets usually consist of a pit with a concrete top and a slab at the top. However, the toilet condition was observed to be generally poor (see Table 4). Some meaningful disparities were observed both within and across settlements. In Cockle Bay, Portee Rokupa and some parts of Dwarzack, the most common toilets are the hanging toilets (see Figure 2) which are generally makeshift. These toilets are made from sticks and empty sack; hang over the edge of the sea/stream, and; are connected with pipe directly to the sea (see Figure 3). More often, the toilets do not look like real toilets unlike the ones built in the more formal parts of the settlements. Public toilets are rare and these are also makeshift toilets. The few homes which are provided with flush toilet also have the pipes connected to the sea. Often, when the water is low, the wastes are not as easily washed away. The pungent smell affects the community directly.

Shared toilets are also common which may be divided among apartments with between 4 to 5 door “apartments” assigned to 1 toilet. Other shared toilets may be built on the edge of the stream and may have four or six doors that can be locked for all except who are sharing. Toilets may also be shared with strangers and passers-by who are pressing in need. This is in spite of on-going efforts by some



Figure 2: Photos of a hanging toilet (left) and a pit toilet (right)

tenants and landlords to reduce toilet sharing since it makes the facility very messy. A few people who do not have toilets in Cockle Bay and Portee-Rokupa simply use the sea. This is especially the case of some houses which do not have sufficient space to build toilets.

In both Dwarzack and Moyiba, some people living in houses on the hills who hitherto either begged/ negotiated to use their neighbour's toilets or defecated in any available space have now started partnering with others (mostly close friends/relatives) to build makeshift toilets of their own. This recent practice commenced after they started listening to some environmental hygiene messages from visiting health officials. While there have been attempts by some community chiefs to make bylaws on pertinent community sanitation issues (e.g. all houses to be provided with toilets, people not to empty toilets in the stream) together with the residents, these bylaws have rarely been heeded. One chief in Dwarzack who was interviewed during the IDI for instance, expressed as follows:

"We as chiefs encourage people who do not have a toilet to try to have one, and if they don't construct a toilet, we fine them. But there are others who have just constructed their houses and do not have money yet to build a toilet. You see? That's it."

Table 4: Community toilet characteristics

Community	Toilet Types	Household Toilet Ownership	Shared Toilets	Toilet Waste Disposal
Cockle Bay	Hanging toilets	Low	Common	Emptied into the ocean
Moyiba	Pit latrines, some hanging toilets	Low	Common	Emptied into streams, buried, or disposed of in plastic bags
Portee-Rokupa	Hanging toilets	Low	Common	Emptied into the ocean, or buried
Dwarzack	Pit latrines	High	Common	Emptied into streams, or buried; sometimes emptied into collection tanks



Figure 3: Toilet overhanging streams where the waste is emptied through pipes

3.1.2 Water

A variety of water sources (see Table 5) were identified in the study. Primary among these are water wells, running stream, underground sources and taps. Nevertheless, communities differ widely in terms of their main source of water and the ease of access. Unlike Cockle Bay where safe drinking water (from tap and wells) is easily accessible, all the other settlements have difficulty accessing water. Moreover, in Portee-Rokupa, Moyiba and Dwarzack, water access was observed to differ widely among residents based on where they live. For example, whereas in Portee-Rokupa, residents in the low-lying coastal slum are always battling with water giving the lack of water taps and the salinity of the water wells dug on the coastline, in both Moyiba and Dwarzack, it is those on the hillside that have an especially hard time accessing water. This is owing to the constraints imposed to the digging of water wells by the difficult terrain.

While boreholes, spring water and streams sometimes exist which are used mostly for bathing, laundry (see Figure 4) and sometimes, cooking, the majority of people in all three settlements have to travel long distances to access piped water. Water is mostly fetched by girls and boys and often, it takes too long to secure a bucketful. Usually, the time taken to fetch water depends on the distance, the number of people already at the tap and if the tap is running fast. Therefore, while some people may get to the tap/spring water in the afternoon (e.g. 2 pm) they may not get water until at night (e.g. 10 pm). More often, households (and health centre staff) have to pay between Le 1,000 and Le 2,000 (approximately \$0.12 to \$0.24) per container (20 litres) of tap water or even, from the wells.

While water sourced from some wells in both Cockle Bay and Portee-Rokupa are somehow salty, it does not deter residents from using it for bathing, laundry and cooking. Similarly, whereas water from some wells in Moyiba and Dwarzack are sometimes contaminated (mostly coloured due to the presence of organic matter) especially in the dry season, people always use them for domestic purposes. This is equally the case with water from the nearby streams which, even though contaminated from people



Figure 4: A stream used for laundry and bathing with a nearby water well (to the far left)

defecating around the sources (especially upstream) is still used for bathing and laundering (Figure 4). A few families occasionally use chlorine to purify the wells including stored water in their homes. Even though water tanks have been provided to enable access to clean and safe water to some deprived communities specifically on the hillside, the use of sachet water is more widespread since it is believed to be of a higher quality. This is especially the case in the dry season when water scarcity is more prevalent. Water scarcity is exacerbated in most areas by people either cutting the water mains or obstructing water flow to other areas in the community. To address this, some NGOs (e.g. YMCA, ACF etc.) have been partnering with some community residents to provide more boreholes, hand pumps and spring boxes in nearly all the study areas.

Table 5: Community water characteristics

Community	Sources	Ownership by Households	Quality	Cost	Distance
Cockle Bay	Tanks, taps, spring, and sachet water	Medium	Good	Not stated	Not stated
Moyiba	Tanks, wells, and streams	Low	Poor	Le 100-500 to collect from certain sources	Close, but long wait times at most sources
Portee-Rokupa	Wells, tanks, sachet water	Low	Well water may have salty taste due to proximity to the sea	Le 500-2,000 to collect to certain sources	Far for most community members
Dwarzack	Wells, taps, streams	Low	Poor-little color and taste dependent on source	Le 500-1,000 to collect from certain sources	Far for some community members with long wait times

3.1.3 Waste

In general, there is no formally known waste collection site in all the four communities. Therefore, waste is usually deposited almost anywhere. Nevertheless, waste can be dumped in the sea/stream, buried, or burnt (see Table 6) as was demonstrated by in an IDI by one respondent in Dwarzack as follows:

“We don’t have a waste depositing site. Well that’s the most difficult situation. If you look around you will see garbage packed”.

In both Cockle Bay and Portee-Rokupa, the common practice is to deposit waste in some demarcated areas at the sea edge. This may be near houses where specific sites have been identified for “banking” specifically to reclaim land for housing construction (see Figure 5). However, even though barriers may be erected to prevent the trash from being carried out by the water, some may be flushed out into the sea by tidal waters.

In Moyiba, Dwarzack and the upper areas of Portee-Rokupa, the more common practice is to dispose wastes in gutters. This often causes blockages thereby leading to flooding with much of the trash littering the street after the flooding. Especially in settlements along the hillside, some households throw trash



Figure 5: Area delineated for banking of waste for potential land reclamation

in the drains at night. The trash is often washed down to the lower communities already decomposed. This causes flies and mosquitos to gather around the trash thereby affecting the neighbouring homes. In the lower communities, some residents also deposit wastes in the street, under the bridge, or in drains especially to avoid paying collection fees. Nevertheless, a few affluent households usually pay between Le 1,000 to Le 2,000 for tricycles to pick the waste. It was reported that the frequency of tricycle pick-ups in the community has decreased from three times a week earlier to only once a week at the moment. This is largely because most people do not want to pay for the service. Because of the difficult terrain, tricycles do not go up the hill. Therefore, some residents either burn the waste, throw it into drainage ways or bury it in holes. Quite recently, some NGOs have been collaborating with the government (local and national) and residents to carry out monthly community cleaning exercises as part of the national cleaning agenda of the government.

Long before this time, the chiefs in each of the communities had worked with the residents to enact bylaws with clearly defined fines on improper waste disposal practices but this has not deterred people from doing so.

Table 6: Community waste characteristics

Community	Disposal	Collection	Management
Cockle Bay	Disposed into the sea, buried, or drains	Tricycles come to collect trash occasionally for Le 2,000 per bag, but cannot reach some areas of the community	Community laws in place, but are ineffective

Moyiba	Disposed into the sea or drains, burnt, or buried	Tricycles come to collect trash occasionally for Le 2,000 per bag, but cannot reach some areas of the community	Community laws in place, but are ineffective
Portee-Rokupa	Dumped into the sea or the drains	Tricycles come to collect trash occasionally for Le 1,000 per bag, but cannot reach some areas of the community	Community laws in place, but are ineffective; community cleaning exercises are sometimes held
Dwarzack	Dumped into streams, buried, or burnt	Tricycles come to collect trash occasionally for Le 2,000 per bag, but cannot reach some areas of the community and community member do not want to pay	Community laws in place, but are ineffective

3.1.4 Housing

The study identified different housing types (see Table 7) in each study area. These include brick, mud and panbody¹ houses. While brick houses were found in all the settlements, albeit in relatively smaller quantities, panbody houses were more widespread in the coastal settlements of Cockle Bay and Portee-Rokupa. Brick houses are rare because most people do not have right to the land they occupy since much of the land has been reclaimed from wetlands which the government refuses to register. Panbody houses are mostly made of local materials and so, they are not strong. Moreover, because the houses are often constructed on unhardened soil many are also, risk prone. Panbody houses are generally separated into apartments with either single rooms or with 1-2 rooms and a parlour.

Depending on the size of the family, a few people can convert their parlour into two rooms. Only a few houses have between 3 to 5 rooms. Even with this, most houses can be so crowded with five or more persons living in a room while others sleep on the floor. One community leader from Moyiba for instance observed that:

“Overcrowding is a problem, because up to 20, 30 or 40 people live in a single house. If a family lives in a congested house and a child contracts an illness for example, by the time it becomes visible, that illness would have spread to other family members. One such illness that spreads through this means is chicken pox”.

Especially in Portee-Rokupa, some residents have converted the open spaces in their compounds to banda² for the smoking and drying of fish. Brick houses are mostly found outside the slum specifically in the areas leading to the upper areas of the community.

Alternatively, the majority of houses in Dwarzack and Moyiba are built of mud bricks, though there are also brick and panbody houses. Mud houses are abundant because the majority of land are unregistered and so, people will not want to risk building decent houses only to end up being evicted. In general, much of the unregistered land are located up the hills. The majority of lands here were acquired through either

¹ Panbodies are often roughly built houses made of stick with body and roof covered with zinc.

² An elevated table-like platform with an opening underneath to place stacks of wood to burn and smoke fish.

land grabbing or informal land transactions. Over time, a few land owners have worked to secure some form of recognition from the FCC through shady deals or through other forms of tenure arrangements involving informal landlords/sellers. In most cases, the mud houses have been plastered with cement except for a few areas further up the hills. Mud houses are not particularly spacious. Most consist of either a single room and a parlour or two rooms and a parlour. In some compounds, there may be up to 4 or 5 adjoined apartments. Rooms are often rented out. Most mud and brick houses are an upgrade from panbody houses. Only the rich build/rent cement houses. Brick houses which are mostly built by the affluent are more common in the lower parts of the settlements. Some brick houses are made of storey.

In general, the type of houses constructed depend on the household's income. Pan body and mud block houses are often built because they are less expensive. Often, people may start with a cement foundation, and then build the rest of the house with either corrugated zinc or mud blocks. Mainly because building materials are expensive, most people secure building materials incrementally. Some secure zinc and make the mud brick before they have land. Sometimes, individuals will speed up constructing before the foundation is strong so, the house can collapse in a heavy storm. However, if a foundation is well made (digging, burying, nailing) the houses can last 20-40 years.

Yet, for many slum dwellers, the constant threat of eviction limits the feeling of safety and security and hence, the ability to go about their normal tasks. Moreover, apart from the lack of public services in the immediate housing environment which limits possibilities for physical exercise, most homes are often prone to accidents which, in many cases, are unintentional. In many slums, accidents may result from carelessness, distraction and/or negligence.

Table 7: Community housing characteristics

Community	Type	Quality	Sharing
Cockle Bay	Panbody are most common followed by, mud and brick	Mud houses collapse easily	Overcrowded; up to 15 people can reside in one house
Moyiba	Mud and panbody houses are most common	Poor	Overcrowded; up to 5-6 people residing in one room
Portee-Rokupa	Mud and panbody houses are most common	Poor	Overcrowded; up to 10 people residing in one room
Dwarzack	Most common type of home is panbody followed by mud houses	Poor	Overcrowded; up to 10 people residing in one room

3.1.5 Energy

As Table 8 shows, the study identified different energy sources in the communities. However, the main sources include electricity, Chinese lamps, candles, charcoal and wood. Whereas electricity, Chinese lamp and candles are mainly used for lighting, charcoal and wood are the main energy sources for cooking. Nearly all houses have access to electricity, though not every day. Those without electricity use Chinese lamps. A few people also use candles, shade lamps or generators. In both Dwarzack and Moyiba, houses up the hills do not have access to electricity. Largely because of their coastal location, charcoal is widely available in Cockle Bay and Portee-Rokupa. Charcoal is often delivered on boats right to the shorelines of their settlements unlike wood which is somehow difficult to get since the bushes are nearly all gone. Most, households prefer charcoal for cooking since wood is more expensive; not as easily available; and often require larger storage space. Moreover, charcoal is very convenient to use;

very easy to clean up after use; and also less dangerous to use.

Table 8: Community energy characteristics

Community	Sources	Availability
Cockle Bay	Charcoal, Chinese lamps, and main electricity are common sources	Charcoal is easily accessible
Moyiba	Charcoal, Chinese lamps, and main electricity are common sources	Charcoal is easily accessible as is main electricity
Portee-Rokupa	Charcoal, Chinese lamps, and main electricity are common sources	A few homes uses electricity but infrequently. Charcoal and wood are easily available
Dwarzack	Charcoal, Chinese lamps, and main electricity are common sources	Majority of households do not have access to electricity

3.1.6 Livelihoods

Different livelihood activities were observed to be practiced by the community residents (see Table 9). However, these activities differed according to the topography of settlement. For example, in the coastal settlements of Cockle Bay and Portee-Rokupa, the main activities included fishing and selling such things such as wood, mangoes, palm oil and charcoal. A few people were also into sand mining and transportation using dugout boats. Alternatively, in Dwarzack and Moyiba, which are hillside settlements, petty trading and stone mining are the main activities carried out. In some parts of Dwarzack, market gardening is common among the women. However, in all four settlements, some people were observed to be engaged in such other trades as bike riding, driving, masonry, carpentry, mechanic and casual labour. A few people work in the civil service mainly as nurses, prison/ police officers and teachers. In spite of this, youth unemployment is a major problem in all four settlements with the majority of the youths lacking relevant employable skills. For that reason, prostitution is common especially among the female youths. Small scale enterprises are also prevalent.

Overall, the extent of health burdens were found to differ based on the constraints imposed by the places where people live and the geographies. For example, while people in hillside settlements find difficulty accessing services such as water, toilets, schools and health facilities since these are mostly provided in the lower and more accessible parts of the settlements, people in the low-lying unstable areas are usually faced with problems of flooding, tidal waves, waste accumulations, strong winds, safe drinking water and water borne diseases.

Table 9: Community livelihood characteristics

Community	Activities
Cockle Bay	Cockle picking, mining, labor, trading/selling goods, masonry, carpentry, mechanics, sex work
Moyiba	Trading, stone mining, labor
Portee-Rokupa	Pretty trading and fishing
Dwarzack	Petty trading, labor, driving, masonry, carpentry,

3.2 Health conditions due to living in precarious informal settlements

It is important to note that each of the six factors has been linked to the health conditions faced by people living in the study area. For example, the most common illnesses that were associated with poor toilet conditions include malaria, cholera and diarrhoea. In particular, it was disclosed that the improper disposal of faeces (on land and in the stream/sea) leads not only to the breeding of mosquitoes which causes malaria but also flies which move from the faecal waste to rest on food for eating. Moreover, because toilets are sometimes located close kitchens, there is the possibility for human waste to drift near where cooking/eating is done.

Faecal waste accumulation on the shoreline is identified to cause severe health problems especially for people living downstream who normally use the water for bathing and laundering. A few respondents reported about knowing some close friends and relatives who have had experience with such rashes as scabies from washing with the contaminated water. Furthermore, because the shared toilets are usually not kept tidy, individuals can come into contact with human waste, and can infect others in the household. This is exacerbated by the lack of hand washing practices among the people. Other health issues perceived to be associated with toilet sharing is the risk of infection from sexually transmitted infections (STIs) with toilet seats, though this is medically rare or even impossible.

There are also perceived risks of getting rashes from toilet sharing even though the likelihood of this (in their view) depends on how many people are sharing the toilet and, how often it is being emptied. A key finding is that all four study communities have usually battled with cholera and diarrhoea. Overall, sanitation is a major problem in all four communities.

With regards to water, the main health problems highlighted in all the communities include typhoid, diarrhoea dysentery and cholera. Some of the health conditions may be due to the use of contaminated water for cooking and bathing. For example, while Pipes (PVC) are more widely used for water distribution in Freetown, they can break easily especially when in contact with stones. PVC pipes are often passed through drainages where open defecation takes place. Broken pipes are infiltrated with contaminants which run into people's homes, but people get the impression that they are receiving clean drinking water from the main supplier - the Guma Valley Water Company. One CBO lead in Dwarzack for instance explained that:

"The water sources used for drinking are not pure; they make us sick because most of the illnesses we experience are related to water or food. These come from either drinking or eating food and water contaminated with faeces by flies. They are particularly related to diarrhoea wherein people drink from cups or eat food which flies have rested on after they may have rested on faeces. So those are some of the ways people get diarrhoea."

Some skin conditions have also been associated with contaminated water and poor environmental hygiene. Skin infection is particularly highlighted in the DHIS2 as a key health condition reported for children (under five) at PHCs (see Figure 6) in the study areas. Besides, the proximity of the water points and the toilets makes it more likely that people can get contaminated when there is flooding and that lead to disease outbreaks.

Alternatively, the main health links associated with poor waste disposal systems is the prevalence of malaria owing to stagnant waters in the gutters and stream and more especially, to the improper waste disposal practices. Moreover, since, much of the waste deposited in the gutters and stream eventually end up in other places in the community, it causes health problems there as it starts to decompose. Poor waste management is also associated with running stomach and worm infestation which results from eating unwashed food. Cholera, diarrhoea and vomiting are also linked to the poor sanitation situation in all the communities owing to the filth they concentrate. Additionally, smoke from the burning

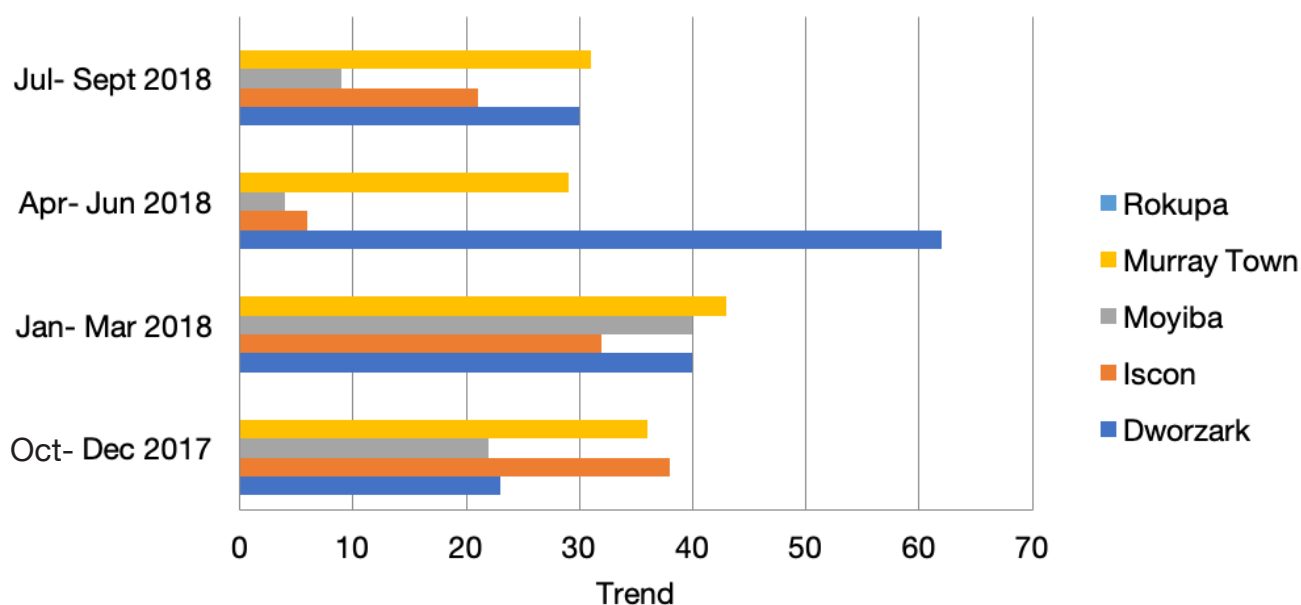


Figure 6: Under five skin infections reported in selected PHCs/ the Rokupa referral hospital

of trash is believed to cause cold and other respiratory infections.

Furthermore, health problems are associated with the housing conditions and hence, the health status of the residents. For example, mould growth in damp buildings is a major cause of respiratory illness leading often, to irritations and/or infections. Because some houses do not have ceiling, the breeze can enter in directly. Diseases can spread easily due to overcrowding; examples are cholera, TB and different kinds of skin diseases (e.g. chicken pox). Some panbody houses can also have rodents, cockroaches, rats and other insects. Overcrowding in houses is also linked to poor ventilation which exposes residents to cold and cough. This is often worse in the rainy season. The extent of health problems also depend on the physical location of the home. For example, dwellings near the sea exposes residents to such illnesses as (chronic) cold. The houses may not be built properly and may be damp inside. In some cases, water can flood homes, causing the buildings to collapse, resulting in injury or death.

Health risk related to burning wood (energy) is the smoke it causes which can be inhaled involuntarily leading to cough, cold, headaches and other respiratory problems. Sometimes, the smell can be very offensive. Charcoal also emits carbon monoxide which can cause respiratory problems. Some people burn plastic to lit the charcoal and this can cause suffocation. With regards to livelihood, health problems reported varied according to the activities of residents. For example, while cold and cough are more common among bike riders, injuries, chest, side, waist and abdominal pains are more closely linked to stone mining specifically, from sitting in one place for too long. Those engaged in building construction also experience pain. Some become exhausted working in the sun for too long. Illnesses such as HIV/ AIDS and hepatitis are also associated with women engaged in sex trade. A key finding was that women engaged in selling cooked food (especially cookery) are often exposed to the risks of fire/smoke which can results in high blood pressure. Moreover, because most people have to leave for their jobs early in the morning, many do not upkeep their homes, resulting in environmental health problems. Additionally, it was found that those who worked hard when they were young are now experiencing pain in their old age.

3.3 The Most Frequently Reported Health Problems Faced

Health concerns were reported in all four communities. However, except for a few ailments, a number of similarities were observed among settlements in terms of the health concerns they report at PHCs. In Cockle Bay and Portee-Rokupa, the main health concerns include pains, headaches, malaria and skin infections. Other health concerns which, even though infrequent but can sometimes cause extensive damage to humans include cholera, dysentery, and typhoid. Waist pains and knee problems were observed to be more commonly reported by women unlike children who are more frequently affected by fever, cold, pneumonia and malaria. It was observed that cold, pneumonia and fever are more frequently reported in the rainy season. A few people also identified HIV, hepatitis, hypertension and TB among their main concern in the two communities. Likewise, in both Dwarzack and Moyiba, the most common illnesses are malaria, cold, pain, cough, headache, stomach ache, dysentery, diarrhoea, fever and typhoid. Other health concerns include hypertension and diabetes and communicable diseases (especially skin infections). Nevertheless, malaria, typhoid and cold were identified as the foremost concern especially among adults. Malaria was specifically pinpointed in an IDI by one community representative in Cockle Bay as follows:

“Malaria is the most common health problem in this community. It is due to improper wastes management system. The mosquitoes breed on these wastes and enter our houses at night”.

Malaria and typhoid were also identified in the DHIS2 (see Figure 7) as the main health problems reported in health facilities in the study areas. However, while the total reported cases differed broadly among the health facilities, less variation was observed in the total positive cases with the PHC in Dwarzack (otherwise called George Brook) and the Rokupa Government Hospital (RGH) recording more positive cases than the two others. A further trend in malaria positive cases among children (under five) reporting in PHCs is shown in Figure 8 even though it demonstrate poor quality data for the RGH.

A few adults also complained about hypertension, heart conditions and TB while for under 5 children, the main health concerns were diarrhoea, malaria, measles/ chicken pox and respiratory problems.

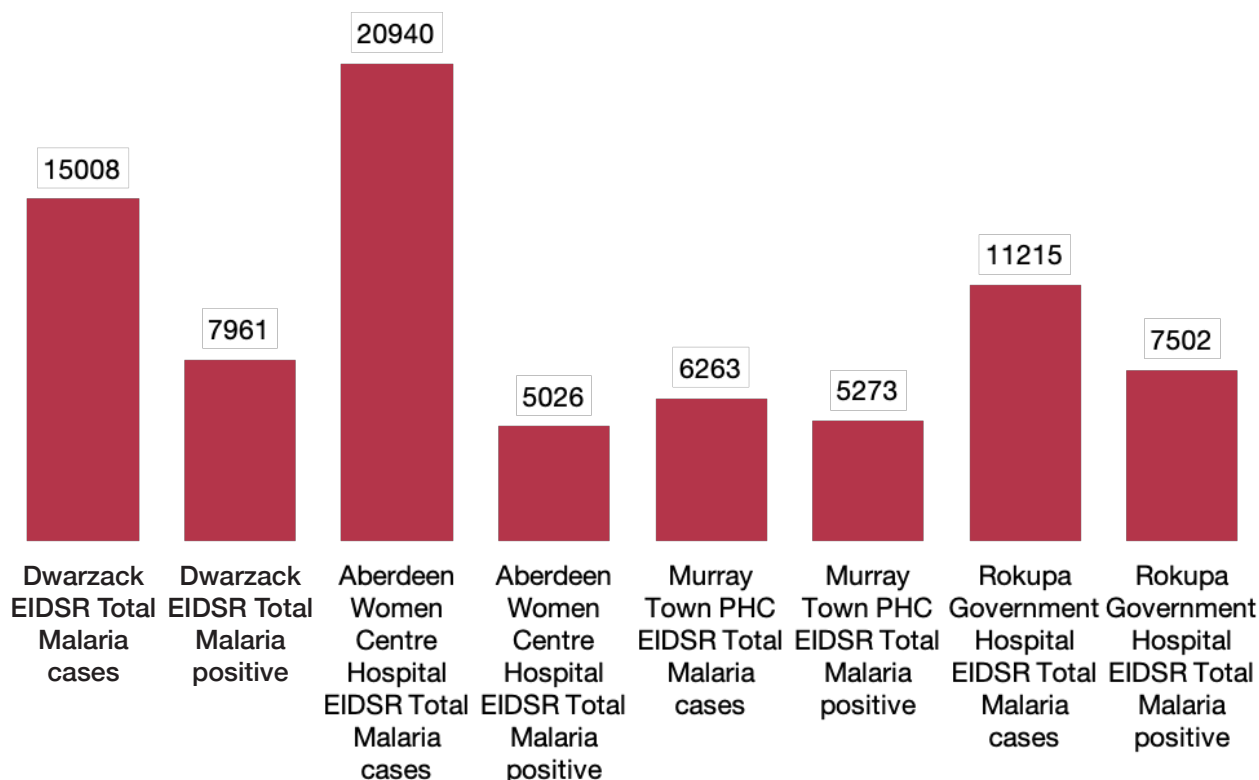


Figure 7: Share of malaria reported cases that were tested positive in selected health facilities, June 2017 - May 2018

Children suffer from diarrhoea because they play in the nearby stream more often, which is oftentimes filthy.

Most of the health concerns were linked to some risky behaviours either by individuals or parents. Risky behaviour among individuals included selling the free bed nets received from the government to protect themselves from mosquitoes; engaging in unprotected sex; digging beneath hanging boulders near their dwellings, drug abuse, electrical faults due to irregular connection, and leaving candles unattended. Especially in the dry season, burning trash can be dangerous and may put lives at risk to health risk and other forms of disaster. In the case of the parents, these include leaving their kids unsupervised, allowing them to play in trash or puddles thereby exposing them to health risks. There were also reports about drowning cases of children who were left unattended. Many seem to have resigned to fate by putting all their trust in God who they think is the only one who can protect them.

While similar illnesses were reported across the four settlements, it was observed that malaria and typhoid were the main ailments that affect both men and women. In particular, the IDI showed that men reported more for malaria in the PHCs than for any other sickness. On the other hand, women reported more for pain and hypertension. This is partly because of the nature of job for some which usually involve the use of brute strength (e.g. stone mining) and in part, because they bear much of the family responsibilities including providing food for the home, payment of school fees and taking care of children. Sometimes, this may lead to fatigue, collapse or death. Moreover, the IDI showed that hypertension is more common among pregnant women especially among people of low socioeconomic status.

It was further found that women children and the aged are generally more vulnerable to health problems than men. Nevertheless, children were found to be the most vulnerable since, apart from having a weaker immune system, they do not have the autonomy to seek care for themselves. The vulnerability of women is related mainly to their normative roles such as taking care of the home, their husbands, and child bearing factors. Moreover, many women reported that they often require permission from their husbands before they seek care at a health facility. Pregnant women were perceived to be more at risk to ailments related to housing (e.g. pneumonia) since they are mostly indoors. More often, pregnant

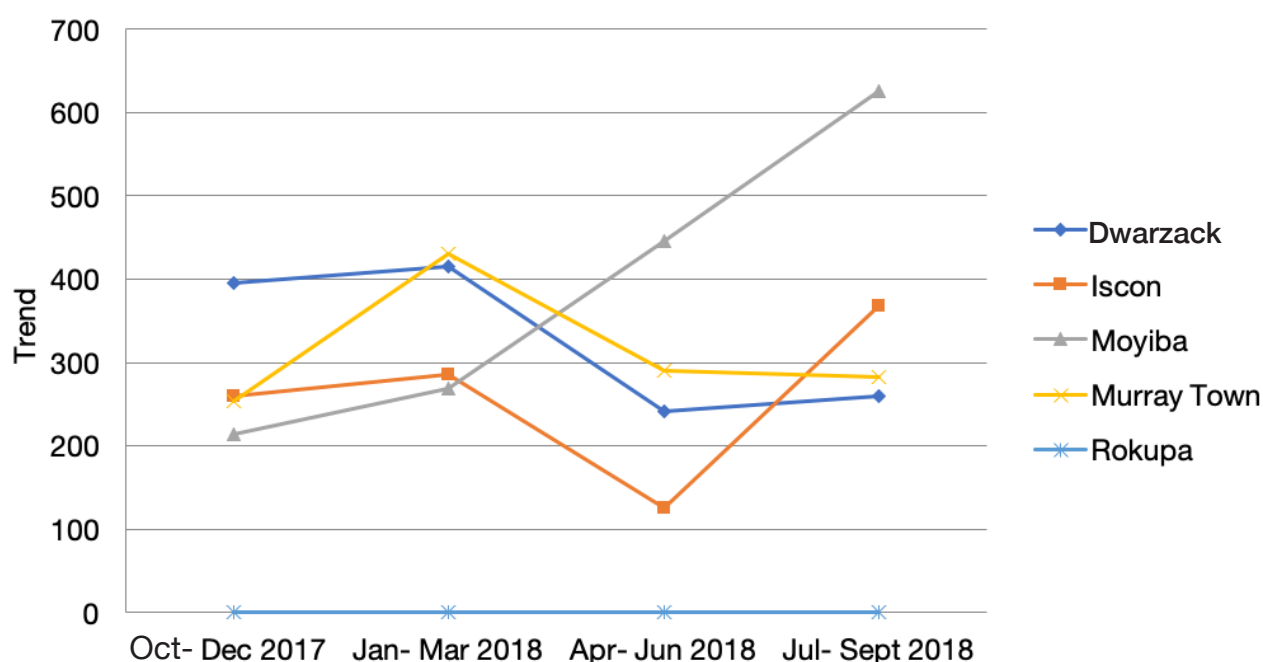


Figure 8: Under five malaria reported cases in selected health facilities

women require permission from their husbands or mother in-laws before they visit PHCs. It was found however that men and young adults rarely visit PHCs. This is not to assume that they do not become ill but rather, that they do not just seek care from the available PHCs.

Even within the same settlement, the health concerns were observed to differ broadly among residents. For example, people living near the sea or streams were found to be more exposed to cold (especially from strong winds and dampness) while those living close to drainage ways or on reclaimed land at the sea edge were mostly affected by health issues related to waste (e.g. malaria, typhoid, diarrhoea, foul smell, suffocation etc.) since they are located closest to places where waste accumulate/ are dumped. Moreover, problems of poor ventilation and dusty winds were associated with dwellings on the hills and this condition has been linked to the frequency of TB especially around the Mamba Ridge area in Moyiba.

During the validation workshops, participants identified other specific examples of the specificity of health conditions in their communities. In the hillside settlements of Dwarzack and Moyiba, accidental falls are identified as concerns due to the terrain. Blindness is more of a concern in the seaside settlements (though causes are differentiated by gender roles - among women it is attributable to excessive smoke exposure through drying fish, while fishermen are exposed to salt water while fishing).

3.4 Care seeking practices by people living in informal settlements

While most community residents usually go to PHCs/hospitals when they are sick, it was observed that most people will self-treat before seeking care at a health facility. Others will buy drugs for minor illnesses (e.g. cold, headache, fever and malaria) or seek treatment from “the quacks” (informal health providers) and will only visit health facilities when they realise that it is not working. This is usually the case of people from deprived homes who would rather self-medicate than pay for services offered by PHCs. In all such cases, people will visit health centres only for more serious health conditions or when their condition has worsened. This include acute respiratory infections (e.g. pneumonia) and pregnancy-related cases (e.g. pregnancy complications) which are sometimes presented late due to first being treated by a traditional birth attendant (TBA). This is in spite of the frequent warnings to pregnant women against going to TBAs for delivery. For certain health issues like convulsions, “pile³”, epilepsy, elephantitis, and others often related to witchcraft (e.g. “witch gun”, “fangay⁴”), care is sought only from traditional healers since they do not believe that medical doctor can cure such illnesses. In recounting his ordeal with a recent illness, one community leader explained an IDI in Dwarzack as follows:

“You see my swollen foot, it was far more swollen than this. I have visited the hospital severally but there is no remedy. It is the native herbs from my relatives which I frequently apply that has made me walk today. For conditions like epilepsy, chronic headache, pains...people go to traditional healers and the hospitals simultaneously. There are also, some illnesses affecting children which do not have remedy in the hospital – where health workers always complain about drug unavailability. Because people do not get cure from the pharmacies as well, they go to traditional healers”.

Care seeking was also found to vary broadly among residents with the women (especially pregnant women and lactating mothers) being more likely to seek care. Often, some will bring their children (under 5+) along. This same finding on ANC visits was observed in the DHIS2 data (see Figure 9) which showed increasing ANC trends for the Rokupa Government hospital - which provides care for a wider geographic area (beyond the Portee-Rokupa area) - than the PHCs.

³ Also known as haemorrhoids, piles are inflamed tissues in the anal canal.

⁴ To cast an evil spell on someone.

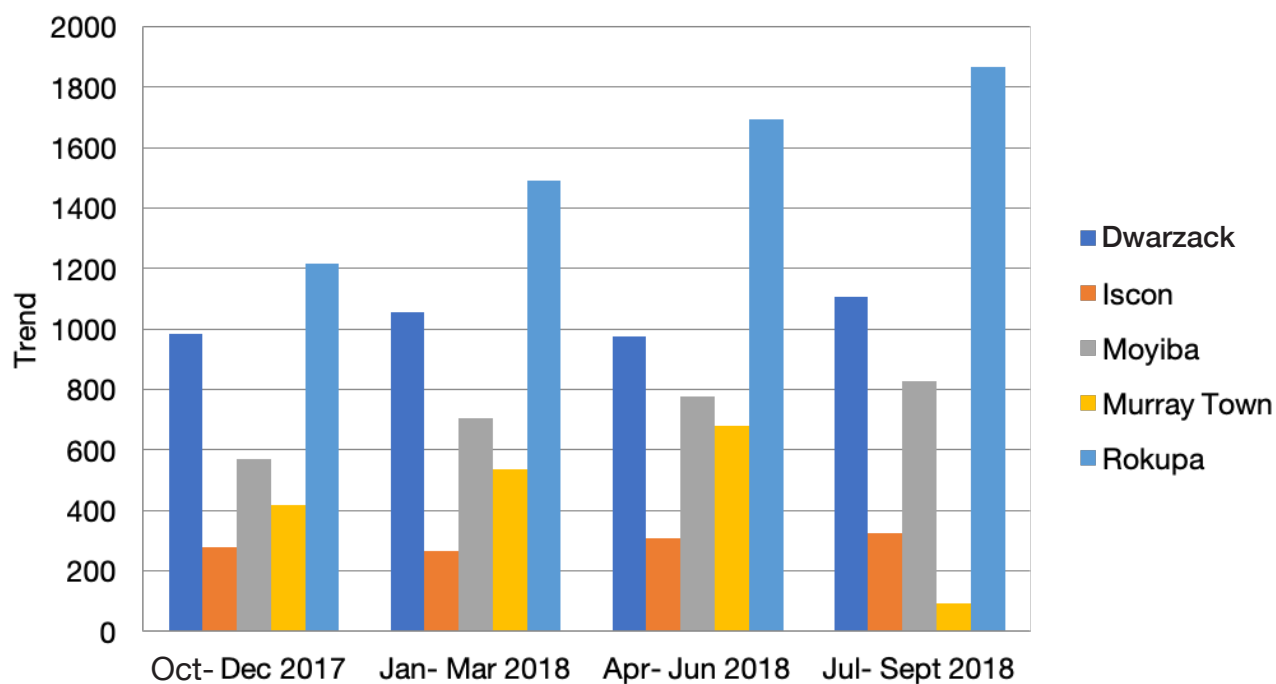


Figure 9: ANC visits by pregnant women in selected PHCs and the Rokupa referral hospital

The relatively high care seeking behaviour among pregnant women, nursing mothers and their under five children is largely attributed to the Free health care policy pursued by the government. Nevertheless, some pregnant women and nursing mothers will only seek care when they really have to do so. This is usually when they have a pressing health challenge. In general, men were observed to be less likely to and seldom visit the PHCs. This is possibly because many would prefer to cure themselves at home or seek care from other informal sources. Care seeking is also affected by people's prior experiences with service provision in the PHC; the amount paid for the service; and the prospect of having cure for the ailment.

Other factors include the place of dwelling within the settlements and the related difficulty to access PHCs by those living either on the rugged hilly terrains or in the low-lying flood plains (see Figure 10). While there are a variety of health providers in each of the communities ranging from state (e.g. PHCs, hospitals etc.) and non-state providers (e.g. pharmacies, Arab PHCs, TBAs, drug peddlers and herbalists) to formal and informal (e.g. TBAs, drug peddlers, herbalists etc.) providers, in general, residents prefer seeking care either from informal providers or from private sector providers specifically, PHCs owned/operated by the Arabs which are mostly deemed not only to be cheaper but to also provide care seekers with more drugs and better services. The Arab PHCs are also renowned for less delays in caregiving as well as in treating patients fairly and nicely. Other care providers include nurses living within the communities. Sometimes, community nurses can give injections as well



Figure 10: A sick relative being carried to the nearest PHC in Dwarzack

as administer drips in the home. This is usually before the individual makes his first visit to the PHC for the ailment. Alternatively, some patients claimed that they occasionally arrange secretly to continue receiving treatment from community nurses after their first PHC visit. Often, this is to cut down on their expenditures on health. Drug peddlers can also be hired to administer injections or drips in the home while herbalists may be retained for such illnesses as stomach aches, hernia, infertility, mental illness, ulcer, malaria, and blindness. In all such cases, referrals can be made to higher level providers (e.g. hospitals) for more severe conditions.

3.5 Key Health Service Providers

Both drug peddlers and traditional healers are the more common health providers since they already live within the communities and therefore, can be easily accessed. This is especially the case in Cockle Bay which does not still have a locally based PHC. Often, because residents always have to walk (or travel) long distances (between 30 to 40 minutes) to access the nearest PHC, they would prefer to make do with providers who are easily available. Even though TBAs also exist within the communities, their role in health service delivery has declined sharply owing to a ban recently placed on them by the government. Nevertheless, they still provide services to pregnant mothers especially those living in areas with mobility challenges. This view was articulated by one community chief in Moyiba as follows:

“If a pregnant woman living up the hills is in labour at night and people try to bring her to the hospital, it is more likely that she will deliver on the way. So, if the TBAs are around, they will deliver them and then send them to the hospital the next day”.

Particularly in Cockle Bay, the occurrence of issues such as fistula has been linked to problems of mobility and accessibility. This view was supported by a health worker in the Aberdeen Women’s Centre who additionally associate the incident (fistula) with delivery outside formal healthcare systems.

“I currently don’t work at PCMH but I have colleagues there...I know that they receive badly managed cases of women who may have tried to deliver somewhere else which leads to complications before they could go to the hospital...and the fact that I work at the fistula unit makes me receive fistula patients as well. You know it looks like even in Freetown where access is relatively better and the roads are not as bad...we still receive complications related to fistula. So that’s why I believe that women still seek care from people who are not qualified.”

There also PHCs (state and private) in three of the settlements (Portee-Rokupa, Dwarzack and Moyiba). Yet some of the PHCs are either too small compared to the number of visitors they receive per day; understaffed; lack the appropriate amenities, or; the staff not too welcoming. Other health service providers include nurses living within the community and a few pharmacies/drug stores in the neighbourhood. While there are hospitals nearby Portee-Rokupa and Moyiba, their focus is mostly on providing emergencies and referrals from the PHCs. These hospitals can sometimes do minor surgeries but refer major conditions to the Connaught hospital.

3.6 Satisfaction With Health Service

Respondents differed in response to their satisfaction with the healthcare services they receive. However, while the respondents seemed to be fairly satisfied with all the health facilities, satisfaction level seemed

to be higher for the private PHCs (Arab, and Mercy Ship) than the public PHCs. Whereas all the PHCs were known to provide patients with drugs, attend to their health conditions and also, treat them nicely, the private PHCs were identified to be more caring since, apart from providing more drugs, the health workers give more attention to the patients. They are also alleged to be more accommodating in addition to treating people on time. While some of these virtues were also associated with a few public PHCs, on the whole, it was found that some nurses in public PHCs can sometimes be harsh and rude especially to women in delivery and may request money indirectly. Some do not only pay less attention to patients but do not treat them on time. To confirm this view, a female community leader commented as follows:

“If I choose to go to the hospital with my painful knees now, and the nurses do not talk to me impolitely, I won’t be happy. When people go to the PHC/hospital, they go there with heavy pains, so they expect kind words from health workers. If people are talked to politely, they will be calmed by such caring words, but if they are harsh the patients will be angry”.

In Cockle Bay, some respondents are dissatisfied about the lack of drugs or because they do not receive the right treatment at the PHUs. They also complain about health workers giving preferential treatment to the affluent.

3.7 State of Health Infrastructure

The PHCs which are mostly between 4 to 6 rooms are regularly open with the nurses always on duty. However, unlike the TBAs who usually lack sufficient birth kits/equipment and mattresses for delivering mothers, the PHCs are usually equipped with solar lights, beds, drugs, electricity/generator and water facilities even though they continually struggle with the latter. Some PHCs may have a small unit which is used as a pharmacy, a general health unit and other units for family planning, delivery, vaccination, nutrition, HIV tests, and adolescent care. Most PHCs struggle to meet demand for drugs. According to health workers, drugs are supplied but they easily run out especially in areas where the population threshold has been exceeded. More often, while drug supplies in PHCs are expected to last for three months, the longest they usually last is two months. Moreover, drugs like paracetamol and antibiotics do not last more than a month. This view was articulated by a community health worker in Moyiba as follows:

“At the moment, the catchment population is huge. Ideally, health centres within the district are supposed to be supplied drugs that would last for three months, but some of the drugs do not even last for a week...I think the district office does not get sufficient drugs to be supplied because the health facilities are plenty, so when they do the matrix, the drug supplies remain very small.”

Even when drugs are available, only designated categories (e.g. pregnant women, lactating mothers and under 5) are provided with free treatment under the free health care programme. However, even with this category, certain conditions are exempt from receiving free drugs/treatment (e.g. blood transfusion, heart attacks) and patients would need to be giving prescriptions to buy drugs from the PHC pharmacy at ‘cost recovery’ or elsewhere. All other visitors are required to pay for health services including the payment of doctor’s consultation fees. While this practice is similar with that of the Arab PHCs, the latter are renowned for providing more drugs/treatment at a lesser cost. Compared with the public PHCs, some Arab PHCs serve their patients with food. Some are also equipped with labs and so, can do scans, tests, check-ups and minor operations.

While there are nurses, not everyone is on salary since some only works as volunteers. Because of the generally poor conditions of service in public PHCs, some workers are not fully committed to their jobs resulting often in increases in wait times. Some even require visitors to pay for their personal record

books or ask for kickbacks when they attend to cases they report. A major constraint is that most PHCs do not have sufficient rooms/space; lack freezers to keep vaccines; do not have scales for weighing children; and lack ambulance services. This is in spite of the support they sometimes receive from a few health NGOs (e.g. GOAL-SL) and UNICEF. The problem of bedding was specifically identified in the DHIS2 data as a key challenge for the PHC in Moyiba. For example, whereas the Murray Town, Dwarzack and ISCON PHCs each had three delivery beds between April to September 2018, that in Moyiba had only 1 bed.

While the referral hospitals are generally better equipped than the PHCs, they also face several of the constraints faced by the PHCs. These include the lack of vital equipment (e.g. diagnostic machines), stockouts on drug supplies, insufficient bedding spaces, poor toilet conditions as well as problems of water and electricity supply. Moreover, several of the staff are volunteers. Nevertheless, most hospitals provide medical, surgery, obstetrics, gynaecology, paediatrics, HIV and TB services. Generally, hospitals operate outpatient and observation units for less severe referral cases since priority for treatment is mostly giving to more severe conditions. Referral hospitals can also refer more serious conditions to the Connaught hospital which is the lead hospital in the country.

3.8 Barriers to Healthcare Access

Several barriers were found to limit people's access to health care. These same views which were highlighted by the public officials interviewed have been categorised into the following main areas: high charges for treatment, long distances, rugged terrain (see Figure 11), poor roads/mobility, long wait times and social/cultural barriers. Nevertheless, it was observed that the high cost involved in seeking health care was the main limiting factor for most people. While some people are already covered by the free health care, they are sometimes required to pay extra in order to be given good treatment. This is often in addition to payments for record cards, consultation and other conditions not covered by the free health care. Often, people who do not qualify for free health care have to hold between Le 50,000 to Le 300,000 depending on their health condition. Therefore, even when people have need for health services, they do not often go to the PHCs/hospitals and would prefer either to self-medicate or to seek the services of informal providers. This view was supported by one CBO representative as follows:

"People can't cope with healthcare charges. If someone has between Le 5,000 and Le 10,000 and say, you go to the pharmacy, all you pay for is the drug and the pharmacist would give you instructions on how to administer the drug and that ends it. Alternatively, in the PHC/hospital, you will be required to not only pay for the drugs which can be sold at between Le 50,000 to Le 300,000 but also consultation and record card fees".

Moreover, because the drugs easily run out, they are usually less inclined to visit the PHCs since all they will get is a prescription to purchase the drugs elsewhere.

The problem of distance was only identified in Cockle Bay and the two hilly settlements of Dwarzack and Moyiba. As Cockle Bay has yet no PHC, residents sometimes have to walk/travel long distances to access the nearby PHCs. This is similarly the case with Dwarzack and Moyiba where, owing to the rapid expansion of the settlements, many dwellings are already far away from the existing PHC. For some residents up the hills, it can take between 40 minutes and 1 hour to walk to the nearest PHC. Therefore going to the PHC is not only expensive (especially by bikes) but also time consuming and strenuous especially for pregnant women. In both Dwarzack and Moyiba, the problem of distance is exacerbated by the rugged terrain which residents up the hills have to always struggle with whenever they have to visit the nearest PHC. As was highlighted by one respondent, some pregnant women up the hills in Moyiba rarely access the PHC to avoid complications that may result from walking down the difficult



Figure 11: A photo of the Moyiba hillside area

terrain. Distance is further worsened by poor access roads resulting in high transport cost and delays in accessing health care resulting often in some mothers delivering on the way to the centre. Even in the PHCs, long wait times cause people to avoid going visiting PHCs. This is more so, the case for people from low socioeconomic backgrounds who can rarely afford to give tips to the health workers. Sometimes people have to wait all day for only for simple tests or are required to return on the next day for the result.

The range of barriers to accessing healthcare in informal settlements and the many decisions people make in how they access healthcare were corroborated by participants in the validation workshops. However, a few other barriers which prevent some from accessing formal healthcare were pointed. These relate to the role of religious and cultural beliefs, gender imbalances in health facilities and health workers breaching confidentiality – a significant barrier to young women seeking family planning services. Participants of validation workshops in the communities generally perceived nurses' attitudes to be negative, putting people off seeking their care – though it was acknowledged that this might sometimes be due to high workload, lack of formal enrolment and thus low motivation.

3.9 Accountability Mechanisms

To understand the accountability systems for healthcare delivery, information was sought on the existing communication and redress mechanisms between care seekers and providers. A key finding was that communication between communities and the PHUs is rare. The main channel devised by the government for linking PHUs and the community is the Community Health Management Committees (CHMCs) which consist of key stakeholders drawn from both the community and the PHU. Often, CHMCs mediate between PHUs and the community by informing residents about drug supplies, the quantity received and drug stockouts. They also have responsibility for overseeing and reporting to the community on the use. However, because the CHMCs are usually loose organisation of members

with rarely any clear idea of why the group was formed, they are mostly not effective. Therefore, health messages are communicated often, in diverse ways consisting of NGOs, health workers and Community Health Workers (CHWs). Yet, apart from providing health information broadly, these other communication channels have rarely focussed on promoting health accountability issues. For example, in Portee-Rokupa, BRAC occasionally carry out health education and sensitisation messages focussing on pregnant women. NGOs are also known to have been very active in working with communities to fight cholera. Moreover, the EPI health workers also carry out community outreach programmes specifically on immunization issues. Nurses in the Dwarzack and Moyiba PHUs are similarly known to have made community visits focusing on health education and to encourage pregnant mothers to deliver in PHCs. This is similarly the case with CHWs who occasionally carry out community sensitisation and education efforts. However, apart from the sensitization messages, there is so far, no deliberate effort on improving the accountability mechanisms of the PHUs.

Likewise, it was found that there is rarely any mechanism for reporting grievances in the community. Whereas the PHC leads expect to hear complaints about the health workers, the residents do not know who to report to. Therefore, residents cannot report the health workers but just grumble about their mistreatment to themselves. A few people who made attempts to reach the PHU lead with their complaints only felt disappointed because they were prevented from reaching her. Therefore, some will resort to airing their grievances on the radio to the displeasure of the PHU leads who always feel ignored. For example, the PHU lead in Portee-Rokupa who felt very disgusted about this practice is reported to have fired some nurses after receiving complaints that they asked for tips from patients. Nevertheless, her act seemed like an isolated case. Sometimes in Dwarzack, complaints are made to the community chief who later takes it up with the PHU workers. During the IDI, a health worker in the Murray Town PHC claimed as follows:

“We go to the doctor to relay the complaints made by patients but before we go to that level we talk to the individual nurses first and find out from them what had happened, but you know it’s usually not easy for doctors not to back their staff when complaints are made to them.”

Additionally, joint PHU-community meetings are sometimes held where people can air their grievances and the issues discussed. In Moyiba, CHMC’s are known to have worked as redress mechanisms at some point in the past but this is no longer the case.

3.10 Community Health Priorities

Nearly all residents are keen to have their current health conditions improved. However, the main priorities differed widely among the settlements. For example, the main health priority in Cockle Bay is the provision of a PHC since the community is the only study location that did not have a resident health facility. Other priorities relates to improvements in such environmental health issues as wastes, water and sanitation. To confirm this view, one CBO representative expressed as follows:

“The waste situation and the drinking water system, if addressed can solve the health problem in the community. The illnesses will reduce and the health problems will be addressed. Those are the two things. The unavailability of a waste dumpsite affects the community, alright? And the water, we don’t have proper drinking water in the community. It affects us more”.

In Portee-Rokupa, the main health priority is to support the construction of more effective drainage ways including the cleaning of the drains. This will be to reduce the spilling and accumulation of wastes especially in precarious areas of the settlement. A similar view was shared by some health workers who consider the key health priorities to include improvements in the waste, housing, water and sanitations

since by so doing, most of the health-related problems in all four communities will be addressed. A few health workers however prioritise health education initiatives for communities relating specifically to health risk factors. In their view, mothers are more likely to follow health and nutrition guidelines if they are clearly informed about the reasons for doing so and the associated risks of their inaction. Health education also has the prospect to dispel much of the myths associated with certain health conditions in the community. Both Dwarzack and Moyiba each prioritised the provision of an additional PHC since the catchment areas already served by the existing PHCs have expanded such that particular areas already seem excluded either because of distance or the difficult terrain. Further priorities included improvements in waste management, water and sanitation and mobility. Access to quality health services delivery was emphasised in all the settlements.

During the one day validation workshop, participants additionally identified concrete priorities for dealing with the barriers to accessing healthcare. These include the need to consider gender balance in the recruitment of health workers to ensure that women and men do not shy away from visiting health facilities; providing all health workers with ethics training; safeguarding patient confidentiality for people seeking care – and this could perhaps be accompanied by strict penalties for those who breach confidentiality; greater recruitment of trained health workers to reduce the workload and thus boost motivation among those already working, and; ensuring the inclusion of religious leaders in health sensitization activities.

Chapter IV: Conclusion and Recommendations

4.1 Conclusion

The findings show that in Freetown, informal settlement dwellers are affected by a range of health problems which are directly linked to the places where they live. The key challenges related to dwellings and their immediate neighbourhoods in precarious informal settlements include poor toilets, poor and inadequate housing, water and sanitation difficulties and the health risks associated with energy use and other livelihood activities. This condition is mediated by the geographic location of settlements and the constraint posed by the topography. Overall, the living condition in all four settlements is appalling. Health outcomes are also poor owing largely to the failure of delivery of services of all kinds (water, sanitation, housing, health) to address the deteriorating conditions and to prevent such places from becoming incubators for the spread of diseases beyond the settlements to the city population as a whole.

The key lessons from this study can be summarised as follows:

1. In the face of rapid urbanisation, problems of access to land and tenure security has intensified the proliferation of informal settlements (unbalanced growth) in ways that the ability of government to provide appropriate services is already under threat. Therefore, the right to basic services remain unrealised for the majority of poor and vulnerable people since tenure insecurity and the lack of appropriate space inhibits the expansion of service infrastructure. This reality underlies the appalling living conditions in informal settlements and hence, the health situation.
2. There is incredible effort by the government to improve the health condition of people with the setting up of PHCs in some informal settlements. There are also a few NGOs and private sector actors partnering with the government on this. However, the services provided (e.g. drugs) and the accompanying health infrastructure (e.g. delivery beds) do not meet the current (and maybe long term) needs and affordability of poor and vulnerable groups. Overcoming drug scarcities and water and electricity outages remain a big challenge to most PHCs.
3. The location of informal settlements and the nature of the terrain are critical for the health risks faced in different communities including their access to health care and the provision of services such as water. These factors are yet to be considered when making decisions about population thresholds to be served by PHCs.

4.2 Recommendations

1. Much of the health conditions reported by residents in informal settlements in Freetown are linked to the poor environmental conditions in which they live. There is need therefore, to promote slum upgrading programmes which will be a deliberate effort to improve the locations as well as make them better serviced.
2. The study found significant gaps between current healthcare provision and the health needs of the people either because of limited or untimely allocation of services. It is recommended that public health planning gives special consideration to the needs of the poor and vulnerable informal settlement dwellers who are constantly faced with health problems associated with their poor living conditions.
3. Disease burden in informal settlements is mostly borne by women (especially pregnant women) and children because of their low immunity and vulnerability to environmental conditions. While they already benefit from the Free Health Care, efforts need to be intensified to increase access especially to people living in hard-to-reach areas This also include those living far away from the nearest PHC.

4. 4. While health care seeking by residents is influenced largely by cost, access and perceptions of poor quality, their growing demand for services by informal providers may also not be unconnected to the limited ability of some (residents) to process the valuable health messages sent out by the government and NGOs. It is recommended therefore that the government not only recruit more CHWs and improve their working conditions but to also strengthen their relations with the CHMCs (and other health volunteers) to ensure that they work mutually to improve community awareness and to deal with the local health problems in ways that meet the needs and aspirations of the residents.

Annexes

ANNEX A: Interview Guide For Policy Makers

Sierra Leone Urban Research Centre in partnership with John Hopkins University and the Institute of Development Studies

Interview Guide for Policymakers

Research Topic: The health impact of the living conditions of people living in informal settlements

Institution	
Name of interviewee	
Position in institution	
Date	
Duration	

Good morning/afternoon and welcome to this interview to be conducted by the Sierra Leone Urban Research Centre. This interview is part of our research work in informal settlements in Freetown, aimed at investigating the living conditions; the existing environmental risks in the community, and; how they impact on the health status of people. Questions in this interview are categorized into three themes; living conditions in informal settlements, health status of community residents and access to health services. Please feel free to share your honest thoughts in this interview.

For the purpose of capturing details of this interview, I am kindly soliciting your permission to allow me record the interview on tape. However, whatever is recorded will not be released to anyone and will be used only for the purpose of analyzing the outcome of the interview. You may seek clarification on anything you have doubts about before we proceed with the interview.

INTRODUCTION

We're here today to talk about living conditions and health for people living in informal settlements. I'm going to start by asking you some questions about yourself.

1. Please tell me about yourself. What is your role in this institution?
 - a. How long have you worked here?

LIVING CONDITIONS

Now I'm going to ask you questions about the living conditions of people living in informal settlements and the services your institution provides to them.

2. What kind of work is your institution responsible for around the living conditions in Freetown?
PROBE: toilets, water, waste management, energy use, tenure regularization, environmental conditions
3. What kind of work is your institution responsible for around the living conditions in in-formal settlements? [ASK FOR RELEVANT DOCUMENTS]
PROBE: toilets, water, waste management, energy use, tenure regularization, environmental conditions
 - a. How does this vary by informal settlement communities?
 - b. Is this work part of your mandate? Why/why not?
 - c. How long have you been performing this work?
4. What are the specific needs around living conditions that informal settlements are facing?
 - a. How are you aware of these needs?

- b. How do these needs vary by community or by population group?
5. Which of these needs (around living conditions in informal settlements) does your institution work on?
- a. Why are you working on these issues?
 - b. Which of these needs does your institution prioritize? Why?

HEALTH CONDITIONS

Now I'm going to ask you questions about the health conditions of people living in informal settlements and the services your institution provides to them.

6. What kind of work is your institution responsible for around health in Freetown?
PROBE:
7. What kind of work is your institution responsible for around health in informal settle-ments?
PROBE:
- a. How does this vary by informal settlement communities?
 - b. Is this work part of your mandate? Why/why not?
 - c. How long have you been performing this work?
8. What are the most common health problems in informal settlements?
- a. How do these health problems vary by community or population group?
9. What do you think about the access to health services that people in informal settlements have?
- a. How do these needs vary by community or by population group?
10. What are the specific needs around health that informal settlements are facing?
PROBE: access to services, cost, transport/distance, services offered
- a. How are you aware of these needs?
 - b. How do these needs vary by community or by population group?
11. Which of these needs (around health in informal settlements) does your institution work on? [ASK FOR RELEVANT DOCUMENTS]
- a. How does this vary by informal settlement communities?
 - b. Is this work part of your mandate? Why/why not?
 - c. Which of these needs does your institution prioritize? Why?

GENERAL

Now I'm going to ask you more general questions about your institutions work in informal settlements.

12. For the activities your institution is doing to improve living conditions for people in in-formal settlements, how well are they meeting the needs of people?
- a. How do you know?
 - b. How do communities or their members let you know their grievances?
 - c. How are community grievances addressed?
13. What could your institution do differently to improve the conditions of people living in informal settlements?
14. Who else is working on improving conditions for people living in informal settlements?
- a. Do you partner with any of them? Why/why not?
15. Is there anything else that we haven't talked about that you think is relevant?

THANK YOU

ANNEX B: Community Interview Guide

Sierra Leone Urban Research Centre in partnership with John Hopkins University and the Institute of Development Studies

Interview Guide on Living Conditions of people in informal settlements and impact on their health Interview information

Institution	
Name of interviewee	
Position in institution	
Date	
Duration	

Good morning/afternoon and welcome to this interview to be conducted by the Sierra Leone Urban Research Centre. This interview is part of our research work in informal settlements in Freetown, aimed at investigating the living conditions; the existing environmental risks in the community, and; how they impact on the health status of people. Questions in this interview are categorized into three themes; living conditions in informal settlements, health status of community residents and access to health services. Please feel free to share your honest thoughts in this interview.

For the purpose of capturing details of this interview, I am kindly soliciting your permission to allow me record the interview on tape. However, whatever is recorded will not be released to anyone and will be used only for the purpose of analyzing the outcome of the interview. You may seek clarification on anything you have doubts about before we proceed with the interview.

INTRODUCTION

We're here today to talk about living conditions and health for people living in informal settlements. I'm going to start by asking you some questions about yourself.

1. Please tell me about yourself. What is your role in this institution?
 - a. How long have you worked here?

LIVING CONDITIONS

Now I'm going to ask you questions about the living conditions of people living in informal settlements and the services your institution provides to them.

2. What kind of work is your institution responsible for around the living conditions in Freetown?
PROBE: toilets, water, waste management, energy use, tenure regularization, environmental conditions
3. What kind of work is your institution responsible for around the living conditions in in-formal settlements? [ASK FOR RELEVANT DOCUMENTS]
PROBE: toilets, water, waste management, energy use, tenure regularization, environmental conditions
 - a. How does this vary by informal settlement communities?
 - b. Is this work part of your mandate? Why/why not?
 - c. How long have you been performing this work?
4. What are the specific needs around living conditions that informal settlements are facing?

- a. How are you aware of these needs?
- b. How do these needs vary by community or by population group?
- 5. Which of these needs (around living conditions in informal settlements) does your institution work on?
 - a. Why are you working on these issues?
 - b. Which of these needs does your institution prioritize? Why?

HEALTH CONDITIONS

Now I'm going to ask you questions about the health conditions of people living in informal settlements and the services your institution provides to them.

- 6. What kind of work is your institution responsible for around health in Freetown?
PROBE:
- 7. What kind of work is your institution responsible for around health in informal settlements?
PROBE:
 - a. How does this vary by informal settlement communities?
 - b. Is this work part of your mandate? Why/why not?
 - c. How long have you been performing this work?
- 8. What are the most common health problems in informal settlements?
 - a. How do these health problems vary by community or population group?
- 9. What do you think about the access to health services that people in informal settlements have?
 - a. How do these needs vary by community or by population group?
- 10. What are the specific needs around health that informal settlements are facing?
PROBE: access to services, cost, transport/distance, services offered
 - a. How are you aware of these needs?
 - b. How do these needs vary by community or by population group?
- 11. Which of these needs (around health in informal settlements) does your institution work on? [ASK FOR RELEVANT DOCUMENTS]
 - a. How does this vary by informal settlement communities?
 - b. Is this work part of your mandate? Why/why not?
 - c. Which of these needs does your institution prioritize? Why?

GENERAL

Now I'm going to ask you more general questions about your institutions work in informal settlements.

- 12. For the activities your institution is doing to improve living conditions for people in informal settlements, how well are they meeting the needs of people?
 - a. How do you know?
 - b. How do communities or their members let you know their grievances?
 - c. How are community grievances addressed?
- 13. What could your institution do differently to improve the conditions of people living in informal settlements?
- 14. Who else is working on improving conditions for people living in informal settlements?
 - a. Do you partner with any of them? Why/why not?
- 15. Is there anything else that we haven't talked about that you think is relevant?

THANK YOU

ANNEX C: Community Interview Guide

Sierra Leone Urban Research Centre in partnership with John Hopkins University and the Institute of Development Studies

Interview Guide on Living Conditions of people in informal settlements and impact on their health Interview information

Community	
Name of interviewee	
Position in community	
Date	
Duration	

Good morning/afternoon and welcome to this interview to be conducted by the Sierra Leone Urban Research Centre. This interview is part of our research work in informal settlements in Freetown, aimed at investigating the living conditions; the existing environmental risks in the community, and; how they impact on the health status of people. Questions in this interview are categorized into three themes; living conditions in informal settlements, health status of community residents and access to health services. Please feel free to share your honest thoughts in this interview.

For the purpose of capturing details of this interview, I am kindly soliciting your permission to allow me record the interview on tape. However, whatever is recorded will not be released to anyone and will be used only for the purpose of analyzing the outcome of the interview. You may seek clarification on anything you have doubts about before we proceed with the interview.

Theme one Living conditions in informal communities

This part captures responses from participants on key indicators on living conditions in their communities. It typically elicits their views on such conditions within households and neighbourhoods as materials used for building houses, number of rooms and tenure, household and neighbourhood sanitation, water quality and access, types of energy used, livelihood patterns, community perceptions of risks and social conditions related to crime, noise etc .

1. What are the types of houses in which people live in this community? What is the average number of people sharing a room or a household in this community?
2. Can you please explain the tenure arrangements related to owning or living in a house in this community?
3. Please describe the types of toilet/bathing facilities used in this community
4. What is the overall quality and quantity of toilet facilities in this community?
5. How effective is the current system for waste disposal in this community?
6. How would you describe the current situation in relation to the community's access to water?
7. What are the main energy sources used by households for cooking and lighting? Do energy sources

emit smoke during use? What are your thoughts about the safety of energy sources used in this community?

8. What are the various kinds of livelihood activities people engage in? What are the risks associated with livelihood activities people are engaged in this community?

Theme two

Health status/concerns of communities

The health section makes inquiries about the kinds of illnesses frequently reported (vector borne, water borne, air borne, etc) that are of most common concern to the communities. It also seeks to provide answers to community perceptions and concerns about the access and quality of health care and how they impact on overall health status.

9. What are the general concerns about health situation in this community?

10. What are the health conditions frequently reported at household and community levels? How likely are community members to seek health care services for these conditions?

11. What do you consider as important factors that pose risks to people's health in this community? (Specify health risks)

12. How do households come in contact with health risks?

13. How could the community mitigate those health risks?

14. In what ways do health risks influence household health outcomes?

15. Which categories of people are most/least affected by health risks in this community?

16. What are the top 1-2 things that should change to improve health in this community?

Theme three

Access to health services

This sub-section of the discussion embraces issues such as access to health services by communities with underlying indicators like distance, cost and time, quality of care, infrastructure, health worker availability, training and time allocated to patients, daily operational time of health facilities, available drugs and diagnosis, ownership or provider status (private, public, NGO, formal, informal), health seeking behaviors, trust and accountability.

17. What is the general situation with access to health services in this community, with respect to distance, cost of services, and estimated waiting time?

18. How would you describe the quality of services available in the community? (eg. Satisfaction with services, infrastructure, waiting time, fees etc.?)

19. Where do residents in this community go to access care? Are these private/public facilities? Informal providers?

20. What are the current processes for accountability between the community and health facilities (health care provision, surveillance etc.) What happens if there is a problem with the health care service or the environment? Who do people go to for assistance in such situation?

ANNEX D: Community Interview Guide

Sierra Leone Urban Research Centre in partnership with John Hopkins University and the Institute of Development Studies

Interview Guide on Living Conditions of people in informal settlements and impact on their health Interview information

Community	
Name of interviewee	
Position in community	
Date	
Duration	

Good morning/afternoon and welcome to this interview to be conducted by the Sierra Leone Urban Research Centre. This interview is part of our research work in informal settlements in Freetown, aimed at investigating the living conditions; the existing environmental risks in the community, and; how they impact on the health status of people. Questions in this interview are categorized into three themes; living conditions in informal settlements, health status of community residents and access to health services. Please feel free to share your honest thoughts in this interview.

For the purpose of capturing details of this interview, I am kindly soliciting your permission to allow me record the interview on tape. However, whatever is recorded will not be released to anyone and will be used only for the purpose of analyzing the outcome of the interview. You may seek clarification on anything you have doubts about before we proceed with the interview.

Theme one Living conditions in informal communities

This part captures responses from participants on key indicators on living conditions in their communities. It typically elicits their views on such conditions within households and neighbourhoods as materials used for building houses, number of rooms and tenure, household and neighbourhood sanitation, water quality and access, types of energy used, livelihood patterns, community perceptions of risks and social conditions related to crime, noise etc.

1. What are the types of houses in which people live in this community? What is the average number of people sharing a room or a household in this community?
2. Can you please explain the tenure arrangements related to owning or living in a house in this community?
3. Please describe the types of toilet/bathing facilities used in this community
4. What is the overall quality and quantity of toilet facilities in this community?
5. How effective is the current system for waste disposal in this community?
6. How would you describe the current situation in relation to the community's access to water?
7. What are the main energy sources used by households for cooking and lighting? Do energy sources

emit smoke during use? What are your thoughts about the safety of energy sources used in this community?

8. What are the various kinds of livelihood activities people engage in? What are the risks associated with livelihood activities people are engaged in this community?

Theme two

Health status/concerns of communities

The health section makes inquiries about the kinds of illnesses frequently reported (vector borne, water borne, air borne, etc) that are of most common concern to the communities. It also seeks to provide answers to community perceptions and concerns about the access and quality of health care and how they impact on overall health status.

9. What are the general concerns about health situation in this community?

10. What are the health conditions frequently reported at household and community levels? How likely are community members to seek health care services for these conditions?

11. What do you consider as important factors that pose risks to people's health in this community? (Specify health risks)

12. How do households come in contact with health risks?

13. How could the community mitigate those health risks?

14. In what ways do health risks influence household health outcomes?

15. Which categories of people are most/least affected by health risks in this community?

16. What are the top 1-2 things that should change to improve health in this community?

Theme three

Access to health services

This sub-section of the discussion embraces issues such as access to health services by communities with underlying indicators like distance, cost and time, quality of care, infrastructure, health worker availability, training and time allocated to patients, daily operational time of health facilities, available drugs and diagnosis, ownership or provider status (private, public, NGO, formal, informal), health seeking behaviors, trust and accountability.

17. What is the general situation with access to health services in this community, with respect to distance, cost of services, and estimated waiting time?

18. How would you describe the quality of services available in the community? (eg. Satisfaction with services, infrastructure, waiting time, fees etc.?)

19. Where do residents in this community go to access care? Are these private/public facilities? Informal providers?

20. What are the current processes for accountability between the community and health facilities (health care provision, surveillance etc.) What happens if there is a problem with the health care service or the environment? Who do people go to for assistance in such situation?

ANNEX E: Focus Group Guide

Sierra Leone Urban Research Centre in partnership with John Hopkins University and the Institute of Development Studies

Focus Group Guide on Living Conditions of people in informal settlements and impact on health FGD information

Community	
FGD type	
Number of participants	
Date	
Duration	

Opening Remarks

Good morning/afternoon and welcome to this discussion. Thanks for your time to participate in this discussion and your views expressed are very important in helping us understand the living conditions in this community and how they relate to health. My name is..... From the Sierra Leone Urban Research Centre, and I have my colleagues here who will be performing various roles during this discussion session, whom I would now introduce to you.....

The purpose of this discussion is to find out from you the different kinds of environmental and household risks that exist in this community and how they impact on the health status of community people. We have a few questions categorized into three themes related to what we intend to find out. Please feel free to share your thoughts on the issues discussed as no response will be considered wrong. We want to be very respectful to everyone, so you can please raise your hand if you want to make a point, but please do not interrupt anyone while talking. The discussion should not last more than one hour.

For the purpose of capturing details of the discussion, we are soliciting your kind permission to allow us record the discussion on tape. However, whatever is recorded will not be released to anyone and will be used only for the purpose of analyzing the outcome of the discussion and for note taking. We have also placed name tags on your shirts but that is only for ease of reference during the discussions. Your names will not be included in any of the results of this research. You can seek clarification on anything you have doubts about before we proceed to the interview session. However, you also have the right to withdraw from the discussion if so desire.

Interview session

Inform participants about the start of the start of the discussion, ensure that it starts shortly after the introductory courtesies. Make sure that everyone is seated and ready to participate. The recording device must have been tested well before hand to ensure that it is in perfect working order. Note takers must also be alert to take detailed account of the proceedings.

Introduction

At this point, I'll like everyone to introduce themselves, including their role in the community.

Theme one

Living conditions in informal communities

This part captures responses from participants on key indicators on living conditions in their communities. It typically elicits their views on such conditions within households and

neighborhoods as materials used for building houses, number of rooms and tenure, household and neighborhood sanitation, water quality and access, types of energy used, livelihood patterns, community perceptions of risks and social conditions related to crime, noise etc.

Note: please ask sub questions following the additional guiding points in the parenthesis

1. How would you describe the general housing condition in this community? (Types of houses, building materials, number of rooms per household, tenure etc.).
2. Please tell me how the current state of sanitation in this community looks like? (access to toilet facilities, number of households using a toilet, sanitary conditions of toilets, types of toilets in use)
3. In what ways does the community dispose of its wastes? (garbage collection and disposal methods, place of disposing wastes, types of wastes disposed, average distance of dumpsites from houses)
4. What is the current status of the community's access to water facilities? (distance to water points, quality of water/odour and colour, cost to access water, use of water for sanitation etc.).
5. what are the main energy sources used by households for cooking and lighting? Do energy sources emit smoke during use?
6. Can you please tell me the various kinds of livelihood activities in this community? How do these vary for men and women?

Theme two

Health status/concerns of communities

The health section makes inquiries about the kinds of illnesses frequently reported (vector borne, water borne, air borne, etc.) that are of most common to the communities. It also seeks answers to community perceptions and concerns about health conditions and living conditions related to poor environment and sanitation.

7. What health conditions does your family experience? Does this vary with season?
8. How likely is it that you would go to a health facility for these health conditions? Why/why not?
9. Are other parts of your community (beyond your family) experiencing these same issues?
10. Where do you get your regular healthcare?
11. What do you consider as important factors that pose risk to people's health in this community? How do these vary over time?
12. How are households most affected by health risks? which categories of people are most/least affected by health risks in this community?
13. How important is health compared to all the other concerns your community faces? What are the top 1-2 things you think should change that would improve health in your community?

Theme three

Access to health services

This sub-section of the discussion embraces issues such as access to health services by communities with underlying indicators like distance, cost and time, quality of care, infrastructure, health worker availability, training and time allocated to patients, daily operational time of health facilities, available drugs and diagnosis, ownership or provider status (private, public, NGO, formal, informal), health seeking behaviours, trust and accountability.

14. What is the general situation of access to health services in this community? (distance to gain access, cost of services and estimated waiting time) Is this different for men and women, young and old?
15. How would you describe your level of satisfaction when you receive care from health workers in this community? (behavior of health workers to patients, and counselling and drug instruction, availability of services/drugs)
16. What is the state of the health infrastructure in your community (availability of water, electricity,

diagnostic equipment, beds, drugs and room spaces)

17. What is the daily operational time of health facilities in this community? (Do they operate night shifts? e.g. open for emergencies at night? If not, how does it affect health access? How well do those times meet the most common needs of the community? Where else do you go if the health facility is not open when you need it?

18. How does the community hold the health facilities accountable to the people? (health care provision, surveillance etc.) How responsive is the health facility to this?

19. What are the other alternatives of health care provision in this community? (what are the main preferences, and why? Do you ever seek care from informal providers in your community, like drug sellers, traditional birth attendants, religious healers etc.? Please tell us the reasons for using these providers (i.e. for which health conditions or under which circumstances?)

20. Who do you go to/who do you trust to help you if you have a problem with the health service or something dangerous in the surrounding environment?

Participant information

No	Name of participant	Gender	Age	Occupation	Current position in community	Years in community
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

ANNEX F: Interview with Policy Makers

Sierra Leone Urban Research Centre in partnership with John Hopkins University and the Institute of Development Studies

Interview Guide on Living Conditions of people in informal settlements and impact on their health
(For Healthcare Workers)

Interview information

Community	
Name of interviewee	
Position in community	
Date	
Duration	

Good morning/afternoon and welcome to this interview to be conducted by the Sierra Leone Urban Research Centre. This interview is part of our research work in informal settlements in Freetown, aimed at investigating the living conditions; the existing environmental risks in the community, and; how they impact on the health status of people. Questions in this interview are categorized into three themes; living conditions in informal settlements, health status of community residents and access to health services. Please feel free to share your honest thoughts in this interview.

For the purpose of capturing details of this interview, I am kindly soliciting your permission to allow me record the interview on tape. However, whatever is recorded will not be released to anyone and will be used only for the purpose of analyzing the outcome of the interview. You may seek clarification on anything you have doubts about before we proceed with the interview.

Theme one Living conditions in informal communities

This part captures responses from participants on key indicators on living conditions in their communities. It typically elicits their views on such conditions within households and neighborhoods as materials used for building houses, number of rooms and tenure, household and neighborhood sanitation, water quality and access, types of energy used, livelihood patterns, community perceptions of risks and social conditions related to crime, noise etc .

1. How would you describe the general living conditions of people in this community? (types of houses, quality of water and sanitation facilities, waste disposal system, energy for cooking and risks related to livelihoods)

Theme two Health status/concerns of communities

The health section makes inquiries about the kinds of illnesses frequently reported (vector borne, water borne, air borne, etc) that are of most common concern to the communities. It also seeks to provide answers to community perceptions and concerns about the access and quality of health care and how they impact on overall health status.

2. What are the general concerns about health situation in this community?
3. What are the health conditions frequently reported at household and community levels? How likely are community members to seek health care services for these conditions? Where do they go when they need care?
4. What do you consider as important factors that pose risks to people's health in this community? (Specify health risks)
5. How do households come in contact with health risks?
6. How do community people mitigate those health risks?
7. In what ways do health risks influence household health outcomes?
8. Which categories of people are most/least affected by health risks in this community?
9. What are the top1-2 things that should change to improve health in this community?

Theme three **Access to health services**

This sub-section of the discussion embraces issues such as access to health services by communities with underlying indicators like distance, cost and time, quality of care, infrastructure, health worker availability, training and time allocated to patients, daily operational time of health facilities, available drugs and diagnosis, ownership or provider status (private, public, NGO, formal, informal), health seeking behaviors, trust and accountability.

10. What is the general situation with access to health services in this community, with respect to distance, cost of services, and estimated waiting time?
11. How would you describe the quality of services available in the community? (eg. Satisfaction with services, infrastructure, waiting time, fees etc.?)
12. Where do residents in this community go to access care? Are these private/public facilities? Informal providers?
13. What are the current processes for accountability between the community and health facilities (health care provision, surveillance etc.) What happens if there is a problem with the health care service or the environment? Who do people go to for assistance in such situation?

Thank You for your time

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ABOUT UCL/DPU

The Development Planning Unit, University College London, is an international centre specialising in academic teaching, research, training and consultancy in the field of urban and regional development, with a focus on policy, planning management and design. It is concerned with understanding the multi-faceted and uneven process of contemporary urbanisation, and strengthening more socially just and innovative approaches to policy, planning management and design, especially in the contexts of Africa, Asia, Latin America and the Middle East as well as countries in transition. The central purpose of the DPU is to strengthen the professional and institutional capacity of governments and non-governmental organisations (NGOs) to deal with the wide range of development issues that are emerging at local, national and global levels. In London, the DPU runs postgraduate programmes of study, including a research degree (MPhil/PhD) programme, six one-year Masters Degree courses and specialist short courses in a range of fields addressing urban and rural development policy, planning, management and design. Overseas, the DPU Training and Advisory Service (TAS) provides training and advisory services to government departments, aid agencies, NGOs and academic institutions. These activities range from short missions to substantial programmes of staff development and institutional capacity building. The academic staff of the DPU are a multi-disciplinary and multi-national group with extensive and on-going research and professional experience in various fields of urban and international development throughout the world. DPU Associates are a body of professionals who work closely with the Unit both in London and overseas. Every year the student body embraces more than 45 different nationalities.

To find more about us and the courses we run, please visit our website: www.bartlett.ucl.ac.uk/dpu

ABOUT IGDS/NU

The Institute of Geography and Development Studies (IGDS) represents one of the four innovative academic structures of the School of Environmental Sciences at Njala University (NU). The Institute runs both undergraduate and postgraduate programmes as well as provides opportunities for professional development and research. Its main concern is about promoting sustainable forms of development in Sierra Leone. The IGDS has a remarkable experience in the delivery of world leading research and teaching in Geography and development (urban and rural) issues. Its staff have engaged with practitioners, organizations and UN agencies through consultancies and other community outreach activities. It was as a result of the initiative of the IGDS to establish an urban planning unit to further their work on issues affecting people living in informal settlements that the Sierra Leone Urban Research Centre (SLURC) was formed.

ABOUT SLURC

The Sierra Leone Urban Research Centre (SLURC), based in Freetown, is a globally connected research centre created through a partnership between the Bartlett Development Planning Unit (University College London) and the Institute of Geography and Development Studies (Njala University) with funding by Comic Relief. SLURC aims to strengthen the research and analysis capacities of urban stakeholders in Sierra Leone; make urban knowledge available and accessible to those who need it, prioritizing residents of informal settlements; and, deliver world-leading research in order to influence urban policy and practice. However, SLURC was established as a financially independent centre within Njala University with a view of further integration in future. It was also thought that the SLURC could become a model of good practices that other part of the university could adopt.

To know more about SLURC, please follow us on Twitter: @SLURC_FT

Facebook: www.facebook.com/SLURC

Website: www.slurc.org

