

Appendix

Additional information on recruitment and training of research assistants

Research Assistants (RAs) were recruited through a competitive process and trained to administer the questionnaire. Training for all RAs was standardised and formally ran over 2 days. This involved; a formal presentation introducing the study, a review of all study processes and associated documents, a role play interview between the RAs using the questionnaire, a walk through the hospital to ensure the RAs gained an insight in to the surgical patients' journey and points at which OOP payments may be made or cost incurred and a review of clinical notes, ward admission books and theatre log books to ensure that all demographic and diagnostic information was accurately captured.

Appendix 1: Study questionnaire

Section 1: Demographics and admission questions

These questions are to be answered in conjunction with the patients notes and screening/recruitment sheet

Code	Question	Response
A1	Participant unique ID :	
A2	Discharge details	Care episode complete and discharged by Dr <input type="checkbox"/> Transfer to another healthcare facility <input type="checkbox"/> Self-discharging <input type="checkbox"/> If ticked state reason _____
A3	Where was the patient admitted from ?	Connaught Direct to trauma ward / A&E / OPD <input type="checkbox"/> Referral <input type="checkbox"/> specify _____ SOP (specialist outpatients) <input type="checkbox"/> Through direct contact <input type="checkbox"/> Transfer from the medical ward <input type="checkbox"/> Other <input type="checkbox"/> specify _____
A4	Where is the patient being discharged from ?	Connaught Trauma ward / A&E / OPD <input type="checkbox"/> Surgical ward <input type="checkbox"/> Annexe <input type="checkbox"/> Other <input type="checkbox"/> specify _____
A5	Age of patient	_____/ Don't know <input type="checkbox"/> / Adult (AD) <input type="checkbox"/>
A6	Sex	Male <input type="checkbox"/> Female <input type="checkbox"/>
A7	Usual residential location (address including district and from that state if urban or rural)	Address: _____ Urban <input type="checkbox"/> Rural <input type="checkbox"/>
A8	Does the patient meet any exemption criteria for free treatment ?	Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, state which criteria (tick as applicable) Aged under 5 years <input type="checkbox"/> Pregnant <input type="checkbox"/> Lactating <input type="checkbox"/> Ebola survivor <input type="checkbox"/> Destitute <input type="checkbox"/> Disabled <input type="checkbox"/>
A9	Type of admission	Emergency (e.g trauma ward) <input type="checkbox"/> Elective <input type="checkbox"/>
A10	Primary diagnosis	_____
A11	What treatment did the patient receive? <i>(Note: Procedures are often done in the Trauma ward (minors procedure room) e.g skin traction/POP/suturing)</i>	Operation/ procedure <input type="checkbox"/> (specify and go to A14) Specify _____ Non-operative surgical care <input type="checkbox"/> (go to A13)
A12	If patient received non-operative care state reason	Clinically appropriate / not recommended by Dr <input type="checkbox"/> Patient chose not to have an operation / procedure <input type="checkbox"/> Financial (unable to pay) <input type="checkbox"/> Other <input type="checkbox"/> (please give a brief statement)

A13	Length of hospital stay (admission and discharge date)	Admission date: __/__/____ Discharge date: __/__/____
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Section 2a: Household structure and typical household income and expenditure

All questions are to be answered by the patient, parent, guardian or household member or head. **Encourage patient to invite household head / member / breadwinner or the person who deals with household expenditure and or has made the payments for the care received - to help answer the questions.**

“Firstly are a few questions to understand the structure of your household (the people that eat food from the same pot and take instructions from the same head (excluding lodgers / individuals that pay to live in your house) and the average household income”

Code	Question	Response
B1	Who is being interviewed? Tick <u>all</u> that are applicable If questions are being answered by someone other than the patient (e.g. household member), what is their relationship to the patient?	Patient <input type="checkbox"/> Parent / Guardian <input type="checkbox"/> Household head <input type="checkbox"/> Other <input type="checkbox"/> (State relationship to patient) _____
B2	What is the size of your household , including yourself how many people normally eat food from the same pot and take instructions from the same head (exclude lodgers / individuals that pay to live in your house)	_____
B3	Does anyone in your household (household head/members) generate income?	Yes <input type="checkbox"/> (go to B4) No <input type="checkbox"/> (go to B7)
B4	How many people in your household generate income that is used to support the household?	_____ Don't know <input type="checkbox"/>
B5	What is the occupation of the person who contributes the most to your household expenses?	_____ Salaried <input type="checkbox"/> Non-salaried <input type="checkbox"/> Don't know <input type="checkbox"/>
B6	How much income does your household generate (in total) to support the household in a typical month?	_____ Leones Don't know <input type="checkbox"/>
B7	What is the highest level of education of the main breadwinner (i.e the individual identified in B5)?	No formal education <input type="checkbox"/> Primary <input type="checkbox"/> Secondary <input type="checkbox"/> College <input type="checkbox"/> University <input type="checkbox"/> Other <input type="checkbox"/> specify _____
B8	Does your household have any of the following?	Electricity / Light Yes <input type="checkbox"/> No <input type="checkbox"/> Mobile phone Yes <input type="checkbox"/> No <input type="checkbox"/> Radio Yes <input type="checkbox"/> No <input type="checkbox"/> Television (TV) Yes <input type="checkbox"/> No <input type="checkbox"/> Computer Yes <input type="checkbox"/> No <input type="checkbox"/> Refrigerator Yes <input type="checkbox"/> No <input type="checkbox"/> Generator Yes <input type="checkbox"/> No <input type="checkbox"/> Bicycle Yes <input type="checkbox"/> No <input type="checkbox"/> Honda/ Motorcycle Yes <input type="checkbox"/> No <input type="checkbox"/> Car or truck Yes <input type="checkbox"/> No <input type="checkbox"/>
B9	What material is used for the roof of your house?	Natural roofing (thatch) <input type="checkbox"/> Basic roofing (tarpoline, metal, zinc) <input type="checkbox"/> Finished roof (concrete / tiled) <input type="checkbox"/> Other <input type="checkbox"/> specify _____
B10	What material is used for the floor of your house?	Natural floor (mud/earth/wattle) <input type="checkbox"/> Basic floor (wood/cement) <input type="checkbox"/> Finished floor (concrete/tile/carpet) <input type="checkbox"/> Other <input type="checkbox"/> specify _____
B11	What material is used for the walls of your house?	Natural walls (mud/earth/wattle) <input type="checkbox"/> Basic walls (stone/mud bricks/zinc) <input type="checkbox"/> Finished walls (concrete) <input type="checkbox"/> Other <input type="checkbox"/> specify _____

Section 2b: Typical household expenditure

“I would now like to ask you some questions about your household expenses starting with how much your household spends on food and consumption in a typical week”

Code	Question	Response
C1	Does the month of Ramadhan effect your household spending/expenses?	Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, say: please answer all the questions on expenses based on a week / month outside of the Ramadhan period
C2	How much does your household spend on food (including chop money) ?	_____ Leones Don't know <input type="checkbox"/>
C3	How much does your household spend drinks (non-alcoholic drinks such as water, tea, coffee, milk and soft drinks)?	_____ Leones Don't know <input type="checkbox"/>
C4	Tobacco and alcoholic beverages (including beer, wine, spirits, poyo) – had at home / outside	_____ Leones Don't know <input type="checkbox"/>
C5	Food eaten outside the dwelling (for example, at vendors, cooking , kiosks or restaurants)	_____ Leones Don't know <input type="checkbox"/>
C6	Other food items (e.g kola nut, food not included in chop money)	_____ Leones Don't know <input type="checkbox"/>
C7	Communication fees, including megabites (internet), mobile phone (credit /top up) and others?	_____ Leones Don't know <input type="checkbox"/>
C8	Transportation (to work place, market, school etc)? (For example, petrol, taxis, motorbike taxis)	_____ Leones Don't know <input type="checkbox"/>
"I would now like to ask you about other expenses your household might have had in the last month or a typical month"		
C9	Utilities, such as water, light, electricity (NPA), waste disposal, etc.?	_____ Leones Don't know <input type="checkbox"/>
C10	Fuel (e.g cooking / generator - gas, coal, kerosene, firewood, petrol, diesel, etc.)?	_____ Leones Don't know <input type="checkbox"/>
C11	Personal toiletries and personal care (e.g.soap, toothpaste, toothbrush, toilet roll, cosmetics, beauty salon, getting hair done etc.)?	_____ Leones Don't know <input type="checkbox"/>
C12	Clothing and bedding?	_____ Leones Don't know <input type="checkbox"/>
C13	Loan repayments (e.g on your house) / other debt or microcredit for business or other purposes?	_____ Leones Don't know <input type="checkbox"/>
C14	Entertainment , including; cinemas/video centres to watch football matches, games, stadium for shows, soccer matches, or hangouts / chilling?	_____ Leones Don't know <input type="checkbox"/>
C15	Payments for household help /servants, including cook, maid, driver, security, gardener, etc.?	_____ Leones Don't know <input type="checkbox"/>
C16	How much does your household pay in remittance to family living away from home (money, airtel/Africell money , food etc)?	_____ Leones Don't know <input type="checkbox"/>
C17	Excluding this hospital stay, how much money does your household usually spend on health care related to "white man medicine" , including medicines, fees for doctors' appointments and hospital visits?	_____ Leones Don't know <input type="checkbox"/>
C18	Excluding this hospital stay, how much money does your household usually spend on health care related to "country/black man medicine" ?	_____ Leones Don't know <input type="checkbox"/>
C19	Do you have any other monthly expenditures ?	Yes <input type="checkbox"/> Specify _____ No <input type="checkbox"/> (go to C21)
C20	How much do these other expenditures amount to?	_____ Leones Don't know <input type="checkbox"/>
"I know these questions may be difficult to answer but try to give me the best estimate of expenses. I would now like you to focus on household expenses over the last 12 months. These are expenses that may be more periodic or "big purchases"		
C21	Rent (per year)	_____ Leones Don't know <input type="checkbox"/>
C22	Education fees and school supplies (tuition, course fees, books)?	_____ Leones Don't know <input type="checkbox"/>
C23	Electrical goods (mobile phones, televisions, DVD, radio, refrigerators,)?	_____ Leones Don't know <input type="checkbox"/>
C24	Big purchases such as; Furniture (tables, chairs, beds, sleeping mats) Vehicles (trucks, cars, motorcycles, keke, bicycles) and upkeep/repairs ? Tools (brooms, nails, hammer, paint, shovel, gardening equipment etc)	_____ Leones Don't know <input type="checkbox"/> _____ Leones Don't know <input type="checkbox"/> _____ Leones Don't know <input type="checkbox"/>
C25	Hosting rituals or ceremonies (funerals, birthdays, wedding, naming ceremony, pray de close, Christmas, the Haj)?	_____ Leones Don't know <input type="checkbox"/>
C26	Gifts for ceremonies (funerals, birthdays, wedding, naming ceremony, pray de close, Christmas) if invited?	_____ Leones Don't know <input type="checkbox"/>
C27	Donations or contributions to religious organisations (e.g. church/mosque)	_____ Leones Don't know <input type="checkbox"/>
C28	Deposit / upfront payments for property or land (excluding monthly loans)?	_____ Leones Don't know <input type="checkbox"/>
C29	Cleaning services or repair service (house maintenance)?	_____ Leones Don't know <input type="checkbox"/>
C30	Livestock (chicken, goat, sheep etc)?	_____ Leones Don't know <input type="checkbox"/>

C31	Taxes (city rate for home owner, vehicle tax, city council tax, NASSIT (national social security insurance trust)?	_____ Leones Don't know <input type="checkbox"/>
C32	Health insurance premiums (including, community health insurance schemes) or pre-paid health plans?	_____ Leones Don't know <input type="checkbox"/>

Section 3: Out-of-pocket payments for care sought prior to admission (from the day they fell ill with this illness)
"I would now like to ask you about all the health costs to your household before coming to hospital from when you fell sick with this illness / problem"

Code	Question	Response
D1	When did you fall sick with the illness that meant you had to be admitted to hospital?	_____ days before admission _____ weeks before admission _____ months before admission Don't know <input type="checkbox"/> (go to section 3 (C1))
<p>"I would now like you to think about that period of time; from falling sick to getting to the point of decision to come to Connaught / PCMH. The following questions will be related to that time. I know that it may be difficult to think that far back but please give the best estimate you can of the costs"</p>		
D2	Did you seek care for this illness elsewhere before coming to this hospital?	Yes <input type="checkbox"/> (go to D3) No <input type="checkbox"/> (go to section 4 (E1))
D3	<p>Where did you go to get care for your illness before coming to this hospital? Tick <u>all</u> that are applicable</p> <p>For each type of care provider ticked from the list below ask about the number of visits and a cost break down. If the patient cannot give a breakdown of costs ask for an estimated total</p> <p>Guidance notes; Consultation - fees to the provider ("doctors' fees"), fees excluding investigations and tests Medications Medical supplies - Consumables, gloves, bandages, dressings etc Investigations – Includes labs, scans, x-rays and other imaging Transportation - transport for getting to and from the facilities, subsequent investigations/ getting treatments / medicines</p>	
<p>Private clinic <input type="checkbox"/> no. of visits _____</p> <p>How much was spent on;</p> <p>Consultation _____ Leones Don't know <input type="checkbox"/></p> <p>Medications _____ Leones Don't know <input type="checkbox"/></p> <p>Medical supplies _____ Leones Don't know <input type="checkbox"/></p> <p>Investigations _____ Leones Don't know <input type="checkbox"/></p> <p>Transportation _____ Leones Don't know <input type="checkbox"/></p> <p>Other _____ Leones Don't know <input type="checkbox"/></p> <p>OR Estimated total _____ Leones Don't know <input type="checkbox"/></p>		<p>Other government hospital <input type="checkbox"/> no. of visits _____</p> <p>How much was spent on;</p> <p>Consultation _____ Leones Don't know <input type="checkbox"/></p> <p>Medications _____ Leones Don't know <input type="checkbox"/></p> <p>Medical supplies _____ Leones Don't know <input type="checkbox"/></p> <p>Investigations _____ Leones Don't know <input type="checkbox"/></p> <p>Transportation _____ Leones Don't know <input type="checkbox"/></p> <p>Other _____ Leones Don't know <input type="checkbox"/></p> <p>OR Estimated total _____ Leones Don't know <input type="checkbox"/></p>
<p>Charity or religious clinic <input type="checkbox"/> no. of visits _____</p> <p>How much was spent on;</p> <p>Consultation _____ Leones Don't know <input type="checkbox"/></p> <p>Medications _____ Leones Don't know <input type="checkbox"/></p> <p>Medical supplies _____ Leones Don't know <input type="checkbox"/></p> <p>Investigations _____ Leones Don't know <input type="checkbox"/></p> <p>Transportation _____ Leones Don't know <input type="checkbox"/></p> <p>Other _____ Leones Don't know <input type="checkbox"/></p> <p>OR Estimated total _____ Leones Don't know <input type="checkbox"/></p>		<p>Private hospital <input type="checkbox"/> no. of visits _____</p> <p>How much was spent on;</p> <p>Consultation _____ Leones Don't know <input type="checkbox"/></p> <p>Medications _____ Leones Don't know <input type="checkbox"/></p> <p>Medical supplies _____ Leones Don't know <input type="checkbox"/></p> <p>Investigations _____ Leones Don't know <input type="checkbox"/></p> <p>Transportation _____ Leones Don't know <input type="checkbox"/></p> <p>Other _____ Leones Don't know <input type="checkbox"/></p> <p>OR Estimated total _____ Leones Don't know <input type="checkbox"/></p>
<p>Pharmacy, drug peddler, pepper Dr. <input type="checkbox"/> no. of visits _____</p> <p>How much was spent on;</p> <p>Consultation _____ Leones Don't know <input type="checkbox"/></p> <p>Medications _____ Leones Don't know <input type="checkbox"/></p> <p>Medical supplies _____ Leones Don't know <input type="checkbox"/></p> <p>Investigations _____ Leones Don't know <input type="checkbox"/></p> <p>Transportation _____ Leones Don't know <input type="checkbox"/></p> <p>Other _____ Leones Don't know <input type="checkbox"/></p> <p>OR Estimated total _____ Leones Don't know <input type="checkbox"/></p>		<p>Community health clinic (Cheifdom level) <input type="checkbox"/></p> <p>no. of visits _____</p> <p>How much was spent on;</p> <p>Consultation _____ Leones Don't know <input type="checkbox"/></p> <p>Medications _____ Leones Don't know <input type="checkbox"/></p> <p>Medical supplies _____ Leones Don't know <input type="checkbox"/></p> <p>Investigations _____ Leones Don't know <input type="checkbox"/></p> <p>Transportation _____ Leones Don't know <input type="checkbox"/></p> <p>Other _____ Leones Don't know <input type="checkbox"/></p> <p>OR Estimated total _____ Leones Don't know <input type="checkbox"/></p>
<p>Traditional Healer / Herbalist <input type="checkbox"/> no. of visits _____</p>		

<p>How much was spent on;</p> <p>Consultation _____ Leones Don't know <input type="checkbox"/></p> <p>Medications _____ Leones Don't know <input type="checkbox"/></p> <p>Medical supplies _____ Leones Don't know <input type="checkbox"/></p> <p>Investigations _____ Leones Don't know <input type="checkbox"/></p> <p>Transportation _____ Leones Don't know <input type="checkbox"/></p> <p>Other _____ Leones Don't know <input type="checkbox"/></p> <p>OR Estimated total _____ Leones Don't know <input type="checkbox"/></p> <p>Traditional Birth Attendant (TBA) /Community Health Worker came home <input type="checkbox"/> no. of visits ____</p> <p>How much was spent on;</p> <p>Consultation _____ Leones Don't know <input type="checkbox"/></p> <p>Medications _____ Leones Don't know <input type="checkbox"/></p> <p>Medical supplies _____ Leones Don't know <input type="checkbox"/></p> <p>Investigations _____ Leones Don't know <input type="checkbox"/></p> <p>Transportation _____ Leones Don't know <input type="checkbox"/></p> <p>Other _____ Leones Don't know <input type="checkbox"/></p> <p>OR Estimated total _____ Leones Don't know <input type="checkbox"/></p> <p>Home delivery <input type="checkbox"/> no. of visits ____</p> <p>How much was spent on;</p> <p>Consultation _____ Leones Don't know <input type="checkbox"/></p> <p>Medications _____ Leones Don't know <input type="checkbox"/></p> <p>Medical supplies _____ Leones Don't know <input type="checkbox"/></p> <p>Investigations _____ Leones Don't know <input type="checkbox"/></p> <p>Transportation _____ Leones Don't know <input type="checkbox"/></p> <p>Other _____ Leones Don't know <input type="checkbox"/></p> <p>OR Estimated total _____ Leones Don't know <input type="checkbox"/></p>	<p>Community health post <input type="checkbox"/> no. of visits ____</p> <p>How much was spent on;</p> <p>Consultation _____ Leones Don't know <input type="checkbox"/></p> <p>Medications _____ Leones Don't know <input type="checkbox"/></p> <p>Medical supplies _____ Leones Don't know <input type="checkbox"/></p> <p>Investigations _____ Leones Don't know <input type="checkbox"/></p> <p>Transportation _____ Leones Don't know <input type="checkbox"/></p> <p>Other _____ Leones Don't know <input type="checkbox"/></p> <p>OR Estimated total _____ Leones Don't know <input type="checkbox"/></p> <p>Maternity Child Health Post (MCHP) <input type="checkbox"/> no. of visits ____</p> <p>How much was spent on;</p> <p>Consultation _____ Leones Don't know <input type="checkbox"/></p> <p>Medications _____ Leones Don't know <input type="checkbox"/></p> <p>Medical supplies _____ Leones Don't know <input type="checkbox"/></p> <p>Investigations _____ Leones Don't know <input type="checkbox"/></p> <p>Transportation _____ Leones Don't know <input type="checkbox"/></p> <p>Other _____ Leones Don't know <input type="checkbox"/></p> <p>OR Estimated total _____ Leones Don't know <input type="checkbox"/></p> <p>Other <input type="checkbox"/> specify _____ no. of visits ____</p> <p>How much was spent on;</p> <p>Consultation _____ Leones Don't know <input type="checkbox"/></p> <p>Medications _____ Leones Don't know <input type="checkbox"/></p> <p>Medical supplies _____ Leones Don't know <input type="checkbox"/></p> <p>Investigations _____ Leones Don't know <input type="checkbox"/></p> <p>Transportation _____ Leones Don't know <input type="checkbox"/></p> <p>Other _____ Leones Don't know <input type="checkbox"/></p> <p>OR Estimated total _____ Leones Don't know <input type="checkbox"/></p>
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Section 4: Out-of-pocket payments related to hospital admission

"I would now like to ask you about all the costs to your household from travel to the hospital to admission, your whole hospital stay and treatment through to discharge"

Please reiterate that as with all questions any questions related to informal payments / payments directly to staff are completely anonymous and no names are recorded or required. The purpose is to understand how much patients have to pay for all types of costs associated with their hospital admission so the following questions should be answered without undue concern.

If the household did not incur any of the expenses listed please state 0 Leones (this applies throughout the questionnaire)

Code	Question	Response
E1	Once the referral or decision was made to come to Connaught/PCMH, how did you and all the attendants come / travel?	Ambulance <input type="checkbox"/> Public transport - Taxi / KK /Okada <input type="checkbox"/> Private transport <input type="checkbox"/> Other <input type="checkbox"/> specify _____
E2	How much did this transport cost?	_____ Leones Don't know <input type="checkbox"/>
E3	Did you have to pay any money for registration? If yes, ask how much the household paid for registration fees? Tick <u>all</u> that are applicable	_____ Leones Don't know <input type="checkbox"/> Who or where was that paid to; - Bank in Connaught <input type="checkbox"/> _____ Leones - Directly to hospital staff <input type="checkbox"/> _____ Leones - Other <input type="checkbox"/> specify _____ _____ Leones
E4	Did you have to pay any money for admission (fees / booklet)? If yes, ask how much the household paid for admission? Tick <u>all</u> that are applicable	_____ Leones Don't know <input type="checkbox"/> Who or where was that paid to; - Bank in Connaught <input type="checkbox"/> _____ Leones - Directly to hospital staff <input type="checkbox"/> _____ Leones

		- Other <input type="checkbox"/> specify _____ _____ Leones
E5	Did you have to pay any money at or for triage (e.g for blood sugar)? If yes, ask how much the household paid? Tick <u>all</u> that are applicable	_____ Leones Don't know <input type="checkbox"/> Who or where was that paid to; - Bank in Connaught <input type="checkbox"/> _____ Leones - Directly to hospital staff <input type="checkbox"/> _____ Leones - Other <input type="checkbox"/> specify _____ _____ Leones
E6	Did you have to pay any money for any helpers (e.g porters, wheelchair, hospital staff to help you get around etc). If yes, ask how much the household paid?	_____ Leones Don't know <input type="checkbox"/>
E7	Did you have to pay any doctors' fees / consultation fees? If yes, ask how much the household paid in doctors' fees / consultation fees? Tick <u>all</u> that are applicable	_____ Leones Don't know <input type="checkbox"/> Who or where was that paid to; - Bank in Connaught <input type="checkbox"/> _____ Leones - Directly to healthcare workers <input type="checkbox"/> _____ Leones - Other <input type="checkbox"/> specify _____ _____ Leones
E8	Did you have any laboratory (lab) tests? If yes, ask how much money the household spent on these tests? Tick <u>all</u> that are applicable	_____ Leones Don't know <input type="checkbox"/> Who or where was that paid to; - Bank in Connaught <input type="checkbox"/> _____ Leones - External lab <input type="checkbox"/> _____ Leones - Internal lab <input type="checkbox"/> _____ Leones - Directly to healthcare workers <input type="checkbox"/> _____ Leones - Other <input type="checkbox"/> specify _____ _____ Leones
E9	Did you have any x-rays, scans or imaging? If yes, ask how much money your household spent on scans, imaging and x-rays? Tick <u>all</u> that are applicable	_____ Leones Don't know <input type="checkbox"/> Who or where was that paid to; - Bank in Connaught <input type="checkbox"/> _____ Leones - External facility <input type="checkbox"/> _____ Leones - Internal facility <input type="checkbox"/> _____ Leones - Directly to healthcare workers <input type="checkbox"/> _____ Leones - Other <input type="checkbox"/> specify _____ _____ Leones
E10	Did the patient have an operation or procedure (e.g skin traction/POP/suturing) in hospital?	Yes <input type="checkbox"/> No <input type="checkbox"/> (go to E15)
E11	How much did you pay for this operation or procedure? Tick <u>all</u> that are applicable	_____ Leones. Don't know <input type="checkbox"/> Who or where was that paid to; - Bank in Connaught <input type="checkbox"/> _____ Leones - Directly to healthcare workers <input type="checkbox"/> _____ Leones - Other <input type="checkbox"/> specify _____ _____ Leones
E12	Did you have to pay for medications or medical supplies (e.g. cannulas, IV lines, gauze, bandages, dressings, gloves, catheters and other consumables) for theatre / your operation/procedure? If yes, how much money did your household spend on these medicines and medical supplies?	_____ Leones. Don't know <input type="checkbox"/> Who or where was that paid to; - Bank in Connaught <input type="checkbox"/> _____ Leones - External pharmacy <input type="checkbox"/> _____ Leones

	Tick <u>all</u> that are applicable	<ul style="list-style-type: none"> - Internal pharmacy / cost recovery <input type="checkbox"/> _____ Leones - Directly to healthcare workers <input type="checkbox"/> _____ Leones - Other <input type="checkbox"/> specify _____ _____ Leones
E13	Did you have any extra charges once in the operating room /area? Please specify what this was for.	Yes <input type="checkbox"/> (specify) _____ No <input type="checkbox"/> (go to E15) Specify what this was for? _____
E14	How much money did your household spend on these extra-charges in the operating room? Tick <u>all</u> that are applicable	_____ Leones. Don't know <input type="checkbox"/> Who or where was that paid to; <ul style="list-style-type: none"> - Bank in Connaught <input type="checkbox"/> _____ Leones - External pharmacy <input type="checkbox"/> _____ Leones - Internal pharmacy / cost recovery <input type="checkbox"/> _____ Leones - Directly to healthcare workers <input type="checkbox"/> _____ Leones - Other <input type="checkbox"/> specify _____ _____ Leones
E15	Did your household have to arrange and get blood for transfusion?	Yes <input type="checkbox"/> No <input type="checkbox"/> (go to E18)
E17	How much money did your household spend on blood transfusion related costs (including blood bank fees, supplies, paying a donor etc.) Tick <u>all</u> that are applicable	_____ Leones Don't know <input type="checkbox"/> Who or where was that paid to; <ul style="list-style-type: none"> - Bank in Connaught <input type="checkbox"/> _____ Leones - External facility <input type="checkbox"/> _____ Leones - Internal facility <input type="checkbox"/> _____ Leones - Directly to healthcare workers <input type="checkbox"/> _____ Leones - Other <input type="checkbox"/> specify _____ _____ Leones
E18	Did you have to pay for any medications in A&E/OPD or on the ward (excluding prescriptions specifically for theatre)? If yes, ask how much the household paid for this? Tick <u>all</u> that are applicable	_____ Leones Don't know <input type="checkbox"/> Who or where was that paid to; <ul style="list-style-type: none"> - Bank in Connaught <input type="checkbox"/> _____ Leones - External pharmacy <input type="checkbox"/> _____ Leones - Internal pharmacy / cost recovery <input type="checkbox"/> _____ Leones - Directly to healthcare workers <input type="checkbox"/> _____ Leones - Other <input type="checkbox"/> specify _____ _____ Leones
E19	Did you have to pay for any medical supplies in A&E/OPD and the Ward (not including medications, e.g. cannulas, IV lines, gauze, bandages, dressings, gloves, catheters and other consumables) (excluding the prescription for theatre)? If yes, ask how much was paid? Tick <u>all</u> that are applicable	_____ Leones. Don't know <input type="checkbox"/> Who or where was that paid to; <ul style="list-style-type: none"> - Bank in Connaught <input type="checkbox"/> _____ Leones - External pharmacy / facility <input type="checkbox"/> _____ Leones - Internal pharmacy / facility / cost recovery <input type="checkbox"/> _____ Leones - Directly to healthcare workers <input type="checkbox"/> _____ Leones - Other <input type="checkbox"/> specify _____ _____ Leones
E20	Did you have to pay any bed fees (excluding admission fees / book? If yes, ask how much money the household paid in bed fees?	_____ Leones Don't know <input type="checkbox"/> Who or where was that paid to; <ul style="list-style-type: none"> - Bank in Connaught <input type="checkbox"/>

	Tick <u>all</u> that are applicable	<p>_____ Leones</p> <p>- Directly to healthcare workers <input type="checkbox"/></p> <p>_____ Leones</p> <p>- Other <input type="checkbox"/> specify _____</p> <p>_____ Leones</p>
E21	Did your household pay any money for nursing care (requested by nurses for care such as dressing changes etc, not including medications or medical supplies)? If yes, ask how much was paid?	<p>_____ Leones Don't know <input type="checkbox"/></p> <p>Who or where was that paid to;</p> <p>- Bank in Connaught <input type="checkbox"/></p> <p>_____ Leones</p> <p>- Directly to healthcare workers <input type="checkbox"/></p> <p>_____ Leones</p> <p>- Other <input type="checkbox"/> specify _____</p> <p>_____ Leones</p>
E22	Did your household give any tips (ahjo) i.e. voluntary and not requested money / gifts to healthcare workers / staff? If yes ask how much this amounted to?	<p>_____ Leones Don't know <input type="checkbox"/></p>
E23	How many family members / attendants / persons stayed in hospital during your hospital stay (excluding visitors)?	<p>_____ people</p>
E24	Where did they stay and how much did your household pay towards this?	<p>In hospital <input type="checkbox"/></p> <p>Outside accommodation <input type="checkbox"/></p> <p>Other <input type="checkbox"/> specify _____</p> <p>Total cost _____ Leones Don't know <input type="checkbox"/></p>
E25	During your hospital stay where did you get food from? Tick <u>all</u> that are applicable	<p>Provided by the hospital <input type="checkbox"/></p> <p>Bought by the patient / household <input type="checkbox"/></p> <p>Brought for the patient by someone else <input type="checkbox"/></p> <p>Other <input type="checkbox"/> specify _____</p>
E26	How much did you / your household spend on food during your hospital stay? If they can't give a break down then ask for a total.	<p>On patient _____ Leones Don't know <input type="checkbox"/></p> <p>For attendants _____ Leones Don't know <input type="checkbox"/></p> <p>Total _____ Leones Don't know <input type="checkbox"/></p>
E27	Did your household spend any money on transport for all the "running" (transport to get food, hospital supplies, investigations and medications externally, excluding transport for visitors) ? If yes ask how much and state what this was for? Tick <u>all</u> that are applicable	<p>_____ Leones Don't know <input type="checkbox"/></p> <p>What was this for?</p> <p>Food for the patients / attendants <input type="checkbox"/></p> <p>Going for tests / investigations outside <input type="checkbox"/></p> <p>Getting medicines / medical supplies <input type="checkbox"/></p> <p>Other <input type="checkbox"/> specify _____</p>
E28	Did your household have to pay any money at the time of discharge ? If yes, ask how much was paid?	<p>_____ Leones. Don't know <input type="checkbox"/></p> <p>Who or where was that paid to;</p> <p>- Bank in Connaught <input type="checkbox"/></p> <p>_____ Leones</p> <p>- Directly to healthcare workers <input type="checkbox"/></p> <p>_____ Leones</p> <p>- Other <input type="checkbox"/> specify _____</p> <p>_____ Leones</p>
E29	Did your household have any other illness related / hospital costs (e.g at SOP / other departments visited) ? If yes, specify what these costs where for.	<p>Yes <input type="checkbox"/> (specify and go to E30) No <input type="checkbox"/> (go to F1)</p> <p>Specify _____</p>
E30	How much did these other costs amount to?	<p>_____ Leones. Don't know <input type="checkbox"/></p> <p>Who or where was that paid to;</p> <p>- Bank in Connaught <input type="checkbox"/></p> <p>_____ Leones</p> <p>- Directly to healthcare workers <input type="checkbox"/></p> <p>_____ Leones</p> <p>- Other <input type="checkbox"/> specify _____</p> <p>_____ Leones</p>

Section 5: Indirect non-medical expenditure and how costs are met**"I will now ask you some questions about the broader implications of the costs and how you have met these costs?"**

Code	Question	Response
F1	Do you have health insurance/medical care to cover any medical costs?	Yes <input type="checkbox"/> No <input type="checkbox"/> (go to F5) Don't know <input type="checkbox"/>
F2	What type of health insurance do you have?	<input type="checkbox"/> Private insurance <input type="checkbox"/> Work-related insurance

		<input type="checkbox"/> Other (specify) _____
F3	What is your monthly contribution towards your insurance (if applicable)?	_____ Leones Don't know <input type="checkbox"/>
F4	Does this insurance cover all (total) medical costs ?	Yes <input type="checkbox"/> No <input type="checkbox"/> If no, how much was paid in addition _____ Leones Don't know <input type="checkbox"/>
F5	How did your household pay for all the above costs? Tick all that are applicable	
	Use savings? Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/>	How much? _____ Leones Don't know <input type="checkbox"/>
	Borrow money? Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/>	How much? _____ Leones Does this need to be paid back? Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/>
	Arrange family contributions? Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/>	How much? _____ Leones Does this need to be paid back? Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/>
	Charity money from family/friends outside the country/church/social clubs? Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/>	How much? _____ Leones Does this need to be paid back? Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/>
	Pledge / pawn any possessions (including livestock, assets including electrical goods, generator, watches, jewellery etc.)? Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/>	How much money did this raise? _____ Leones Don't know <input type="checkbox"/>
	Sell any possessions or land? Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/>	How much money did this raise? _____ Leones Don't know <input type="checkbox"/>
Any other way of meeting the hospital costs? Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/>	Specify how _____ How much money did this raise? _____ Leones Don't know <input type="checkbox"/>	
F6	Did your household have to stop sending any children to school, or pay reduced school fees in order to pay for this hospitalisation?	Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/>
F7	Did your household lose any wages due to this hospital stay? If yes, ask how much was lost?	Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/> How much was lost _____ Leones Don't know <input type="checkbox"/>
F8	Did you or anyone in your household lose their job or change their role at work or home ?	Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/> If yes please specify Lost job <input type="checkbox"/> Took up employment / 2 nd job <input type="checkbox"/> Change of duties in household to meet costs <input type="checkbox"/> Other <input type="checkbox"/> specify _____

Any other comments?

Appendix table 2: Household expenditure showing imputed and non-imputed data sets.

Comparison of non-imputed and imputed data on household expenditure using Multiple Imputation Chained Equations to compute missing data-points using predictive mean matching.

Household expense	Non-imputed data mean (SD) (Le and \$US)	Imputed data pooled mean (Le and \$ US)
Individual Consumption Expenditure by Households Including all variables collected	Le 39,665,597 (53,679,740) \$ 4,425 (5,989)	Le 47,944,384 \$5,349
Individual Consumption Expenditure by Households Excluding variables with > 20% missing data i.e. clothing, mobile phone credit and transport	Le 28,134,505 (31,539,987) \$ 3,139 (3,519)	Le 31,988,507 \$ 3,569
Food and non-alcoholic beverages	Le 18,616,404	Le 20,867,118

	(22,364,391) \$ 2,077 (2,495)	\$ 2,328
Alcoholic Beverages, Tobacco and Narcotics	Le 252,991 (1,047,612) \$ 28 (117)	Le 314,095 \$ 35
Rental	Le 884,123 (4,670,009) \$ 99 (521)	Le 876,940 \$ 98
Household maintenance	Le 108,092 (298,466) \$ 12 (33)	Le 130,857 \$ 15
Electricity, gas and other fuels	Le 720,748 (1,068,694) \$ 80 (119)	Le 747,701 \$ 83
Furnishings, household equipment and routine household maintenance	Le 632,577 (1,065,761) \$ 71 (119)	Le 699,188 \$ 78
Healthcare (traditional and western medicine)	Le 561,770 (1,490,207) \$ 63 (166)	Le 740,205 \$ 83
Recreation and cultural services	Le 821,684 (1,894,677) \$ 92 (211)	Le 1,121,965 \$ 125
Education	Le 1,338,183 (2,295,578) \$ 149 (256)	Le 1,614,982 \$ 180
Personal care / toiletries	Le 609,012 (629,656) \$ 68 (70)	Le 627,269 \$ 70
Health insurance	Le 8,333 (138,661) \$ 1 (15)	Le 13,370 \$ 1
Remittance	Le 974,408 (1,655,020) \$ 109 (185)	Le 1,015,363 \$ 113
Donations	Le 185,233 (475,436) \$ 21 (53)	Le 203,246 \$ 23
Livestock	Le 41,400 (213,804) \$ 5 (24)	Le 45,254 \$ 5
Taxes	Le 59,500 (261,497) \$ 7 (29)	Le 73,723 \$ 8

Appendix table 3: Household expenditure data. Variables on household expenditure shown here, for broad comparison, with the Economic and Financial survey Sierra Leone 2014 data²¹. Categories were harmonised where possible, however given differences in questions asked between surveys, an exact match of categories was not possible to achieve. Costs from the 2014 Economic and Financial Survey were not adjusted for inflation which needs to be considered when reviewing this data.

Household consumption expenditure (in Leones (Le) and USD (\$))		
Household Expense	Sierra Leone Economic and Financial Survey data 2014	Study data
Individual Consumption Expenditure by Households (Total Expenditure)	Le 15,414,816 \$ 1,739	Le 31,988,507 \$ 3,569

Food and non-alcoholic beverages	Le 6,838,365 \$ 771	Le 20,867,118 \$ 2,328
Food	Le 6,644,019 \$ 74	Le 17,925,090 \$ 2,000
Non-alcoholic beverages	Le 194,346 \$ 22	Le 2,942,028 \$ 328
Alcoholic Beverages, Tobacco and Narcotics	Le 450,612 \$ 51	Le 314,095 \$ 35
Housing, water, electricity, gas and other fuels	Le 1,058,449 \$119	Le 875,672 \$ 98
Rental	Le 253,948 \$ 29	Le 876,940 \$ 98
Maintenance and repair of the dwelling	Le 32,650 \$ 4	Le 876,940 \$ 98
Electricity, gas and other fuels	Le 595,832 \$ 67	Le 747,701 \$ 83
Furnishings, household equipment and routine household maintenance	Le 413,364 \$ 47	Le 699,188 \$ 78
Furnishings	Le 88,058 \$ 10	Le 196,217 \$ 22
Household appliances	Le 41,821 \$ 5	Le 314,772 \$ 35
Tools and equipment for house and garden	Le 45,403 \$ 5	Le 57,344 \$ 6
Goods and services for routine household maintenance	Le 105,438 \$ 12	Le 130,857 \$ 15
Purchase of vehicles	Le 108,710 \$ 12	Le 160,759 \$ 18
Educations	Le 794,478 \$ 90	Le 1,614,982 \$ 180
Insurance (HI)	Le 38,890 \$ 4	Le 13,370 \$ 1

Appendix table 4: Imputed and non-imputed data for out-of-pocket costs for comparison.

Costs	Imputed Mean cost (\$US (% of subtotal))	Non-imputed Mean cost (\$US) (SD)
Prehospital costs		
Direct pre-hospital medical OOP costs (total)	21 (88% of 24)	14 (65)
- Consultation	2 (10% of 21)	1 (6)
- Medications	12 (57% of 21)	9 (46)
- Medical supplies	2 (10% of 21)	2 (8)
- Investigations	4 (19% of 21)	4 (25)
- Other miscellaneous	2 (10% of 21)	1 (10)
Direct (pre-hospital) non-medical OOP costs (total)	3 (13% of 24)	3 (9)
- Transport	3 (100% of 3)	3 (9)
Total pre-hospital costs	24 (10% of 243)	25 (75)
In hospital costs		
Direct medical OOP costs (total)	138 (63% of 219)	109 (121)
- Administrative	20 (14% of 138)	16 (24)
- Medications	26 (19% of 138)	25 (61)
- Medical supplies	14 (10% of 138)	11 (33)
- Investigations	15 (11% of 138)	14 (23)
- Blood transfusion	9 (7% of 138)	9 (22)
- Total operation costs	49 (36% of 138)	51 (75)
- Unofficial costs	6 (4% of 138)	5 (9)
- Other / miscellaneous	1 (1% of 138)	1 (8)
Direct non-medical costs (total)	34 (16% of 219)	34 (34)
- Transport to hospital	7 (21% of 34)	7 (17)
- Food	20 (59% of 34)	21 (20)
- Accommodation	0 (0% of 34)	0 (0)
- Other*	7 (21% of 34)	6 (10)
Indirect costs		
- Lost wages	46 (100% of 46)	35 (116)
TOTAL OOP COSTS	243	176 (165)

*other relates to travel and other associated costs incurred as a result for needed investigations from and or medication / supplies from an external facility. SPSS calculates only the mean using imputed variables, hence no standard deviation is displayed.

Appendix table 5: Route of payment for OOP costs; percentage of the total OOP costs by cost categories paid to bank / cashier, directly to staff or externally for different services accessed once tertiary level care was reached

Costs	% paid to Hospital bank / cashier	% paid directly to or via staff	% paid externally	% unknown	Total
TOTAL in-hospital costs	32.64%	48.16%	16.50%	2.70%	100%
Administration	52.03%	42.53%	-	5.44%	100%
- Registration fees	90.98%	8.71%	-	0.30%	100%
- Admission fees	66.78%	32.39%	-	0.83%	100%
- Triage fees	8.05%	91.95%	-	0.00%	100%
- Bed fees	19.47%	46.13%	-	34.40%	100%
- Discharge fees	41.19%	57.28%	-	1.53%	100%
Investigations	19.39%	44.29%	33.73%	2.59%	100%
- Laboratory	25.68%	40.29%	30.13%	3.90%	100%
- Imaging	14.43%	47.44%	36.57%	1.56%	100%
Total operation costs	55.40%	32.89%	9.35%	2.35%	100%
- Operation	80.10%	18.91%	-	1.00%	100%
- Medical supplies for the operation	13.42%	56.59%	25.31%	4.68%	100%
- Other / miscellaneous	69.77%	30.23%	-	0.00%	100%
Blood transfusion	16.24%	67.68%	13.85%	2.23%	100%
Total medications and medical supplies for ward care	4.82%	61.00%	31.73%	2.45%	100%
- Medications	2.19%	62.86%	31.91%	3.03%	100%
- Medical supplies	10.81%	56.74%	31.31%	1.14%	100%
Informal payment	2.44%	97.56%	-	0.00%	100%
- Doctors' fees	8.72%	91.28%	-	0.00%	100%
- Nursing care	0%	100%	-	0.00%	100%
- Porters	0%	100%	-	0.00%	100%
- Tips	0%	100%	-	0.00%	100%
Other / miscellaneous costs	0%	98.37%	0	1.63%	100%

Appendix table 6: Linear regression analysis showing odds of increasing in-hospital costs of care for each variable using a generalized linear model with imputed variables using a Tweedie 1.9 function.

Variable		Odds Ratio	95% CI	p-value
Sex	Female	ref		
	Male	1.05	(0.86-1.29)	0.63
Age	Age	1.02	(1.01-1.02)	0.00
Length of stay	Length of stay	1.02	(1.02 -1.03)	0.00
Type of admission	Elective admission	ref		
	Emergency admission	0.96	(0.75-1.24)	0.77
Category of operation	Non-operative	ref		
	Burns	1.33	(0.25-7.00)	0.74
	ENT	0.64	(0.36-1.166)	0.14
	General surgery	1.67	(1.29-2.17)	0.00
	General paediatric surgery	0.84	(0.57-1.24)	0.38
	Trauma and orthopaedic	1.30	(0.98- 1.74)	0.07
Area of residence	Urology	2.08	(1.22-3.53)	0.01
	Rural	ref		
	Urban	0.98	(0.76-1.25)	0.85