Understanding data needs for HTA in Sub-Saharan Africa – a framework and Ghana case study

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Setting Health Priorities 2018

Why? I

- Ghana is moving to **universal health coverage** (UHC)
- **National Health Insurance Scheme** (NHIS) has been established for some years.
- Money available for the NHIS is **finite and scarce**
- UHC will require money spent on the NHIS to be **prioritised wisely** to **maximise health returns on investment**

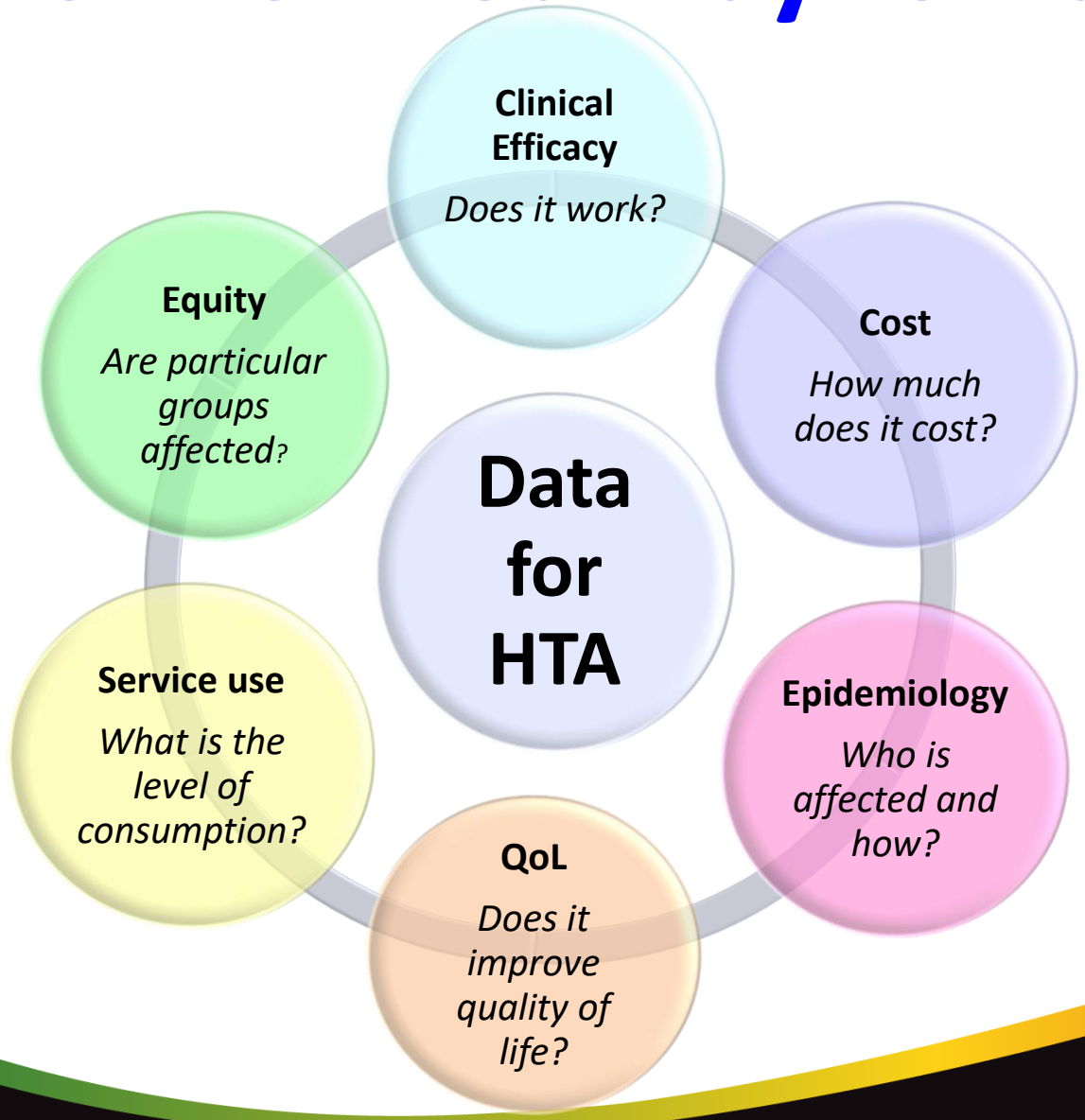
Why? II

- For **evidence-informed priority setting**, policymakers need answers to ….
  - ✓ Where is money being spent in the health system?
  - ✓ How are health services being used?
  - ✓ What is the general 'health' of the population?

- Need to **combine this evidence** in order to understand:
  - ✓ What is the value for money of current and future investments in the health system?
  - ✓ Where can we make the most health gains?

- HTA is the **international gold-standard tool** for combining this information for evidence-informed priority setting in healthcare decision-making
- The Government of Ghana is committed to **institutionalising HTA** for priority setting.

What do we mean by ‘evidence’?



Data – some issues

- **lack** of high-quality available evidence in many LMICs
- any HTA model is only as good as the data that populates it
- **local evidence** is often more available for some parameters (epidemiology, some costs) than others (e.g. QoL, clinical efficacy)
- countries starting their HTA journey can begin by using a combination of **local and international** data
- long-term planning for 'institutionalising' HTA should include **strengthening of data collection** mechanisms

Aim

To identify and describe the sources and quality of accessible data to support HTA in Ghana

How?

- **Existing framework** (Downey et al 2018)
  - epidemiology
  - clinical efficacy
  - costs
  - service use and consumption
  - quality of life
  - equity
- identified and described **data sources**
  - existing knowledge
  - views of stakeholders
  - searches of the literature and internet

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Check for updates

RESEARCH ARTICLE

REVISED **Identification of publicly available data sources to inform the conduct of Health Technology Assessment in India [version 2; referees: 1 approved, 1 approved with reservations]**

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Ghana – hypertension HTA I

Aspect	Source
Epidemiology Prevalence of hypertension, mortality estimates, probabilities of incidence of CVD, diabetes, incidence of related complications	- Prevalence of hypertension → Ghana Statistical Service (GSS) & DHS Census Data (2012,2014) - Mortality rates → WHO estimated life table for Ghana - Annual probabilities of incidence of CVD + diabetes → international literature - Baseline estimates of the incidence of CVD → multivariate analysis of primary care data, black African patients in UK (QRisk2 algorithm)
Clinical efficacy Effectiveness of AHM; incidence of adverse events	- Meta-analyses → international literature for black African population (not specifically Ghanaian)
Cost antihypertensive medicines; interactions with the health system	- Unit costs of service → NHIS price for drugs on the essential medicines list, NHIS tariffs - Daily dose and healthcare intervention assumptions → recommendations in Ghana Standard Treatment Guidelines for hypertension

Ghana – hypertension HTA II

Aspect	Source
Service use use of services for healthcare seeking; treatment of adverse events	- NHIS protocols - expert opinion
Quality of life disability-adjusted life years	- Disability weights → 2004 Global Burden of Disease (GBD) study
Equity impact of geography, gender, socio-economic status, or other differentiating factors on health outcomes	- Model did not consider equity - Results could be disaggregated by geography and/or urban vs rural using DHS data in future analyses

1. Epidemiology

HTA-related information	Data Source	Institution	Collection method	Equity aspect	Website	Comment
Population profile	Census	Ghana Statistical Service (GSS)	Survey	Yes	http://www.statsghana.gov.gh/	Last census 2010
Demographics	Vital statistics	Births and deaths registry	Register, Verbal autopsy	?	http://www.eservices.gov.gh/bdr/SitePages/bdr-home.aspx	Many deaths not recorded, causes unknown
Burden of Disease	BoD	IHME	HIS	Yes	http://www.healthdata.org/ghana	Disaggregated data – need to apply
Demographic health survey	DHS	DHS Program	Survey	Yes	https://dhsprogram.com/Publications/Publication-Search.cfm?ctry_id=14&country=Ghana https://dhsprogram.com/what-we-do/survey/survey-display-437.cfm	Latest DHS 2014. Current DHS is being validated
Multiple indicator cluster surveys	MICS	Unicef, GSS	?	?	http://mics.unicef.org/surveys	MICS6 (2017-18) being analysed 2011 available
Disease profiles	DHIMS	GHS, CHIMG	HIS	Yes	https://www.facebook.com/CHIMGH/?fref=ts Centre for Health information Management Ghana	Access – permission required
Disease Surveillance	GHS	DS Dept, Public Health	HIS	?	http://www.ghanahealthservice.org/division-scat.php?ghsdid=10&ghsscid=58	Comm & non-comm disease
Ghana HIS indicators	GHS mostly	Measure	Collation	No	https://www.measureevaluation.org/his-strengthening-resource-center/country-profiles/ghana	Reports, Raw data?

2. Clinical efficacy

HTA-related information	Data Source	Institution	Collection method	Equity aspect	Website	Comment
	Trials of interventions	Industry mostly	Trials	Often sparse	Published literature (e.g. PubMed)	Few trials in Ghana (Odame SR)
Efficacy - trials	Clinical trials Dept	Food & Drugs Authority	Register	No	https://fdaghana.gov.gh/index.php/clinical-trials-department/	authorisation and monitoring of clinical trials
	Pan African Clinical Trials Registry	PACTR	Register	No	http://www.pactr.org/ International Clinical Trials Registry Platform (ICTRP) http://www.who.int/ictrp/en/	regional register of clinical trials conducted in Africa
Efficacy – systematic reviews	Cochrane Library	Cochrane Library, Wiley	-	--	http://www.cochranelibrary.com/help/access-options-for-cochrane-library.html	Access is provided by IP recognition
Safety	Pharmaco-vigilance	FDA	?	?	https://fdaghana.gov.gh/index.php/safety-monitoring-department/	Adverse event reporting system?
Medical research	Division of Research & Development	GHS	--	No	http://www.ghanahealthservice.org/ghs-division.php?ghs&ghsdid=11	

3. Costs

HTA-related information	Data Source	Institution	Collection method	Equity aspect	Website	Comment
Health expenditure	National Heath Accounts	MoH WHO	NHA	?	https://knoema.com/WHONHA2018Feb/national-health-accounts?country=1000200-ghana	Not easily accessible
Medicines prices	NHIS list	NHIA	Central decisions	No	http://www.nhis.gov.gh/News/what-you-need-to-know-about-nhis-medicines-list-4130	
	Survey	WHO & HAI	Survey	Regional?	http://apps.who.int/medicinedocs/en/d/Js18074en/	Last one done 2004. Raw data at MoH?
Health services	NHIS tariffs	NHIA & GHS	Central decisions	No	Benefits package http://www.nhis.gov.gh/benefits.aspx	Not current for tariffs, Cost manual is underway, based on the JLN model
	Private health insurance	PHI bodies	Claims	Possible	http://www.nhis.gov.gh/phis.aspx See IQVIA?	(KNUST)
OOP costs	DHS	--	Survey	Yes	See 2014 report (also in HTA model)	Access to raw data?

4. Service use

HTA-related information	Data Source	Institution	Collection method	Equity aspect	Website	Comment
Health services	NHIS	NHIA	Claims	Yes	Benefits package http://www.nhis.gov.gh/benefits.aspx	Mostly paper-based; 18% electronic (pers comm LDS)
	DHIMS	GHS, CHIMG	HIS	Possible	https://www.facebook.com/CHIMGH/?fref=ts Centre for Health information Management Ghana	Access – permission required
	Annual report	GHS	Report	No	http://www.ghanahealthservice.org/downloads/GHS_ANNUAL_REPORT_2016_n.pdf	Latest 2016; 2017 being finalised
	Private Health insurance	PHI bodies	Claims	Possible	http://www.nhis.gov.gh/phis.aspx	(KNUST)
Healthcare Access and Quality Index	Global BoD study 1990-2015	IHME	Collation	Possible	http://www.healthdata.org/research-article/healthcare-access-and-quality-index-based-mortality-causes-amenable-personal-health	based on mortality from causes amenable to personal health care

5. Quality of life

HTA-related information	Data Source	Institution	Collection method	Equity aspect	Website	Comment
DALY	Global BoD study	IHME	Database	NA	http://www.healthdata.org/ghana	no local disability weights

6. Equity

HTA-related information	Data Source	Institution	Collection method	Equity aspect	Website	Comment
Epidemiology	DHS	GHS	Survey	Area, gender, income, literacy	https://dhsprogram.com/what-we-do/survey/survey-display-437.cfm	?
Service use	NHIS	NHIA	Database	Districts, gender	Benefits package http://www.nhis.gov.gh/benefits.aspx	?
	DHIMS	GHS	Database	Districts	GHS access only	?
Equitable Strategies	EQUIST tool	Unicef	Collation	Districts	http://www.equist.info/en/dashboard	considering adoption, recent study tour in India
Healthcare Access and Quality Index	Global BoD study 1990-2015	IHME	Collation	Yes	http://www.healthdata.org/research-article/healthcare-access-and-quality-index-based-mortality-causes-amenable-personal-health	based on mortality from causes amenable to personal health care

Summary

- Data sources for the six domains vary in **extent and quality**
- Ghana has several **large data sources** to support HTA (e.g. DHS) → quite rigorous quality assurance processes
- few accessible data sources for **costs and service u**se
- **NHIS** is a potentially rich source of data on these but has access limitations
- almost no data for the domains of **quality of life and equity**

- **suggest ways HTA proponents may overcome data limitations in availability and quality.**

Implications

- Some HTA **data gaps**

- More data are available for **monitoring** (e.g. data for SDGs) but may not be
  - adequate to inform HTA
  - available in disaggregated form to enable specific analyses

- Support recent initiatives for the **routine collection** of
  - comprehensive and reliable data
  - easily accessible (e.g. in electronic format)

- **Commitment to HTA** will require concerted efforts to
  - leverage existing data sources (e.g. NHIS) and
  - develop and maintain new data (e.g. local health utility estimates)

Activity!

Epidemiology
Costs
Quality of Life
Equity

1. Where would you <u>find</u> the data?
2. What are the <u>key gaps</u>?
3. How do you <u>verify</u> the data?

Epidemiology

- demographics - gender, age, location, income
- vital statistics - births, deaths (age, cause)
- burden of disease - mortality, morbidity, DALY

  e.g. neonatal mortality rate, under-five mortality rate, full immunisation coverage, institutional deliveries, and rates of both communicable (TB and HIV) and non-communicable diseases (NCD)

- level of data (national and sub-national)
- quality assurance processes

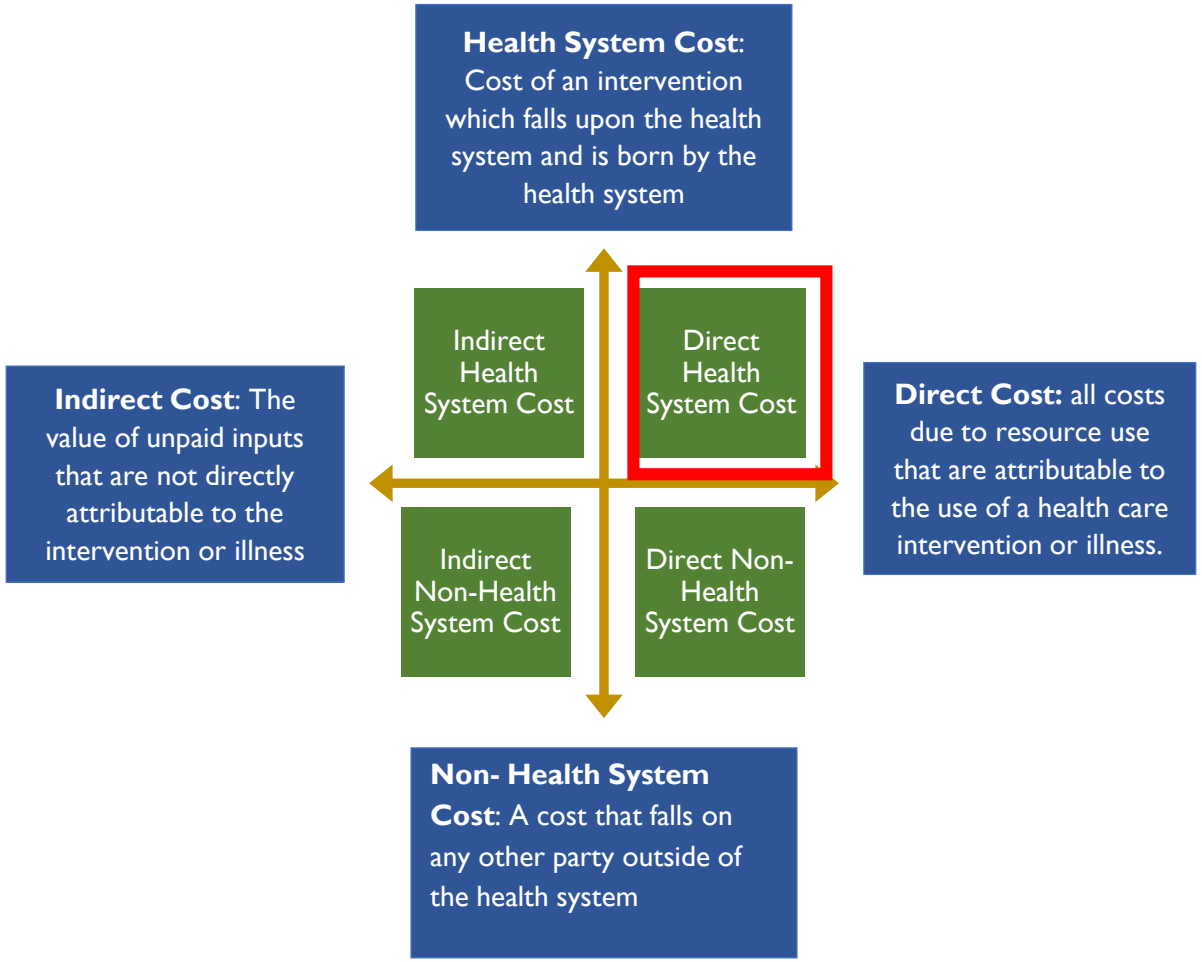
Epidemiology - questions

1. ***Where would you find the data?***
    - MoH, Health service, sponsors
    - access to disaggregated (raw) data
    - currency of data
    - de-identified data (e.g. insurance claims)

2. ***What are the key gaps?***
    - all diseases (e.g. NCD)
    - prevalence vs. incidence
    - private health system

3. ***How do you verify the data?***
    - use of international and comparison → triangulation
    - quality assurance processes
    - representativeness and sampling

Costs



Direct health system costs:

- hospitalisation costs/inpatient care
- medicines
- medical Supplies and equipment
- laboratory supplies e.g. testing kits and other consumables
- medical care services/personnel, i.e. clinicians, nurses
- transport operating costs

Costs - questions

1. ***Where would you find the data?***
   - Primary data collection? Any good examples of collecting and making publicly available? Enhancing transparency on costs? Any innovative ways of collecting cost data?
   - How useful are the international costing databases/costing tools? – OneHealth? WHO CHOICE? –Is there any discussion on adapting the 'prices' stated by global donors to costs?; Private sector cost databases and data kept by them?; Is UHC and move to National Health Insurance models across Africa an opportunity to systematically collect cost data, and centrally housed?
   - Would you use existing literature? – How accurate are those costs? – What steps would you take to mitigate (Adjustion for inflation/deflation etc.?/ is medical inflation different to other measures of inflation in your health system RPI/CPI etc.)?
2. ***What are the key gaps?***
   - Proprietary data – lack of transparency and price negotiation? Good way for the private sector to engage together?
   - Opensource costing tools – OneHealth? WHOCHOICE? – Reliance on costs stated by global donors; Cost databases and data kept by them?
   - Primary data collection? – Key challenges – Key ways to overcome this? – Do you outsource? – What kind of constraints are there – Do you have enough costing experts?
3. ***How do you verify the data?***
   - Do you meet with MoH policy makers?
   - Do you meet with Treasury officials?
   - Do you meet with academics who've undertaken previous studies related to the field?
   - reviews?

Quality of life

Health Related quality of life → how a given intervention affects quality of life (QoL)

1. **Disability adjusted life years (DALYs)**
    - capture the disability associated with living with a given condition, and the alleviation of disability after an intervention
    - alternative to the QALY
    - many LMIC use GBD estimates (if no local QoL data)
    - does not easily allow for modelling of different disease states
    - value judgements for DALY weights → international, not local, experts

2. **Quality adjusted life years (QALYs)**
    - European Quality of life 5 dimensions (EQ5D)
    - most commonly used generic QoL measure
    - cornerstone of HTA in many countries
    - issues with transferring EQ5D datasets across countries

Quality of life - questions

1. ***Where do you find the data?***
   - acceptability of using non-local data
   - use other (e.g. UK/US/Thailand/Zimbabwe) data → intermediate step to developing own QoL
   - any local projects to incorporate local data for decision-making

2. ***What are the key gaps?***
   - DALY or QALY?
   - \+ deaths averted
   - Reasons for choice

3. ***How do you verify the data?***
   - Concept is difficult to understand
   - Need to explain to policy makers

Equity

- Absence of avoidable or remediable differences among groups of people
- Defined ***socially, economically, demographically, or geographically***
- *Health inequities* therefore involve more than inequality with respect to health determinants, access to the resources needed to improve and maintain health or health outcomes.

- Data regarding ***equitable and equal access***, and ***utilisation of services*** is essential to allow for ethical information to be considered in the decision-making process alongside evidence of cost effectiveness

- Data may be extrapolated from large survey samples which links demographic information such as gender, age, geographic location, urban or rural dwelling, and socio-economic status to health behaviours and experiences

Equity - questions

1. ***Where would you find data?***
   - DHS surveys
   - Primary data collection
   - Expert opinion/ interviews with stakeholders
   - Civil society and advocacy groups
2. ***What are the key gaps?***
   - key dimensions important for your country? (e.g. poor, women, regions, tribes)
   - reasons for data gaps (e.g. funding constraints)
   - access to quantitative data
3. ***How do you verify the data?***
   - Expert opinion; stakeholder engagement process
   - How to incorporate 'equity' into an economic evaluation or HTA process
     - explicit in analysis e.g. extended CEA
     - explicit in decision making - can override CE threshold
   - novel or innovative approaches?

Take home I

- World Health Assembly resolution on HITA - encourages member states to strengthen routine collection of health system data as a necessary step towards achievement of UHC
- NHIA has a finite budget so need to optimise available funds for most health → can use HTA!
- but….HTA relies on local data (UK ≠ Ghana) → use local data to drive local priority-setting
- Data collection mechanisms in Ghana and SSA countries:
  - some issues - comprehensiveness and quality
  - not all data needed are currently collected

Take home II

data that <u>does exist</u>

- ensure quality assurance
- comprehensive and representative
- up to date

data that <u>does not exist</u>

<u>short term</u>

- can use data from other neighbouring countries
- clinical consensus
- note the limitations (uncertainty analysis)

<u>long term</u>

- start to plan studies to plug these gaps → primary data collection for e.g. costs and QoL
- can questions be added to the DHS?
- could adding QoL and costs to studies and clinical trials become routine?

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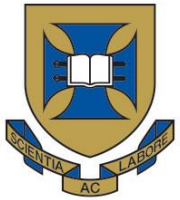

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