The Feasibility of Health Technology Assessment in the Ghanaian Health System

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A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy in Health Economics

Centre for Health Economics Research and Evaluation (CHERE)

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Certificate of originality

I, Rebecca Addo, declare that this thesis is submitted in fulfilment of the requirements for the award of a Doctor of Philosophy in Health Economics, in the Business School at the University of Technology Sydney.

This thesis is wholly my own work unless otherwise reference or acknowledged. In addition, I certify that all information and literature used are indicated in the thesis. This document has not been submitted for qualifications at any other academic institution.

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Signature of student: Production Note: Signature removed prior to publication.

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Glossary

Abbreviation	Meaning
5YPOW	5 year Program of work
AES	Adverse events
AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
AUD	Australian Dollars
BIA	Budget Impact Analysis
CET	Cost Effectiveness Threshold
CEAC	Cost Effectiveness Acceptability Curve
CHEC	Consensus on Health Economics Criteria
CHEERS	Consolidated Health Economics Evaluation Reporting Standards
CHPS	Community based Health Planning and Services
CHRPE	Committee on Human Research Publication and Ethics
DALY	Disability Adjusted Life Year
DCE	Discrete choice experiment
DHD	District Health Director or District health Directorate
DHIMS	District Health Information Management System
DVT	Deep Vein Thrombosis
EBCTCG	Early Breast Cancer Trialists' Collaborative Group
EQ-5D	EuroQol 5 dimension scale
ER	Oestrogen receptor
EuroScan	The international information network on new and emerging health technologies
GBD	Global Burden of Disease
GCO	Global Cancer Observatory
GDP	Gross Domestic Product
G-DRG	Ghana Diagnostic Related Groupings
GHC	Ghana Cedis
GHS	Ghana Health Service
GHS-ERB	Ghana Health Service Ethical Review Board
GLOBOCAN	Global Observatory of Cancer
GNDP	Ghana National Drug Program
GNMP	Ghana National Medicines Policy
HIV	Human Immunodeficiency Virus
HR	Hazard Ratio
HR	Hormone Receptor
HRD	Human Resource Database
HREC	Human Research Ethics Committee
HTA	Health Technology Assessment
HTAi	Health Technology Assessment International
IC	Incremental Cost
ICER	Incremental Cost Effectiveness Ratio
iDSi	International Decision Support Initiative
IHR	Instantaneous hazard rate
INAHTA	International Network of Agencies for Health Technology Assessment
IPDD	Integrated Personnel and Payroll Database

Abbreviation	Meaning
ISPOR	International Society of Pharmacoeconomic Outcome and Research
KATH	Komfo Anokye Teaching Hospital
KNUST	Kwame Nkrumah University of Science and Technology
LLIN	Long Lasting Insecticidal Nets
MCDA	Multi-criteria decision analysis
mg	Milligram
MOH	Ministry of Health
MOU	Memorandum of Understanding
MSD	Musculoskeletal disorders
MST	Median survival time
MTHS	Medium Term Health Strategy
NCCN	National Comprehensive Cancer Network
NHIA	National Health Insurance Authority
NHIS	National Health Insurance Scheme
NICE	National Institute for Health and Care Excellence
OPD	Outpatient Department
PASC	PICO advisory sub-committee
PE	Pulmonary embolism
PICO	Population Intervention Comparator and Outcome
PR	Progesterone receptor
PSA	Probability Sensitivity Analysis
PWS	Postmenopausal Women
QALY	Quality Adjusted Life Year
QHES	Quality of Health Economics Study
RCT	Randomised controlled Trial
RR	Relative risk
SERM	Selective oestrogen receptor modulator
SF-6D	Short form 6-dimension scale
UK	United Kingdom
USA	United States of America
USD	United States Dollars
UTS	University of Technology Sydney
VB	Vaginal bleeding
VSL	Value of statistical life
WHA	World health Assembly
WHO	World Health Organisation
WTP	Willingness to Pay
YLD	Years Lived with Disability
YLL	Years of Live Lost

Abstract

The increasing costs and demands for new health technologies, which is compounded by an increase in production, has resulted in decision makers requiring high quality evidence to prioritise and allocate resources in the health system. Health technology assessment (HTA) provides such evidence and is used worldwide mostly by developed countries. HTA use is not widespread in developing country settings due to the limited human, data and financial resources available to support it. Developing countries like Ghana are planning to introduce HTA with no evidence regarding its feasibility: which systems are available to support it, and which form of HTA is most suitable for the Ghanaian setting. This thesis sought to examine these issues and make recommendations on how Ghana can proceed.

To assess the Ghanaian health system for HTA, quantitative and qualitative methods were used to examine the current decision-making practices from the perspective of national, district and clinical decision makers. Qualitative in-depth interviews were used to assess the knowledge and attitudes of decision makers and researchers about HTA. The technical capacity of Ghana for HTA was assessed using a systematic review of economic evaluation studies in Ghana. Lastly, a case study was conducted using tamoxifen for the hormonal treatment of breast cancer among pre- and peri-menopausal women. The study was designed to assess the applicability and transferability of international data to the Ghanaian context.

The results of the research conducted for this thesis revealed that Ghanaian decision makers were open to a more efficient way of making decisions that considered not only the wellbeing of the patient, but also the economic implications of such decisions, reinforcing the importance of pursuing HTA. However, lack of resources and knowledge on HTA and politico-cultural factors were reported as potential barriers and participants made suggestions to address them. The findings also highlighted the limited human and data capacity available to conduct HTA,

which meant relying on international data. However, these data need to be transformed to be context-specific before they are suitable for use in an economic evaluation.

It was concluded that Ghana will be able to adopt HTA if and when the barriers and challenges reported in this thesis are addressed. However, in the short to medium term, it is recommended that the HTA effort in Ghana focus on appraising generic medicines and unpatented technologies. Findings from these appraisals can guide funding decisions to ensure financial sustainability of the health system.