

Access to maternal health services under the free maternal health policy in the Kassena-Nankana municipality of Northern Ghana

Philip Ayizem Dalinjong

A thesis submitted in fulfilment of the requirements for the Degree of Doctor of Philosophy

Centre for Midwifery, Child and Family Health
Faculty of Health

University of Technology Sydney, Australia

June 2018

Certificate of original authorship

I hereby certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the thesis.

I also certify that the thesis has been written by me. Any assistance that I have received in my research work and the preparation of the thesis itself has been acknowledged in full. I declare that all information sources and literature used are indicated in the thesis.

Signature of Student:

Production Note:

Signature removed prior to publication.

Date: 15 June 2018

Table of Contents

<i>Certificate of original authorship</i>	<i>i</i>
<i>List of Tables</i>	<i>x</i>
<i>List of Figures</i>	<i>xi</i>
<i>Dedication</i>	<i>xii</i>
<i>Acknowledgements</i>	<i>xiii</i>
Images	xv
<i>List of Abbreviations</i>	<i>xvi</i>
<i>Publications arising from the thesis and authors' contributions</i>	<i>xvii</i>
<i>Abstract</i>	<i>xix</i>
CHAPTER 1: INTRODUCTION	1
1.1 Introduction	1
1.2 Definition and importance of UHC	2
1.3 Dimensions of UHC	3
1.4 Brief overview of Ghana	5
1.5 Brief overview of the health system in Ghana	8
1.5.1 Ministry of Health	8
1.5.2 Ghana Health Service	9
1.5.3 Organisation of the Ghana Health Service	9
1.6 Historical overview of health financing in Ghana	11
1.7 The National Health Insurance Scheme (NHIS) in Ghana	12
1.7.1 Financing of the NHIS	13
1.7.2 Exemptions under the NHIS	13
1.7.3 Success story of the operations of the NHIS	13
1.7.4 Challenges under the NHIS	14
1.8 The free maternal health policy	14

1.8.1 Benefits under the free maternal health policy _____	15
1.9 Rationale for the study _____	15
1.10 Main aim and research question for the study _____	16
1.10.1 Specific objectives _____	16
1.10.2 Justification for the study _____	17
1.11 Structure of the thesis _____	17
1.12 Summary of the chapter _____	19
<i>CHAPTER 2: LITERATURE REVIEW</i> _____	21
2.1 Search strategy _____	21
2.2 Measures of maternal deaths _____	22
2.3 Causes of maternal deaths _____	22
2.4 Burden and impact of maternal deaths _____	23
2.5 Strategies for the reduction of maternal deaths _____	25
2.6 Maternal mortality in Ghana _____	27
2.7 Brief review of studies and knowledge gaps _____	28
2.8 The concept of access _____	30
2.8.1 Dimensions of access to health services _____	31
2.8.2 Frameworks for access _____	32
2.9 Affordability _____	34
2.10 Availability _____	36
2.11 Acceptability _____	37
2.12 Quality of health services _____	37
2.13 Framework for the study _____	39
2.14 Summary of chapter _____	41
<i>CHAPTER 3: METHODS</i> _____	42

3.1 Study area	42
3.2 Study design	45
3.3 Ethical approval and considerations	48
3.4 Quantitative study (structured interviews)	49
3.4.1 Sample size calculation	50
3.4.2 Recruitment of women who gave birth in health facilities	51
3.4.3 Recruitment of women who gave birth at home	51
3.4.4 Pre-testing of data collection tools	52
3.4.5 Data collection and analysis	52
3.5 Qualitative study	53
3.5.1 Participants for the in-depth interviews from health facilities	53
3.5.2 Participants for the focus group discussions	54
3.5.3 Data collection and analysis	54
3.6 Summary of chapter	55
<i>CHAPTER 4: FINDINGS (AFFORDABILITY OF MATERNAL HEALTH SERVICES DURING PREGNANCY)</i>	57
4.1 Abstract	57
4.2 Introduction	58
4.2.1 Implementation of the National Health Insurance Scheme (NHIS)	60
4.2.2 The free maternal health policy under the NHIS	61
4.3 Methods	62
4.3.1 Study design	62
4.3.2 Study area	63
4.3.3 Sample size determination for the survey	63
4.3.4 Participants for the qualitative component	64
4.3.5 Recruitment of study participants	64
4.3.6 Study variables	65
4.3.7 Study process for the qualitative component	68
4.3.8 Data analysis and management	69

4.4 Results	69
4.4.1 Socio-demographic characteristics	69
4.4.2 Type of health facility visited during pregnancy	71
4.4.3 Health and related services received during pregnancy	71
4.4.4 Coverage of expenses by the free maternal health policy during pregnancy	72
4.4.5 Actual OOP payments incurred during pregnancy	73
4.4.6 OOP payments for anti-malarial drugs and ultrasound scan	75
4.4.7 Source of financing health expenses	77
4.4.8 Suggestions for improving maternal health services during pregnancy	78
4.5 Discussion	79
4.5.1 Study limitations	82
4.6 Conclusion	83
<i>CHAPTER 5: FINDINGS (AFFORDABILITY OF MATERNAL HEALTH SERVICES AT CHILDBIRTH)</i>	84
5.1 Abstract	84
5.2 Introduction	85
5.3 Methods	87
5.3.1 Study design	87
5.3.2 Study area	87
5.3.3 Study population and sampling	88
5.3.4 Data collection	88
5.3.5 Questionnaire instrument	88
5.3.6 The qualitative study	89
5.3.7 Data analysis and management (quantitative study)	89
5.3.8 Data analysis and management (qualitative study)	90
5.4 Results	91
5.4.1 Socio-demographic characteristics and OOP payments by women	91
5.4.2 Coverage of health expenses by the NHIS during childbirth	93
5.4.3 Estimated OOP payments during childbirth	93

5.4.4 Impact of OOP payments on average monthly household income _____	95
5.4.5 Source of funds for OOP payments during childbirth _____	95
5.5 Discussion _____	96
5.5.1 Buying of drugs and other supplies during childbirth _____	97
5.5.2 Buying of other items for childbirth _____	97
5.5.3 Mean cost for OOP payments during childbirth _____	98
5.5.4 Use of savings and sale of assets for the OOP payments _____	99
5.5.5 Study limitations _____	99
5.6 Conclusion _____	100
 <i>CHAPTER 6: FINDINGS (ACCEPTABILITY AND QUALITY OF MATERNAL HEALTH SERVICES DURING PREGNANCY)</i> _____	
	101
6.1 Abstract _____	101
6.2 Introduction _____	102
6.3 Methods _____	105
6.3.1 Study design _____	105
6.3.2 Study area _____	106
6.3.3 Study participants _____	106
6.3.4 Data instruments _____	106
6.3.5 Recruitment of study participants _____	107
6.3.6 Data analysis and management _____	108
6.4 Results _____	109
6.4.1 Characteristics of participants and number of antenatal visits during pregnancy _____	109
6.4.2 Perception of cleanliness of health facility during pregnancy _____	109
6.4.3 Respectfulness and friendliness of health providers towards clients _____	109
6.4.4 Women's overall satisfaction with quality of services during pregnancy _____	111
6.4.5 Providers' overall satisfaction with quality of maternal health services during pregnancy _____	113
6.5 Discussion _____	113

6.5.1 Study limitations	116
6.6 Conclusion	116
<i>CHAPTER 7: FINDINGS (AVAILABILITY OF MATERNAL HEALTH SERVICES DURING PREGNANCY)</i>	<i>118</i>
7.1 Abstract	118
7.2 Introduction	119
7.2.1 The National Health Insurance Scheme	119
7.2.2 The free maternal health policy in Ghana	120
7.3 Methods	122
7.3.1 Study design	122
7.3.2 Study area	122
7.3.3 Sampling	123
7.3.4 Study tools	124
7.3.5 Quantitative data collection	124
7.3.6 Qualitative data collection	125
7.3.7 Data analysis and management	126
7.4 Results	126
7.4.1 Demand-side	126
7.4.2 Supply-side	130
7.5 Discussion	135
7.5.1 Study limitations	138
7.6 Conclusion	138
<i>CHAPTER 8: FINDINGS (AVAILABILITY AND QUALITY OF MATERNAL HEALTH SERVICES AT CHILDBIRTH)</i>	<i>139</i>
8.1 Abstract	139
8.2 Introduction	140
8.3 Methods	142
8.3.1 Study area	142

8.3.2 Study design and processes _____	142
8.3.4 Data management and analysis _____	147
8.4 Results _____	147
8.4.1 Background characteristics of women and use of different health facilities for childbirth _____	147
8.4.2 Availability of basic essential inputs for childbirth _____	148
8.4.3 Privacy in health facilities during childbirth _____	150
8.4.4 Women’s overall satisfaction during childbirth _____	151
8.4.5 Health providers’ overall satisfaction with quality of care for childbirth _____	152
8.5 Discussion _____	153
8.5.1 Availability of clean water and electricity for childbirth _____	153
8.5.2 Availability of emergency transport for childbirth _____	154
8.5.3 Inadequate basic drugs, supplies, equipment and physical space _____	154
8.5.4 Lack of privacy in health facilities during childbirth _____	155
8.5.5 Overall satisfaction with quality of care during childbirth _____	155
8.5.6 Strengths and limitations _____	156
8.6 Conclusion _____	156
<i>CHAPTER 9: SYNTHESIS OF STUDY FINDINGS</i> _____	158
9.2 Aim and objectives of the study _____	159
9.3 Synthesis of study findings _____	160
9.4 Facilitators of access to maternal health services _____	160
9.5 Barriers for access to maternal health services _____	162
9.6 Lessons learnt from the findings _____	163
9.6.1 Lesson number one: OOP payments persisted despite the NHIS _____	163
9.6.2 Lesson number two: A weak health system challenged access _____	164
9.6.3 Lesson number three: Lower level health facilities are poorly resourced _____	165
9.6.4 Lesson number four: Lack of essential inputs and infrastructure impedes quality care _____	166

9.7 Contribution of the thesis to the body of knowledge _____	166
9.8 Strengths and limitations of the study _____	167
9.10 Future research _____	168
9.11 Summary and conclusion _____	169
<i>REFERENCES</i> _____	<i>170</i>
<i>APPENDICES</i> _____	<i>189</i>
Appendix A: Ethics approval letter (Institutional Review Board, Navrongo, Ghana) _	189
Appendix B: Ratification Letter (Human Research Ethics Committee, UTS) _____	192
Appendix C: Information and consent form for women _____	194
Appendix D: Information and consent form for health providers _____	196
Appendix E: Summary of objectives and methods of data collection _____	198
Appendix F: Structured questionnaire for interviews with women _____	200
Appendix G: Checklist for health facility survey _____	210
Appendix H: Interview guide for in-depth interviews with health providers _____	212
Appendix I: Interview guide for focus group discussions with women _____	214
Appendix J: Interview guide for interviews with health insurance managers _____	216

List of Tables

Table 1: Key developmental indicators for Ghana 2014	7
Table 2: Summary of selected frameworks of access and indicators.....	33
Table 3: Developmental indicators for the Kassena-Nankana municipality.....	44
Table 4: WHO recommendations for improving health of pregnant women	59
Table 5: Topics covered for the study.....	66
Table 6: Direct medical and direct non-medical expenses.....	67
Table 7: Socio-demographic characteristics of participants	70
Table 8: Health and related services received during pregnancy.....	72
Table 9: OOP expenditure incurred during pregnancy	74
Table 10: Socio-demographic characteristics and OOP payments by women	92
Table 11: Estimated OOP payments during childbirth	94
Table 12: OOP payments as a percentage of average monthly household income	95
Table 13: Domains for improving and monitoring quality of maternal health services	104
Table 14: Respectfulness and friendliness of health providers towards clients.....	110
Table 15: Socio-demographic characteristics of participants	127
Table 16: Perceived distance and mode of transport to nearest health facility.....	129
Table 17: Summary of study design and processes	143
Table 18: Availability of basic emergency and newborn care.....	146
Table 19: Reasons for use of different health facility for childbirth.....	148
Table 20: Availability of basic essential inputs in health facilities.....	149

List of Figures

Figure 1: Dimensions of Universal Health Coverage	4
Figure 2: Map of Ghana and its location in Africa on the global map.....	6
Figure 3: Organisation of the Ministry of Health	9
Figure 4: Organisation of the Ghana Health Service	10
Figure 5: Brief historical overview of health financing in Ghana	11
Figure 6: Trend of MMR for Ghana (1990-2015)	27
Figure 7: Study framework	40
Figure 8: Map of the Upper East region showing districts including Kassena-Nankana East (municipality).....	43
Figure 9: Design of the convergent parallel mixed method.....	46
Figure 10: Summary of the study design	48
Figure 11: Type of health facility visited during pregnancy.....	71
Figure 12: Source of funds for OOP payments.....	78
Figure 13: Suggestions for improving use of maternal health services during pregnancy ..	79
Figure 14: Source of funds for OOP payments during childbirth.....	96
Figure 15: Women’s overall satisfaction with quality of services during pregnancy.....	112
Figure 16: Perceived time taken to reach nearest health facility irrespective of mode of transport.....	128
Figure 17: Perception of waiting times at nearest health facility during pregnancy.....	130
Figure 18: Synthesis of study findings.....	161

Dedication

To the memory of my late mother, who saw the start of this journey, but could not see the end.

Acknowledgements

This is the one moment I have been yearning for, to show appreciation to all the people who made this journey possible for me. I cannot find enough words to thank my primary supervisor, Professor Caroline Homer. She played a key role from the time of my application for admission to the last moment of the thesis submission. “How did you get to know your supervisor?” people would always enquire. It all started with just an email I sent to her from Ghana, after coming across her profile and email address on the University’s website. Her response to my email was very swift, indicating that she was willing to be my supervisor and the process began from there. Thank you very much for your guidance, encouragement and support, and for the immense knowledge I have acquired from the field of midwifery.

To my secondary supervisor, Associate Professor Alex Wang, I am equally thankful for accepting me as your student when the invitation was extended to you. Your attention to detail is incredible; this has greatly perfected this thesis. From you, I have acquired the skills required of a public health specialist. I can comfortably say that, I am now a blended product of both midwifery and public health, given the expertise of my two supervisors. I will ever remain grateful.

My thankfulness goes to the Australian Government’s Research Training Programme and the Graduate Research School, University of Technology Sydney (UTS) for the award of two scholarships for the PhD training. My dream of pursuing a PhD would not have materialised without these awards. I also received travel support for my data collection in Ghana from the UTS WHO Collaborating Centre for Nursing, Midwifery and Health, and was awarded Health Services and Practice Research Degree Development funding for a conference presentation of my thesis in Portugal. I appreciate the support. I wish to thank the Research Office Team, Faculty of Health (UTS) as well, for providing the necessary support and congenial environment for us, research students. The Research Student Fora are a great platform for learning. I have benefitted greatly from the fortnight meetings by the nursing and midwifery group.

A big thank you to the director of the Navrongo Health Research Centre, Ghana, Dr Abraham Oduro, for the support, right from the time I got the admission to pursue the PhD, up to date. You provided technical and logistical support for my data collection in Ghana, I am grateful. To the staff of the centre, especially Dr Raymond Aborigo, Mr Isaiah Agorinya, Mr Charles Adjei Manful, Mr Victor Adoctor, Mr Timothy Augose, Mr Moro Ali and Mr Peter Wontuo. You played key roles in my data collection, many thanks!

I wish to also thank Dr John Koku Awoonor-Williams and Dr Kofi Issah, both former regional directors of the Ghana Health Service, Upper East region. Dr Koku Awoonor-Williams was very instrumental in my coming for the PhD programme in Australia. Dr Issah also gave approval for the conduct of the data collection in the health facilities in the study area. I also wish to register my gratefulness to the District Director, Ghana Health Service, Kassena-Nankana Municipality; all in-charges of the health facilities; and the midwives and nurses who participated in the study. To all the women who took part in the study, I say thank you! I am very optimistic that maternal health services in Ghana will be improved for you in the near future.

Mr Alexander Laar, I have known you for over twenty years. You are more than a brother. Many thanks for the support and encouragement throughout these years. You are partly responsible for this accomplishment.

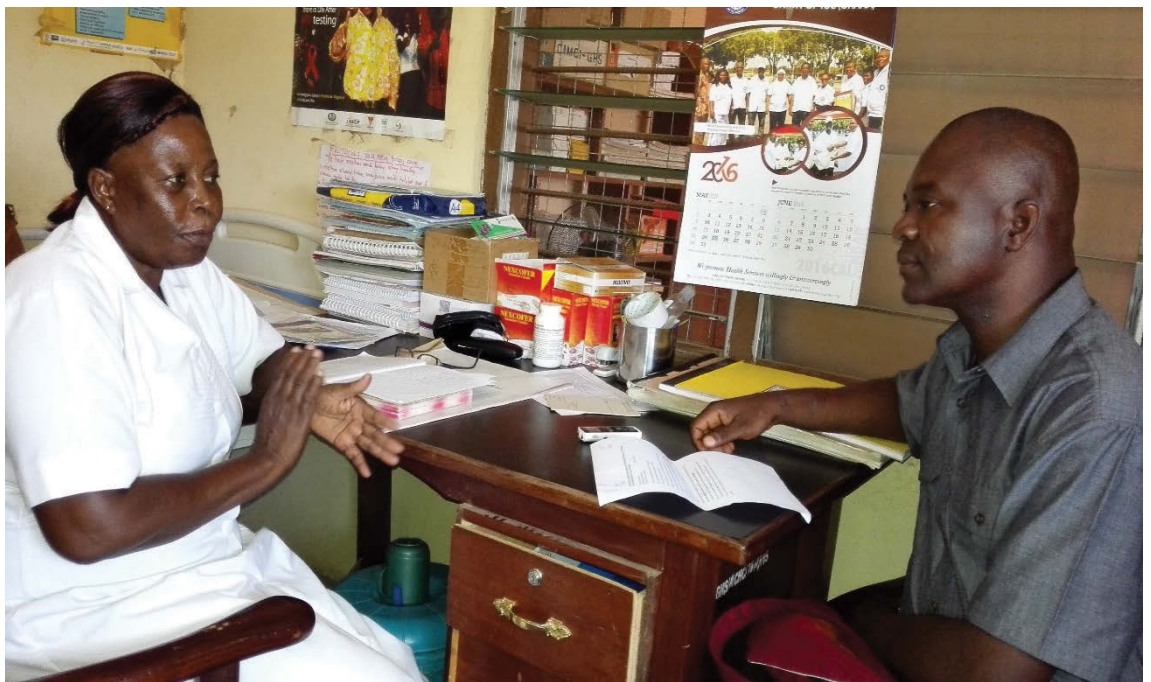
My family, I am guilty of always being a “runaway” man. In the last ten years, I have not been stable, but out there pursuing knowledge. Thank you for the patience and endurance. To my late mother especially, you did your best to send me to school, despite all the hardships you faced. You saw the start but could not live to see the completion. You are a hero! You will forever remain in my heart.

Images

Image 1: Focus group discussion with women



Image 2: An in-depth interview with a midwife



List of Abbreviations

ANC: Antenatal Care

CHPS: Community-based Health Planning and Services

DMHIS: District-based Mutual Health Insurance Schemes

FGDs: Focus Group Discussions

GH¢: Ghana Cedis

GHS: Ghana Health Service

GSS: Ghana Statistical Service

HIV/AIDS: Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome

IDIs: In-depth Interviews

KNEDA: Kassena-Nankana East District Administration

MDGs: Millennium Development Goals

MMR: Maternal Mortality Rate

MOH: Ministry of Health

NHDSS: Navrongo Health and Demographic Surveillance System

NHIA: National Health Insurance Authority

NHIS: National Health Insurance Scheme

OOP: Out of pocket

SDGs: Sustainable Development Goals

UHC: Universal Health Coverage

UN: United Nations

UNICEF: United Nations Children's Fund

UTS: University of Technology Sydney

WASH: Water, Sanitation and Hygiene

WHO: World Health Organization

Publications arising from the thesis and authors' contributions

Peer-reviewed articles

Philip Ayizem Dalinjong, Alex Y. Wang and Caroline S. E. Homer, Has the free maternal health policy eliminated out of pocket payments for maternal health services? Views of women, health providers and insurance managers in Northern Ghana, *PLoS ONE* (2018) 13(2): e0184830. <https://doi.org/10.1371/journal.pone.0184830>.

Philip Ayizem Dalinjong, Alex Y. Wang and Caroline S. E. Homer, The operations of the free maternal care policy and out of pocket payments during childbirth in rural Northern Ghana, *Health Economics Review* (2017) 7:41 DOI 10.1186/s13561-017-0180-4.

Philip Ayizem Dalinjong, Alex Y. Wang and Caroline S. E. Homer, The free maternal health policy: acceptability and satisfaction with quality of maternal health services during pregnancy in rural Northern Ghana (*accepted 03 January 2018, Journal of Public Health in Developing Countries*).

Philip Ayizem Dalinjong, Alex Y. Wang and Caroline S. E. Homer, Demand- and supply-side factors affecting the use and provision of maternal health services under the free maternal health policy: Views and perceptions of women and health providers in rural Northern Ghana (*under review, Journal of Health Economics Review*).

Philip Ayizem Dalinjong, Alex Y. Wang and Caroline S. E. Homer, Are health facilities well equipped to provide basic quality childbirth services under the free maternal health policy? Findings from rural Northern Ghana (*Revised and submitted, 29 March 2018, BMC Health Services Research*).

Conference presentation

14th International Conference on Urban Health (ICUH 2017), “*Has the free maternal health policy eliminated out of pocket payments for maternal health services? Views of women, health providers and insurance managers in Northern Ghana*”, Coimbra, Portugal, September 26-29, 2017.

Authors’ contributions

Study conceptualisation: Philip Ayizem Dalinjong, Alex Y Wang and Caroline SE Homer

Data collection and analysis: Philip Ayizem Dalinjong

Write up: Philip Ayizem Dalinjong

Critical review and supervision: Alex Y Wang and Caroline SE Homer

Abstract

Introduction

Ghana implemented the National Health Insurance Scheme (NHIS) in 2005 to improve access to health services, for the achievement of universal health coverage. A free maternal health policy was implemented under the NHIS to enhance access for pregnant women. It is unknown if the policy has reduced access barriers regarding affordability, availability, acceptability and quality of care. Therefore the aim of the study was to explore factors affecting access in the form of affordability, availability, acceptability and quality of care under the NHIS policy.

Methods

A cross-sectional survey was conducted in the Kassena-Nankana municipality of the Upper East region of Ghana. The study used parallel mixed methods; it collected and combined quantitative and qualitative data. Questionnaires were administered to women (n=406) who gave birth in facilities (n=353) and at home (n=53). In-depth interviews (IDIs) were carried out with health providers (n=25) and insurance managers (n=3), while focus group discussions (FGDs) were held with women (n=10). Descriptive statistics were used for the quantitative data. The qualitative data were analysed using a thematic analysis process.

Results

Affordability

Women made out of pocket payments (OOP) under the policy, averaging GH¢17.50 (US\$8.90) and GH¢33.50 (US\$17.00) respectively, during pregnancy and childbirth. About 36% (n=145/406) of women incurred what was classified as ‘catastrophic’ OOP payments over 10% threshold of household income, affecting their welfare.

Availability

Distance and time were barriers to care seeking. Infrastructure, laboratory services, accommodation, equipment, basic drugs and supplies were limited and often inadequate. The community-based health planning and services compounds were particularly challenged. Of

the 14 study facilities, only two (14%) had a source of clean water, and five (36%) had a regular power supply. Emergency transport for referral was also unavailable.

Acceptability

Women perceived facilities to be clean despite the limitations in infrastructure. Providers were perceived to be respectful and friendly. Eighty-nine percent (n=314/353) of women revealed a lack of privacy at childbirth, which was confirmed in IDIs.

Quality of care

Overall, 74% (n=300/406) and 77% (n=272/353) of women were very satisfied or satisfied with quality of care during pregnancy and at childbirth respectively, which was supported in FGDs. Providers reported being dissatisfied, due to the challenges associated with service provision.

Conclusion

Despite the policy, findings showed that out of pocket payments still existed and one third of women were significantly disadvantaged by the payments. Nevertheless, most women were satisfied with their care, although this could be because they were unaware of what high quality care might include. Providers were aware of the limitations of care provision and many reported being dissatisfied with the service they could provide. The government of Ghana, the National Health Insurance Scheme and other stakeholders should embark on resourcing facilities as well as infrastructural improvements. These would improve access to services and staff satisfaction, for the achievement of universal health coverage.