A model for direct entry midwifery education and deployment in Ethiopia: Transforming rural communities and health care to save lives

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A thesis submitted in accordance with the partial requirements for the admission to the degree of Masters of Midwifery (Research)

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2014

CERTIFICATE OF AUTHORSHIP/ORIGINALITY

I 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 text.

I also certify that the thesis has been written by me. Any help I have had in my research work and in the preparation of the thesis itself has been acknowledged. In addition, I certify that all the information sources and literature used are indicated in the thesis.

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ACKNOWLEDGEMENTS

I would like to thank many people for their support and very generous encouragement while I have been on this journey. To the Ethiopian staff, students and graduates who took part in this study, thank you. This is your story; you are inspiring midwives in the most challenging environment. Thank you especially to my Ethiopian 'brother' and fellow midwife Solomon.

To my supervisors, thank you for your guidance and support. To the ever positive Doctor Angela Dawson for her amazing breadth of knowledge, timely cups of tea and a shared love of Africa. To Professor Caroline Homer; thank you for your patience, brilliant super-fast editing and for pulling me up when things went pear shaped. To Professor Nicky Leap, thank you for your love of the 'story', for listening and for wading through my findings. To Professor Deborah Davis, for helping to get me started.

To Priya Nair– for your welcoming smile, answers to pretty much all questions and for making things work. To all my study buddies in the HDR study room. What a privilege to share this time with you; Christine, Dessie, Geraldine, Hiba, Jan, Linna, Melanie, Pauline, Penny, Sakantala, the two Sarahs' and Vijay, Thank you for sharing advice, resources and laughter.

To my wonderful children Alleytia, Lewis, Martin and Dylan Bennett; thank you for all your patience and understanding and the occasional shoulder massage. Thank you also to Valerie and Fred Bennett for your love and meals.

To my lovely girlfriend Solveig – for cups of coffee and skype chats (May we now have more) and hugs across the ocean.

To Mum and Dad, George Flynn and Rita Keogh-Flynn you gave me the love of learning even though it didn't come easily, and again to my Mum - an amazing testimony that there is no age limit in the pursuit of knowledge. Thank you for your meticulous, reading, editing, late nights and faith in me.

Most of all thank you to my best friend and husband Mark – you have always encouraged and supported me to follow wherever my midwifery passions led; this thesis is dedicated to you

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ABSTRACT

Background: In Ethiopia, a landlocked country in the horn of Africa, only 10% of women give birth with a skilled attendant and the health workforce meets an estimated maternal and reproductive need of only 32%. Midwives save lives, however most midwives live in cities, while 83% of the Ethiopian population live in rural areas. There is therefore an urgent need to scale up the number of midwives and deploy them where they are needed. The aim of this study was to examine the outcomes of a new midwifery educational and rural deployment model which was implemented at the Hamlin College of Midwives in Ethiopia.

Methods: A mixed methods design was used to investigate stakeholder experiences and associated health service and outcome data. A thematic analysis of qualitative semi structured interviews with students, new graduates and staff members of the College was undertaken. A descriptive analysis of selected health service data was also undertaken before and after the deployment of Hamlin midwives.

Results: Three major themes emerged from the analysis. These are: the journey to midwifery; becoming a midwife; and innovation and transformation These themes revealed the challenges in accessing and pursuing education for rural girls, the transition academically, culturally and socially for midwifery students from rural areas, the passage of 'novice to professional' midwife as well as the emergence of professional midwives who are innovative and passionate advocates for women's health within their own communities.

Conclusion: Midwives who are recruited from rural areas, educated to fulfil the international competencies, thoughtfully deployed, supported and enabled with resources and referral networks can provide highly skilled, culturally sensitive woman centred care. Maternal health service usage and community engagement can be enhanced by the employment of local midwives who not only provide an important service but can be an agent of change through their action as a role model for girls, young women and their communities.

ABBREVIATIONS

Antenatal Care	ANC
Basic Emergency Obstetric Care	BEmOC
Evidence Based Practice	EBP
Ethiopian Federal Ministry of Health	EFMOH
Ethiopian Federal Ministry of Education	EFMOE
Emergency Obstetric Care	EmOC
Ethiopian Midwives Association	EMA
Higher Education Institution	HEI
High Income Country	HIC
International Confederation of Midwives	ICM
Intimate Partner Violence	IPV
Low Income Country	LIC
Millennium Development Goal	MDG
Maternal Mortality Rate	MMR
Midwives	Mw
Post-Partum Haemorrhage	PPH
Skilled birth Attendant	SBA
State of the Worlds Midwifery Report	SOWMy
Traditional Birth Attendant	TBA
United Nations Population Fund	UNFPA
World Health Organization	WHO

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PREFACE: A VISIT TO A HEALTH CENTRE IN RURAL ETHIOPIA

The dust billowed from under the 4WD filling the cabin and our lungs as it negotiated its way along the pot-holed road. Our destination was a small village in the semi-arid and mountainous area of northern Ethiopia. Local health officials were accompanying us on a visit to assess the maternal health work in a rural health centre. Occasionally, we passed farming families walking to the weekly market; the women, donkeys and camels laden with produce and wood. At one point, our capable driver miraculously squeezed past an enormous boulder that had come to rest in the middle of the road, having recently rolled from higher up the mountain.

The new health centre stood out in the ancient village of stone tukals (traditional house). The young midwife, Alemnesh* greeted us and explained that a woman had given birth less than two hours previously. My midwife colleague and I asked if we could be of any assistance and permission was given by the new mother for us to enter the delivery room. We were encouraged to see the midwife assisting Mary* to breast feed her baby but confused to find her still lying on the very narrow delivery 'couch' and not on the more comfortable 'postnatal bed'. Alemnesh explained to us that at 34 years of age Mary was an 'old primip' and she feared that she would have a postpartum Haemorrhage (PPH) – because of this, Alemnesh had instructed Mary to lie flat with her legs crossed as she had been taught by an older nurse in the health centre. Despite her fear Alemnesh had not however examined the placenta, palpated Mary's uterus, checked her blood pressure, pulse, her blood loss or assisted Mary to empty her bladder, all of which are normal practice. Alemnesh's fear was compounded by not having many resources such as essential drugs, intravenous fluids or a means of transporting a woman in an emergency.

We gently worked together carrying out a full postnatal check and assisting Mary off the 'couch' to empty her bladder and wash. We discussed the normal postnatal physiological process and management along with the risk factors, signs and symptoms of a PPH. It was a privilege to work alongside Alemnesh and to witness her genuine care and concern for Mary and Mary's baby. Alemnesh had a passion for midwifery, the women of the area and was keen to learn and to share her own experiences.

Alemnesh explained that she felt anxious and stressed each time a woman came to the health centre as there had not been much work and she still lacked confidence with her skills. She also explained that as a student she had very little clinical instruction or experience and like many of her peers had graduated and was registered after having assisted with only two births. Alemnesh was not from the area where she was assigned and did not speak the local language; she felt that traditional belief's, a lack of trust in her as an outsider and in modern medicine in general, prevented many women from coming to the health centre.

When it came time to leave, crying Alemnesh explained that this had been the first time since her graduation that she had worked with colleagues and she asked when we would come back to visit and work with her again.

Some months later we learnt that Alemnesh did not finish her 'service' in the health centre and like so many health workers in rural areas she moved to a city closer to family. Sadly the health centre was left without a midwife for more than a year after her departure.

*Names have been changed.

A personal account from a visit to a rural area in northern Ethiopia 2008

Note: Alemnesh was not a graduate from the Hamlin College of Midwives

Figure 1: A Hamlin College student Midwife on clinical placement

Taken with permission by Annette Bennett, 2009

1 INTRODUCTION

The preface of this thesis outlines the story of Alemnesh, a very typical story in rural and remote areas of Ethiopia. Her story illustrates just some of the challenges facing midwives working in rural Ethiopia and the limitations of their education, training and on-going support. In response to the many challenges faced by women in rural Ethiopia, the Hamlin College of Midwives established an innovative direct entry midwifery programme. This study examines this programme through the eyes of a group of staff as well as midwives and students who were recruited from rural areas, educated at the Hamlin College of Midwives, and then deployed to their areas of origin to work in government health centres. The thesis also describes the maternal health outcomes in four Health Centres over the first year of deployment. The experiences of students, graduate midwives and key staff provided rich data to increases knowledge and

understanding of the challenges, issues, culture and context surrounding midwifery education and rural deployment in Ethiopia.

1.1 Background

In every culture and community throughout the world, the birth of a baby is almost always a time of celebration and rejoicing, this is no less the case in Ethiopia. Whether the birth is taking place in a hospital or in a traditional 'tukul' (a cone-shaped hut commonly made of mud and thatched) the woman's family will be concerned for the health and safety of both mother and child.

1.2 Maternal mortality

The most recent figures for the global maternal mortality ratio indicate a decrease of 45% from 1990to 2013(WHO et al. 2014). The actual number of deaths has decreased globally from 289,000 in 2013 down from 523,000 in 1990(WHO et al. 2014). Although this reduction is welcome news, all too frequently however for families throughout much of the developing world, a pregnancy and the birth of a baby are accompanied by fear and tragedy.

The disproportionate rate of maternal death across the world reveals the largest disparity in public health figures when comparing high income countries(HIC) to low income countries (LIC) (Filippi et al. 2006; Ronsmans & Graham 2006). Low income countries account for 99% (286,000) of the maternal deaths that occur throughout the world (Say et al. 2014). Sixty two per cent of these deaths occur in Sub Saharan Africa (179,000), followed by Southern Asia (69,000) and the lower levels(although still very high) of maternal mortality in LICs are recorded in the Oceania region at 510 (Say et al. 2014, p. 21).

Maternal mortality is defined as:

> *'the death of a woman while pregnant or within 42days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes'*(Say et al. 2014, p. 4)

Maternal death most commonly occurs during labour, birth, and the immediate postnatal period (Ronsmans & Graham 2006). The causes of maternal mortality are well known (Khan et al. 2006; Say & Raine 2007; WHO et al. 2014) and can be divided into two main categories; direct causes (73%) and indirect causes (27.5%)(Say et al. 2014). The chief direct causes of maternal mortality worldwide include haemorrhage; 27.1%, with two thirds of these as a result of postpartum haemorrhage, hypertension 14%, sepsis 10.9%, abortion 7.9% and embolism together with other direct causes accounting for 12.8% (Say et al. 2014). Analyses of the indirect causes of MMR indicate that 70% are from pre-existing conditions such as human immunodeficiency virus (HIV), whereby the infection is exacerbated by pregnancy and accounts for 5.5% of indirect causes(Say et al. 2014). The contribution of HIV to increasing MMRs is evidenced in countries such as Chad, Nigeria, Gabon and the Central African Republic for example(Hogan et al. 2010).

Intimate Partner Violence (IPV), which can occur in pregnancy and the perinatal period, is increasingly being recognised as a major contributor to poor health outcomes for both women and newborns(Devries et al. 2010). Intimate Partner Violence is more prevalent in African and Latin American countries when compared to some European and Asian countries (Devries et al. 2010). In Ethiopia, violence by an intimate partner, including during pregnancy, was more prevalent in rural areas with national lifetime

prevalence of59%(García-Moreno et al. 2005, p. xiii).In Ethiopia, physical abuse was found to increase during pregnancy and for 13% of the women who had experienced IPV the abuse began during pregnancy(García-Moreno et al. 2005, p. xv).

For every woman who dies it is believed that there are another 20 women who suffer chronic and debilitating health problems (UNFPA 2012b). It is estimated that 2 million women worldwide are living with debilitating illness and physical impairment as a result of pregnancy and childbirth; the most common of which is obstetric fistula (UNFPA 2012b). Worldwide it is estimated that there are 50,000 new cases of obstetric fistula occurring annually (UNFPA 2012b).

The HIV epidemic, as mentioned earlier and improvements in classifying, identifying, and registering maternal deaths for example in the USA, Norway, Canada and Afghanistan with the inclusion of late maternal deaths, were among explanations given for countries where maternal mortality ratios have deteriorated (Hogan et al. 2010). Improved MMRs in the countries that continue to carry the highest burden of maternal mortality are hindered by on-going poverty, high fertility rates, poor education (Ronsmans & Graham 2006), and in some cases conflict and war(AM O'Hare & Southall 2007)

Dropping fertility rates alone can contribute to reductions in overall maternal mortality rates as is expected to be the case in India where a 3 million drop in the number of births is predicted to result in a 9% reduction in maternal deaths (Ronsmans & Graham 2006). In Sub Saharan Africa, however, births are predicted to continue to rise and will result in a continued corresponding increase in the numbers of maternal deaths (Ronsmans & Graham 2006; UNFPA, ICM & WHO 2014). Poor information, access and community awareness maintains high levels of unmet need for family planning and a

higher burden of associated maternal deaths in rural women and adolescents (Cabero-Roura & Rushwan 2014).

1.3 Reducing maternal mortality is achievable

High income countries (HIC) and many middle income countries (MIC) achieved reductions in their maternal mortality rates initially through the provision of professional midwifery care at birth (Van Lerberghe & De Brouwere 2000). The benefits of well-trained professional midwives was most apparent in Sweden as early as the 18th century; prompted by the recognition that many maternal deaths were preventable. The government of Sweden supported a nation-wide commitment to provide every village with a professional midwife (Hogberg 2004; Van Lerberghe & De Brouwere 2000). Maternal mortality was further reduced by a rigorous training of midwives to carry out assisted births and standard application of aseptic techniques. These interventions reduced the MMR from 900 in 1750 to 230 per 100,000 live births by 1900 (Hogberg 2004). Further reductions were seen in the first 30 years of the 20thCentury in the United Kingdom (UK), Europe and the United States of America (USA)with improvements in obstetric surgery and aseptic techniques along with the introduction of sulphonamides, ergometrine, blood transfusions and penicillin (Loudon 2000). These combined interventions further reduced the MMR to 20 - 30 deaths per 100,000 live births by the 1960's (Van Lerberghe & De Brouwere 2000). During the second half of the 20thCentury a number of developing or transitional countries also began to see a decrease in their maternal mortality rates. Thailand was able to reduce their MMR from 400 to 50 per 100,000 deaths from 1960 to 1984 along with a 50% reduction of MMR in Malaysia and Sri Lanka in the same period (Pathmanathan et al. 2003; Ronsmans & Graham 2006). Presently the MMRs of Thailand, Malaysia and Sri Lanka are 26, 29 and

29 respectively (TheWorldBank 2014b). The reductions in Malaysia and Sri Lanka were thought to be due to a commitment to expanding health infrastructure and human resources (Pathmanathan et al. 2003). Subsequently access to basic healthcare and maternal health care improved, particularly in previously poorly provided for rural areas (Pathmanathan et al. 2003).The professionalisation of midwifery, the up scaling of midwifery education as well as the registration of births and deaths, were also seen to play a strong role in improving accountability and quality of maternal healthcare and reducing maternal deaths (Pathmanathan et al. 2003). As well as improving quality and access to health care, the governments of Malaysia and Sri Lanka implemented parallel strategies to realise social and economic development alongside the development of the health care system;

> *'The development programs were based on the concept that basic health care acts in synergy with basic education, water and sanitation and integrated rural development. Women's involvement was emphasised … and gender equality was a priority in both countries… basic health care packages included malaria control, child health and family planning'* (Pathmanathan et al. 2003, p. 6).

Reductions in maternal mortality were seen in China by the late 80's as a result of the majority of women giving birth with a skilled attendant in a health facility. For the same reason reductions were also seen in Egypt and Honduras by the late 1990's to 2000 (Hogan et al. 2010; Koblinsky et al. 2003).These countries also upgraded access to emergency obstetric care, by improved communication and transportation of emergency cases, nationwide maternal health campaigns as well as rural health facility expansion (Koblinsky et al. 2003, p. 86). In Honduras and Cuba, increased health facilities and well trained midwives were complemented by the government strategy of

building maternity waiting homes alongside hospitals. Women with complications or from distant rural areas could come and stay close to the hospital or health centre towards the end of their pregnancy (Koblinsky et al. 2003, p. 21). Improved maternal health has been found with the removal of costs related to pregnancy care and birth (Borghi et al. 2006)while in India, incentives to give birth with a skilled attendant have improved maternal health outcomes (Shaw & Cook 2012).

It is important to note that Case studies on China and Brazil have shown that strategies to decrease maternal mortality focused efforts on increasing institutional and emergency services, with midwives becoming marginalised to almost non-existent(Renfrew et al. 2014). These countries now experience some of the world's highest rates of caesarean section (Renfrew et al. 2014). Despite the gaps in unmet need for medically indicated life-saving caesarean sections, in countries presently experiencing a high burden of maternal mortality, high rates of caesarean section without medical indication is associated with poor perinatal outcomes and takes scarce resources away from primary health services(Gibbons et al. 2012; Renfrew et al. 2014).

By 1987, increasing concern by the international community for countries that continued to lag behind the rest of the world in terms of their persistent maternal mortality figures led to the 'Safe Motherhood Initiative' (AbouZahr 2003). This movement aimed to mobilise governments and communities to improve maternal health (AbouZahr 2003). This global commitment to address maternal mortality along with other key development indicators gained momentum in 2000, when 189 countries signed the Millennium Development Goals (MDG). Goal Five (5) specifically aims to reduce the global maternal mortality ratio (MMR) by three quarters by 2015 (UNICEF

2010). The achievement however of a 75% reduction in MMR globally is behind schedule in many countries (Cabero-Roura & Rushwan 2014).

Progress in improving maternal health has also gained momentum when the provision of maternal health services is recognised as a human rights issue (AbouZahr 2003; Shaw & Cook 2012). When countries fail to address the obstacles that continue to prevent women from accessing safe care during pregnancy and birth; poverty, user fees, a lack of facilities, a lack of skilled care, drugs or equipment they deny their citizen's basic human rights. Courts in Brazil, India and Paraguay have demanded reparations for families who experienced maternal death (Shaw & Cook 2012).

Substantial gains in maternal survival demands a 'panoply of initiatives' supported by political and economic commitment, leadership and collaboration (AbouZahr 2003; Fauveau, Sherratt & de Bernis 2008; Filippi et al. 2006). Addressing the 'three delays'; the first delay in seeking help, the second delay in accessing and paying for transport to a health facility, and thirdly the delays caused by a lack of finances, skills, drugs or equipment when at the health facility (Thaddeus & Maine 1994), have become priorities in improving maternal health care (Essendi, Mills & Fotso 2011).

Strategies that focus on the first delay include educating women and the community as a whole about being alert to 'danger signs' in pregnancy and planning ahead with financial resources in the case of an obstetric emergency (Cabero-Roura & Rushwan 2014). This includes the importance of timely decision making when a complication has developed. The second delay can be reduced by families being encouraged to plan for the cost and provision of transport in an emergency, and when governments, NGOs and communities improve infrastructure, in terms of bridges and roads and assist with emergency transport options (Borghi et al. 2006; Thaddeus & Maine 1994). Reductions

in the third delay requires the provision of skilled and motivated health care workers, primarily midwives, equipped with the supplies and drugs they require at the health centre level (Borghi et al. 2006; Cabero-Roura & Rushwan 2014; Campbell & Graham 2006; Waiswa et al. 2010)and the provision of emergency obstetric care services (Campbell & Graham 2006).

An important strategy towards improved maternal health is ensuring universal access to health care(WHO 2013). There is a lack of clarity and poor dissemination surrounding the application of Universal Health Coverage (UHC) in Ethiopia(Alebachew, Hatt & Kukla 2014). Despite work towards improving access to primary health care by increasing the number of health centres and health posts and strategies to improve supplies and staffing in health centres (Alebachew, Hatt & Kukla 2014), the cost of maternal health care is still a major factor preventing women and families from accessing the health care they need (Shiferaw et al. 2013).

Taking steps to reduce infectious diseases such as HIV, chronic illness such as malaria and conditions such as malnutrition improves community health overall and assists in reducing the indirect causes of maternal death(Campbell & Graham 2006). Providing access to contraception and providing for the global unmet need for family planning could reduce maternal mortality by a quarter to two fifths(Campbell & Graham 2006). A study across 181 countries identified four factors common to countries where maternal mortality ratios were found to be improving included decreases in the total fertility rate, increases in family income, improved education for women and the provision of a skilled birth attendant(Hogan et al. 2010).

1.4 Midwives are the primary skilled birth attendant

> *The lives of women and newborns can be saved through the universal provision of quality maternity care services, of which a 'skilled attendant' is a corner stone.* (WHO 2012)

The provision of a skilled health professional at birth is a key strategy for the reduction of maternal mortality (Campbell & Graham 2006; Carlough & McCall 2005; Hogan et al. 2010). The presence of a skilled attendant at every birth has become a key indicator of progress towards achieving Millennium Development Goal (MDG) 5 (UNICEF 2010).

Historically, the provision of a skilled professional at every birth has largely attributed to the early reductions in maternal death historically in Sweden and other parts of Europe (Van Lerberghe & De Brouwere 2000). Over the last 50 years care by a skilled birth attendant has been linked to major reductions in the MMR in Malaysia, Thailand, Sri Lanka and China (Pathmanathan et al. 2003), Egypt, Indonesia, Morocco and Togo(AbouZahr & Wardlaw 2001) along with 'modest' reductions in Brazil, Jamaica, Kuwait, Jordon, Oman and Panama (AbouZahr & Wardlaw 2001; Filippi et al. 2006; Graham, Bell & Bullough 2001; Koblinsky et al. 2003).

A skilled birth attendant is defined as:

> *An accredited health professional – such as a midwife, doctor or nurse – who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns(WHO, ICM & FIGO 2004, p. 2)*

Midwives are the optimal cost effective skilled birth attendant (Renfrew et al. 2014). However, midwives need to be located in 'the right place at the right time' and underpinned by appropriate policies, essential supplies including medicines, and operating under appropriate regulatory frameworks (AbouZahr 2003). In countries with multiple language and cultural groups, the work of the role of a midwife may be enhanced when they are from the same cultural background as the community in which they are working.

An essential parallel strategy to providing access to a professional midwife is one that ensures the midwives are placed in an enabling environment. Such an environment maximises the capacity of the midwife to provide quality care by ensuring each midwife is part of a team with peer support and is situated in an equipped health facility, with essential drugs and supplies, motivational support and supervision and access to referral services (Graham, Bell & Bullough 2001; Nyamtema, Urassa & van Roosemalan 2011). Cooperation and collaboration between specialist doctors and SBAs is another crucial aspect of the enabling environment (Graham, Bell & Bullough 2001).

While nurses and doctors may also be included under the umbrella of 'the skilled attendant', a midwife as defined by the International Confederation of Midwives (ICM) (ICM 2011b) is recognised as the optimal skilled attendant to provide the complete continuum of maternal and newborn health care apart from obstetric surgery. The provision of a competent midwife, otherwise described as the optimal 'skilled attendant' at every birth is estimated to reduce maternal mortality by 13 to 33% (Graham, Bell & Bullough 2001).

The ICM defines a midwife as:

> *A midwife is a person who has successfully completed a midwifery education programme that is recognised in the country where it is located and that is based on the ICM Essential Competencies for Basic Midwifery Practice and the framework of the Global Standards for Midwifery Education; who has acquired the requisite qualifications to be registered and/or legally licensed to practice midwifery and use the title 'midwife'; and who demonstrates competency in the practice of midwifery*(ICM 2011b).

To optimise the effectiveness of midwives at the primary health level necessitates a commitment to improving the work environment and links to higher level health facilities (Campbell & Graham 2006). Gains have been achieved by scaling up emergency obstetric care and providing referral pathways for midwives and other skilled attendants to access these facilities (Rosenfield, Maine & Freedman 2006). The enabling environment is one that ensures functioning health facilities, including improved supplies of equipment, drugs, clean water and an ambulance (AbouZahr 2003; Ahmed et al. 2012; Campbell & Graham 2006; Peters 2000).

Antenatal care, while not significantly shown to reduce maternal mortality on its own, does provide a window of opportunity for the midwife to develop relationships with women and enables many complications to be detected and managed (Bhutta et al. 2014). Familiarity with the local midwife may decrease fear and has been found to increase women seeking skilled care at the time of birth (Ergano et al. 2012). For these reasons, antenatal care continues to be promoted as an important aspect of health care for pregnant women (Campbell & Graham 2006). Importantly, the antenatal visit also provides opportunities for the detection and treatment of other conditions such as such

as HIV, malaria and anaemia (Bhutta et al. 2014; Campbell & Graham 2006). With many maternal deaths occurring in the first week following childbirth, and most in the first 24 hours, postnatal care is an essential part of any strategy to reduce maternal mortality (Campbell & Graham 2006).

1.5 Ethiopia: A brief country profile

Ethiopia is a vast land locked country of diverse geography and people. Situated in East Africa, Ethiopia is bordered by Eritrea, Djibouti and Somalia to its North and East, Kenya to the South, Sudan and South Sudan on its West. The land area is estimated to be 1.1 million square kilometres(NationMaster 2014) and the current population is approximately 92 million (WHO 2014c). The geography and climate of Ethiopia varies from semi-arid desert, temperate high altitude areas to sub-tropical lowlands. There are many rich and diverse cultures within Ethiopia with more than 80 language groups (Teklehaimanot 2012). The official language is Amharic and the two largest official religions are Ethiopian Orthodox Christianity and Islam.

Most Ethiopians (83.7%) live in rural areas (UNICEF 2010) with 39% living below the poverty line on less than $1.25 US a day (UNICEF 2010). Much of the population make a living as subsistence agriculturalists, leaving them vulnerable to natural disasters and famine. The national average life expectancy is 56 years (UNICEF 2010) and the most common causes of mortality are communicable diseases, such as malaria and tuberculosis (TB). In addition, an alarming number of women die from complications during pregnancy, labour, birth and the early postnatal period with an official figure for maternal mortality in Ethiopia of 420 per 100,000 live births(WHO 2014c). The majority of these deaths (85%) occur as a result of direct obstetric complications, haemorrhage, sepsis, unsafe abortions, high blood pressure and obstructed labour

(Achmed 2010). These data are consistent with international studies on maternal mortality in developing countries (AbouZahr 2003).

1.6 Maternal Mortality in Ethiopia:

Ethiopia has been successful in reducing its maternal mortality ratio from 500 to 420 per 100,000 live births over the last decade which ranks it 30thhighest MMR in the world (TheWorldBank 2014b; WHO 2014c). With an average annual decline in maternal deaths of 4.9% since 1990, Ethiopia is making progress, however this trajectory will have the country falling short of reaching their MDG 5 target (WHO et al. 2014). Ethiopian women also suffer high rates of maternal morbidity and there are estimated to be 9000 new cases of women suffering from obstetric fistula each year (UNFPA 2012b).

Table 1, page 27, presents a snap shot of the health status of Ethiopian women with comparison data from Australia as an example of a HIC.

Table 1: A comparison of the health status of woman in Ethiopia and Australia

Health indicator	Ethiopia	Australia	Source
Maternal Mortality Ratio: expressed per 100,000 (2009-2013)	420	6	(TheWorldBank 2014c)
Life time risk of maternal death	1:52	1:9000	(WHO et al. 2014)
Births attended by a skilled health personnel	10%	99.1%	(WHO 2014b, 2014c)
Births in a health institution %	10%	99%	(AIHW 2012; UNICEF 2014)
Antenatal coverage (at least 1 visit)	33.9%	97.1%	(WHO 2014b, 2014c)
Antenatal care (at least 4 visits)	19.1%	91.2%	(WHO 2014b, 2014c)
Contraceptive prevalence	28.6%	72.3%	(WHO 2014b, 2014c)
Total Fertility Rate	4.64	1.89	(WHO 2014b, 2014c)
The number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with current age-specific fertility rates (TheWorldBank 2014d)			
Female life expectancy (years)	65	84	(TheWorldBank 2014a)
Expected number of years of formal education	8	20	(Save the Children 2012b)

Maternal health in Ethiopia is compromised by economic, social, infrastructural, geographical and traditional factors(Gosh et al. 2012; Worku, Yalew & Afework 2013). Access to health care is challenged by Ethiopia's diverse geography, ranging from semi-

arid areas, rugged mountain ranges, and savannahs, to forested sub-tropical areas. There are permanent rivers as well as seasonal water ways. The combination of a lack of roads and bridges impedes or prevents access to health facilities. Cultural traditions, a lack of literacy, particularly for women and gender inequality, all contribute to the poor situation for women and more so for women in remote and rural areas (Mekonnen & Mekonnen 2002; Woldemicael & Tenkorang 2010; Worku, Yalew & Afework 2013).

Women from urban areas and those who have attended a primary school education are more likely to access antenatal care and give birth with assistance from a health professional than women from rural areas and those with little or no education(Mekonnen & Mekonnen 2002). Women who work outside the home and who have perceived higher levels of autonomy (such as decision making powers in the home and higher levels of education) are also more likely to access professional health care in pregnancy and childbirth(Woldemicael & Tenkorang 2010).

Severe shortages in human resource for health, particularly in remote and rural areas also contribute to prohibiting women from accessing professional maternal health care (Mekonnen & Mekonnen 2002).

1.7 A midwife shortage and maternal health in Ethiopia

Ethiopia suffers from a severe shortage of midwives(Fullerton et al. 2011). There are almost 7000 midwives registered in Ethiopia(UNFPA, ICM & WHO 2014) for more than 92 million people, which is below the WHO target of 1:5000 (midwife per population) (EMA 2013).

Most women in Ethiopia give birth at home with either a traditional birth attendant or in many cases, a relative (Shiferaw et al. 2013; Teferra, Alemu & Woldeyohannes 2012).

The Demographic and Health Survey found that as many as 57% of women were assisted during birth by a relative or other person, aside from the 28% of women being assisted by a Traditional birth attendant (CSA 2012). Only 10% of the population give birth with a skilled professional while that rate is reduced in rural areas to 6%(Khan et al. 2006; WHO 2014c). Many of the women who come to a health facility to give birth only do so when a complication has developed (Achmed 2010; Graham, Bell & Bullough 2001). Midwives in rural areas are caring for women with a number of complications including the five main causes of maternal death: haemorrhage; sepsis; unsafe abortion; high blood pressure; and obstructed labour (Achmed 2010). The skill set required to manage these complications is comprehensive and consistent with those recognised as the international competencies for midwifery (ICM 2010a)

1.8 The history of midwifery in Ethiopia

The daughter of the last Ethiopian Emperor, Haile Selassie I (who reigned from 1930 to the 1974), Princess (García-Moreno et al. 2005), became the first Ethiopian to be formally trained as a nurse. Princess Tsehai completed her training as a State Registered Children's Nurse, in the United Kingdom in Great Ormond Street Hospital while in exile from Ethiopia with her father from 1936 to 1942 (Gaym et al. 2008; Hamlin & Little 2001, p. 7; Mosley 1964). Following the end of the Italian occupation, the Princess returned to Ethiopia where she married a young warlord, Colonel Abiye. The Princess died following a miscarriage and haemorrhage during her first pregnancy (Hamlin & Little 2001, p. 7; Mosley 1964). The first teaching hospital to be built in Ethiopia was named after the Princess (Hamlin & Little 2001, p. 7). The Princess Tsehai Memorial Hospital was later to become the site for the first nursing and midwifery training in Addis Ababa (Hamlin & Little 2001, p. 57 & 129). Historical accounts and documents are

scarce on this topic. The first recorded formal education in midwifery for Ethiopia appears to have taken place in Eritrea in 1955; Eritrea was part of Ethiopia until it gained independence in 1991. Midwifery was taught as a 'post basic' nursing course in the Eritrean Asmara Nursing School, formerly the Itegue Menen School (Russon, Andemariam & Haile 2006).At that time there were three types of nurses' graduating; registered nurses, community nurses and midwife nurses (Russon, Andemariam & Haile 2006, p. 29). The distinction between these three cadres of health care worker is however not specified.

New Zealand Doctor, Reginald Hamlin and Australian Doctor, Catherine Hamlin, moved to Ethiopia in May 1959 by invitation from the trustees of the Princess Tsehai Hospital. The Hamlin's answered a vacancy announcement in the British journal, *The Lancet*, to establish a school of midwifery at the Princess Tsehai Hospital in the capital Addis Ababa (Hamlin & Little 2001, p. 49).

In order to establish the midwifery school, the Hamlin's enlisted the assistance of Margaret Myles (Hamlin & Little 2001, p. 129), a famous British midwife well known at that time for her contribution to midwifery education (Myles 1956, 1985). Miss Myles arrived in Ethiopia soon after the Hamlin's arrival. A midwifery curriculum was prepared by Miss Myles together with Dr Reginald Hamlin (Hamlin & Little 2001, p. 129). Experienced nurses were selected by the Hamlin's to be trained as midwives in an 18-month course. The first cohort of six midwives graduated circa 1961.

Following graduation, the new midwives sought recognition from the Ministry of Health by appealing for an increase in their salary in recognition of their extra training and responsibility. This action resulted in the closure of the fledgling school by the government, allegedly due to a lack of funds to pay these *specialised nurses* salaries. The

Ministry of Health argued that nurses were sufficient to provide maternal health care and that there was really no need to train midwives (Hamlin & Little 2001, p. 130).

In 1977, the Eritrean nursing and midwifery programmes were reviewed and a decision was made to educate only 'comprehensive nurses', whom it was believed could function in all roles, thus removing once again a distinct profession of midwifery from all health institutions (Russon, Andemariam & Haile 2006, p. 26).

During the course of their work as gynaecologists in the Princess Tsehai hospital, the Hamlin's became aware of the plight of a number of women living in destitute circumstances around the hospital. They discovered that these women were suffering from obstetric fistulae, which was considered 'incurable' by their medical peers at that time (Hamlin & Little 2001). Following a period of study and preparation, the Hamlin's began to perform corrective surgery for women with obstetric fistulae (Hamlin & Little 2001, pp. 77 - 85). In 1974 the Hamlin's opened a purpose built hospital, the Addis Ababa Fistula Hospital, dedicated to the repair of obstetric fistulae and the social support of women following repair (Hamlin & Little 2001).

It was not until 1985 that midwifery was taught again in Ethiopia in the Addis Ababa Midwifery School and in 1989 at the Asmara Midwifery School (Russon, Andemariam & Haile 2006, p. 26). During the 1990's a small number of schools opened offering a one year post-basic course in midwifery. Midwifery education at this time was thought to be of a relatively high standard(Gaym et al. 2008). A decline took place following this short period of good education and by 2007 the number of midwives register was less than 1200 and their quality was considered to be generally quite poor (Gaym et al. 2008). The Ethiopian office for the WHO, carried out an assessment of midwifery education

across Ethiopia in 2007 and concluded that midwifery education and particularly practical skill development was of an extremely poor quality (Gaym et al. 2008).

Despite the provision of a purpose built hospital in Addis Ababa, geography and lack of infrastructure prohibited many women with fistula from accessing the care they required. In 2004, Hamlin Fistula Ethiopia embarked on an ambitious challenge to expand its services by opening five provincial fistula hospitals in four regions of Ethiopia (Thomas 2004, p. 16). The regional centres made fistula repair more accessible to rural women and provided opportunities for the Hamlin team to travel into remote areas to raise awareness about antenatal care, fistula prevention through skilled attendance, and more accessible fistula repair. The proximity of the Outreach Fistula Centres to rural communities made the possibility to further the work of prevention of fistula injuries, more feasible. With a more focused view of fistula prevention, the Hamlin team were challenged by the lack of midwifery care in rural areas and discussed how the organisation may be able to play a part in improving maternal health services.

1.9 The Hamlin College of Midwives

The Hamlin College of Midwives opened in late 2007 as part of the Hamlin Fistula Ethiopia's prevention of obstetric fistula strategy (Hamlin Fistula Relief and Aid Fund 2007). An integrated deployment strategy was developed for the placement of midwife graduates into rural areas. The implementation of the model involved the Hamlin College assigning and supporting a minimum of 50 Hamlin graduate midwives in 25 partner government health centres in 5 regions of Ethiopia by 2014. See the curriculum outline for the Hamlin College in Appendix I.

The Hamlin College of Midwives aimed to have cohorts of 20 to 25 students. In the Ethiopian context this is considered a very small number of students. This number was

considered appropriate however for a number of reasons; 1. Smaller class sizes enabled educators to get to know, and better support students, both academically and pastorally. 2. As mentioned previously, in point 1.7, few women in the Ethiopian context attend health facilities for birth and other maternal health care, while large numbers of students, medical, nursing and health officers all clamber for clinical experience. The staff of the Hamlin College believed that they could better optimise opportunities to support students in attaining core competencies in the simulations setting and on clinical placement. Smaller groups afforded more 'hands on 'opportunities for each student and good student to preceptor ratios.

Thirdly, smaller cohorts also afforded an optimal environment for providing critical English language teaching and support. The very first cohort was made up of only 12 students, the second; 14 students, the third 18 students and then around 22 to 25 students thereafter.

1.10 Midwifery education and the 'direct entry pathway' in Sub Saharan Africa

The first *State of the Worlds Midwifery Report*(SoWMy)detailed the condition of the midwifery profession and overall maternal health of 58 countries experiencing the highest burden of maternal mortality (UNFPA & ICM 2011a). The report aimed to bring into the spotlight the role of the midwife and the development of the midwifery profession and its contribution to reducing maternal mortality, historically and currently. According to the first SoWMy report, most of the 58 participating countries, accounting for 58% of the world's births, were found to have not only the highest rates of maternal and newborn mortality but correspondingly small numbers of professional midwives(UNFPA & ICM 2011a). Moreover, the 58 countries experienced 91% of the

global burden of maternal mortality; 80% of stillbirths; and 82% of newborn mortality and yet contain only 17% of the world's skilled birth attendants (UNFPA & ICM 2011a, p. IV).

Overall there is a paucity of primary research literature regarding the 'direct entry midwifery' educational model, despite this model reported as being used by 70% of the world's midwifery programmes(UNFPA & ICM 2011a). Grey literature indicates that despite many countries having had a history of 'direct entry' or otherwise known as 'non–nurse midwives', the debate regarding the optimal model of education continues, and whether midwives are better educated having come from a nursing background as a prerequisite or through the direct entry model for HIC's (Tracy, Barclay & Brodie 2000) and for LIC in Africa (Fauveau, Sherratt & de Bernis 2008; Stover 2011).

Direct entry' midwifery programmes provide a platform for the delivery of a midwifery centred curriculum with a focus on essential midwifery knowledge and skills, Direct Entry midwifery programmes recognise midwifery as a standalone profession and endeavour to focus educational resources and attract candidates who have the right attitude, commitment and dedication (Schoon 2011). The first SoWMy report stated that there is evidence from many countries that the direct entry midwifery educational pathway is the 'most favoured educational method' and improves midwife retention (ICM 2011c). Retention of students in direct entry midwifery programmes have been found to improve compared with other pathways (Tracy, Barclay & Brodie 2000, p. 85). The debate over the best way to educate midwives is further fuelled by a dire human resource crisis with health professionals being required to perform multiple tasks rather than specialise(UNFPA, ICM & WHO 2014). This results in low competency levels

due to little time spent focusing on developing essential skills and poor clinical experience (Fauveau, Sherratt & de Bernis 2008; Ireland et al. 2007).

Despite having a direct entry midwifery programme in Ethiopia since 2006, midwifery education and the profession continue to be treated as a discipline of nursing. This has been identified as the root condition leading to poor curriculum development, a lack of appropriate academic staff, and poor teaching resources (Fullerton et al. 2011; Gaym et al. 2008).

More professional health workers are needed — but not simply more of the same(UNFPA, ICM & WHO 2014). Efforts to scale up health professional education must increase the quantity and relevance of the providers of the future if they are to meet population health needs(WHO 2011b).

As described above, periodically since the 1960's, there have been varied educational pathways for midwifery education in Ethiopia(Ali 2010). Presently Ethiopia has both direct entry and 'post basic'(following nursing) midwifery programmes(UNFPA 2012a; UNFPA & ICM 2011b). Multiple systems of entry and multiple pathways through midwifery can create a challenge for understanding 'common ground' in the midwifery profession (Fealy et al. 2009). This study will document the experiences of students, staff and graduates involved in a direct entry model of midwifery education in the Hamlin College of Midwives. Also as discussed earlier this is a relatively new pathway for midwifery education in Ethiopia. For midwives in Holland, Switzerland, Canada and New Zealand the 'direct' entry pathway has been an long term accepted pathway into midwifery(ICM 2011c). Midwives in other countries, for example, Brazil however find themselves fighting to bring back the direct entry pathway which had been eroded away over previous decades(Narchi, Cruz & Gonçalves 2013).

Fast track or shortened programmes such as diplomas(1-2 years) initiated to meet the need for urgent human resource shortages are not always seen as adequately providing the quality and skill needed to sustain improved maternal health outcomes(Ronsmans et al. 2001). Shortened training may be counter intuitive when poor skills and competency lead to increased injury, mismanagement and a loss of community confidence(Ronsmans et al. 2001). The resultant need for in-service 'up-scaling' in essential skills that should have been taught in the initial educational programme incurs extra costs and takes front line workers away from where they are needed (Ronsmans et al. 2001).

The recent *Lancet Series on Midwifery* has highlighted that midwifery is associated with more efficient use of resources and improved outcomes when provided by midwives who were educated, trained, licensed, and regulated, and were most effective when incorporated into the health system(Renfrew et al. 2014).

1.11 Midwifery education: theoretical knowledge and clinical competency

Effective professional midwifery practice requires that midwives undergo a rigorous and comprehensive educational programme with substantial time spent in the clinical hands-on setting. Existing programmes in Ethiopia give little emphasis on clinical skill development and clinical attachment with an experienced preceptor (Fullerton et al. 2011; Gaym et al. 2008). It has been shown that a deficiency in pre-service clinical education results in graduates with poor clinical competency and lacking confidence(Fullerton et al. 2011; Gaym et al. 2008).

In rural areas, newly graduated midwives are often assigned on their own into health centres and need to perform with a high level of autonomy; enabling and safe guarding birth as a mostly normal event while managing complications. Vigilance to identify any

deviation from the norm is necessary to provide safe basic emergency care and to facilitate timely referral for any woman with an emergency beyond the midwives' scope of practice. Midwifery curriculum needs to ensure that all graduates develop aptitude in midwifery competencies in accord with the International Confederation of Midwives and encompass all areas of best practice midwifery education. The curriculum should provide an appropriate balance between theoretical knowledge and practical skill development (ICM 2011a).

It is recognised that the involvement of experienced midwives in the development and implementation of the curriculum is important. The ICM Global Standards for Midwifery Education (2010) under section I. Organisation and Administration stipulates in point 4., That **'**The midwifery faculty is self-governing and responsible for developing and leading the policies and curriculum of the midwifery education programme'(ICM 2011a, p. 5)**.**Curriculum in Ethiopia however has been developed mostly by professionals without a midwifery background(Fullerton et al. 2011).

1.12 Midwifery educators

For optimal midwifery education the ICM recommends that 'the midwifery faculty includes predominantly midwives (teachers and clinical preceptors/clinical teachers) who work with experts from other disciplines as needed'(ICM 2011a, p. 5).Ironically, the higher education system in Ethiopia is under further strain as a result of the increase in midwifery programmes opening in recent years (Rayner & Ashcroft 2011). A shortage of qualified faculty staff has meant that the majority of instructors in the new universities are only qualified to bachelor level (Rayner & Ashcroft 2011).Many are new graduates, lacking in clinical and pedagogical experience and competency (Schoon & Motlolometsi 2012). Midwifery professionals in South Africa believe that if educators

had more involvement with service delivery, inappropriate training would be removed and there would be more synergy overall between educational programmes and the essential needs at the service delivery level (Schoon 2011). With the growing pressure for Ethiopia to increase their midwifery workforce there is a corresponding need to increase the numbers of experienced and appropriately trained midwife educators. For this to occur, high quality midwifery graduates need to be produced.

1.13 Selection of midwifery students

Demonstrating a willingness to become a midwife is seen as a priority in the selection of midwifery students(Fullerton et al. 2011). In Ethiopia, students are arbitrarily assigned to a particular faculty regardless of their personal preference, by the Ministry of Education(Rayner & Ashcroft 2011).

The Hamlin College of Midwives' candidate criterion includes the following;

1. Attainment of a recognised matriculation score (by the MOE)
2. Pass the HCM entrance examination and interview
3. To demonstrate that they have come from and lived most of their life in the selected rural area.
4. Demonstration of willingness to become a midwife and return to their area of origin to work with the MOH for 6 years post- graduation
5. 18 years of age and above
6. Physically fit for working as a midwife
7. Female.

The Hamlin College of Midwives interviews candidates and seeks to establish a candidate's willingness to become a midwife and their attitude to returning to work in

their area of origin to work. In this study, students and graduates were asked about how they came to enter the Hamlin College of Midwives as this is important to better understand their motivation to become a midwife.

1.14 Accreditation of higher education institutions for midwives

Of the 58 countries surveyed for the first 'State of The World's Midwifery' report, the majority of educational programmes for midwifery reported that they were accredited by some higher authority(UNFPA & ICM 2011b). In Ethiopia, the Higher Education Relevance and Quality Agency of Ethiopia (the national accreditation body) is only mandated to carryout accreditation on privately owned higher education institutions(Kahsay 2012) . The Ministry of Education has been accused of 'double standards' where private Higher Education Institutions come under scrutiny by Higher Education Relevance and Quality Agency of Ethiopia while there is no such assessment and accountability of Ethiopian public Higher Education Institutions (Rayner & Ashcroft 2011). A Quality accreditation process for Higher Education Institutions works towards ensuring that educational and institutional quality are being developed, delivered and maintained(ICM 2011a). The Hamlin College of Midwives is the only fully accredited bachelor of midwifery programme in Ethiopia(EFMOE 2014).

1.15 Midwifery regulation in Ethiopia:

There is a national registration process for midwives in Ethiopia. Successful graduate information and transcripts are transferred to the national body for registration or licensing. Health professional licensing (degree level and above) is carried out by the Health and Health Related Services and Products Regulation Agency (WHO 2014a).

Data collected by the Ethiopian Midwives association has found that only 68 per cent of practising midwives are licensed(UNFPA & EMA 2012, p. 20). Theoretically midwives are required to renew their licence every five years however there is no monitoring of this process and a process for re – licensing is also lacking (UNFPA & EMA 2012, p. 24).

A national accreditation agency; the Higher Education Relevancy and Quality Agency (HERQA) was established to oversee the regulation and accreditation of all private educational institutions. HERQA aims to ensure the 'accreditation of private academies and quality audits of education programmes for medicine nursing and midwifery are aligned with international standards' (UNFPA & EMA 2012, p. 20).Out of a total of 46 midwifery programmes, the Ethiopian midwives association has documented that there are 17 government Universities and only two private Colleges offering midwifery at the degree level (UNFPA & EMA 2012). Since the powers of the accreditation agency only extend to the accreditation of private institutions, in conclusion there are only 2 degree programmes that have been accredited to meet international standards. The Hamlin College achieved full accreditation in 2010 (MOE 2011) and its most recent re-accreditation in 2012

1.16 The structure of the Ethiopian Public Health System

Ethiopia has a three-tier health care structure.

Level one: The Woreda/district level includes a 'Primary Health Care Unit' (PHCU) which is comprised of;

A primary hospital (coverage of 60,000-100,000 people)

Health Centres (coverage of 1/15,000 – 25,000 populations)

Satellite Health Posts (1/3,000 – 5,000 population)

Level two: General hospitals covering a population of 1 – 1.5 million people; and

Level three: Includes Specialised Hospitals covering a population of 3.5 – 5 million people(FMOH 2010, p. 4)

The Hamlin College of Midwives' graduates are being deployed into rural Health Centres, at the Woreda or District level which is level one of the public health system. Ideally the midwives work in collaboration with community health workers known as Health Extension Workers (HEWs) who are at the Health Post level and the midwives can refer women with complications, beyond their scope of practise, to either a General Hospital (level two) or most often to a Specialised Hospital (level three).

1.17 Deployment and retention:

Motivation and retention of midwives in Ethiopia is an on-going challenge. The major de-motivating factors include a lack of access to further education, low salaries, a lack of supervision and poor opportunities for career development (UNFPA & EMA 2012, p. 24)Ethiopia faces a difficult challenge particularly in attracting and retaining the health professionals it does produce in the rural areas (Serneels et al. 2007a). Therefore, the Hamlin College aimed to attract prospective midwives from rural areas and then deploy them back to this setting. This study will explore the outcomes of such an aim.

1.18 How this study came about

My interest in this research came about as a result of my work in Ethiopia. This led to my recognition of the need for an investigation into the processes and outcomes of a unique midwifery education and deployment program that I was privileged to be part of.

In mid-2006 I was asked by the founder of the Addis Ababa Fistula Hospital to fulfil a long term dream of hers to develop and commence a midwifery education programme that would complement the work of the Hospital. I was not given any other directives

for how this programme was to be delivered or by which model of midwifery education I should follow.

I worked as a midwife in Egypt, primarily for asylum seekers (from Sudan, South Sudan, Somalia, Ethiopia and Eritrea) for 10 years prior to moving to Ethiopia. I was very aware of the transient nature of many non-Government organisations and felt it was important to develop a programme that was context appropriate, and long term. I immediately sought to recruit a national midwife and was blessed with accruing a small team of passionate national staff to work with.

I was involved as part of this team in developing the curriculum and designing the overall layout of the three year programme (which later expanded to four years). I was actively involved as an educator and Dean of the College with both theoretical and practical aspects of study and participated as a preceptor with students in the clinical areas. I was also involved in developing and carrying out the recruitment process and developing the rural deployment strategy. I learnt through experience that new approaches to any aspect of the programme, such as pedagogical styles or clinical requirements, were best kneaded and shaped over the 'workshop' table. Through consultation, national staff were able to share important cultural perspectives that would lead to some adaptation and ownership of a new approach, increasing its successful application into the programme.

I recognised that the story of this program needed to be told. I became aware of the important need for research in order to understand how this new approach to midwifery education was experienced from the perspective of the students and staff. Moreover it was necessary to understand the ramifications of this education not only to new graduates practising in their communities but also to the health of women. I

recognise however, that my close involvement in the establishment and implementation of this program might also be seen as a conflict of interest. This issue and my reflections as the researcher during the course of this study will be further explored in the thesis.

1.19 Justification for the study

The study was undertaken to inform educators, policy makers and donors about this strategy of developing midwifery education and deployment. This study aims to inform midwife leaders and educators, policy makers, and political figures who share a common desire to improve maternal and newborn outcomes in rural areas, in this case, in Ethiopia. The Ethiopian government continues to strive for improved maternal health care by providing skilled attendance during labour and birth in a context of a long term struggle to develop a consistent, quality programme for midwifery education. With the rapid expansion of communication possibilities coupled with a need for sustainable development solutions and the ever daily tragedy of maternal mortality and morbidity in Ethiopia it is important for organisations to share their experiences. This is the story of an innovative model of midwifery education and deployment that has been designed for Ethiopia and particularly for rural Ethiopia, where most women are living and sadly dying. The story of the Hamlin College and particularly of the students and midwife graduates can inform interested parties and assist to improve efforts to enhance maternal health care through improved education and deployment of midwives. The researcher explores areas of critical self- reflection at the end of chapter 3 in point 3.2.1

1.20 The study aims

The aims of this study were to:

- Document the experiences of students, staff and graduates in a 'direct entry' Bachelor in midwifery programme who were recruited from rural areas with the aim to deploy them back into their areas of origin.
- Explore the preliminary maternal health outcomes in four primary health centres following the deployment of two Hamlin College midwife graduates into each health centre, in their areas of origin

1.21 The Research Questions

The study aimed to address the following research questions:

1. What are the experiences of students, staff and graduates in a 'direct entry' Bachelor in midwifery programme with an integrated rural deployment strategy in Ethiopia?

2. What are the preliminary maternal health outcomes in four primary health centres following the deployment of two Hamlin College midwife graduates into each of the health centres, in their areas of origin?

2 LITERATURE REVIEW

In the previous chapter, the need to scale up midwifery in Ethiopia was presented as a strategy to decrease the number of preventable maternal and neonatal deaths. The Hamlin College of Midwives is one model that has been undertaken to address this important strategy. This research seeks to explore student, staff and graduate perspectives from the Hamlin College of Midwives model. A literature review was first undertaken to synthesise the current evidence with regard to midwifery education and deployment in Africa. This review of the literature sought to answer three questions:

1. What are the models of 'best practice' midwifery education in Sub Saharan Africa?

2. What are the experiences of students, graduates and faculty involved in midwifery education and, in particular, 'direct entry' midwifery programmes in Sub Saharan Africa?

3. What evidence is available for improving the deployment and retention of midwives in rural areas in Sub Saharan Africa?

A review of primary research described in peer reviewed papers in English was undertaken between 2008 and 2014. The literature review was conducted using the following databases; CINAHL, Science Direct, MEDLINE, PubMed and Google scholar. Manual searches were also conducted from reference lists of appropriate literature.

The Key words for these searches included; 'direct-entry midwifery in Ethiopia/Africa, 'midwifery education in Ethiopia/Africa', 'midwifery curriculum in Ethiopia/Africa', 'maternal health in Ethiopia', 'midwife attrition', 'midwife retention', 'midwifery in rural areas', 'rural deployment', 'midwives as skilled birth attendants', 'the enabling

environment', 'preceptorship and midwifery in Africa' and 'safe motherhood and midwifery'.

There are a range of cadres involved in providing maternal health care at various levels in the community and within health facilities comprising of those that fulfil the international definition of a 'skilled birth attendant'(WHO, ICM & FIGO 2004) including midwives and doctors and nurses with midwifery skills(Adegoke, Utz, et al. 2012)and trained personnel such as assistant midwives, trained traditional birth attendants and Community Health Workers (Tran et al. 2014), known as Health Extension workers in Ethiopia (Medhanyie et al. 2012). A study of nine Sub-Saharan countries (not including Ethiopia) found that there were actually more than twenty different cadres reportedly working as 'skilled birth attendants' with a wide variation in educational levels, scope of practice and competency (Adegoke, Utz, et al. 2012). Many Sub-Saharan countries have a number of cadres under the title of 'midwife'; Ghana for example has five cadres which include the word midwife in their title and which range in training length from 2 to 4 years (Adegoke et al. 2012). For the purpose of this review, literature that referred to skilled birth attendants in general and midwives in particular was included but not papers where traditional birth attendants, auxiliary midwives or nurse midwives or other cadres were the focus.

Literature concerning midwifery education and deployment in Sub-Saharan Africa and other low income and lower-middle income countries (LMIC) were examined with a particular focus on areas including; student recruitment into midwifery programmes, models of midwifery education including clinical skills development and competency and the role of the clinical preceptor as well as attraction and retention of midwives in rural and remote areas. In cases where little or no literature could be located pertaining

to LMIC, research from in high income countries (HIC) has been included and opportunities for possible transfer to LIC contexts discussed.

Although the focus of this study was on midwives and nurse-midwives, a scoping exercise revealed a paucity of literature that focused on these cadres. In these instances, literature concerning other health professionals particularly with regards to motivation, attraction and retention in rural areas was considered in order to offer insights that may be transferrable to midwifery contexts.

The literature review inclusion and exclusion criterion is outlined in Table 2:2 below. This table was developed to provide a structured and standardised method for assessing which primary research literature was appropriate to be included in this study.

Table 2: Literature review inclusion and exclusion criteria

Inclusion	Exclusion
• Direct Entry and other Midwifery education models in Sub Saharan Africa • Direct Entry midwifery in other LMIC • Midwifery student clinical skill development - the role of the preceptor or clinical facilitator • The selection and recruitment of midwives into educational programmes • Retention of midwives and nurses in rural Africa • The provision of an enabling work environment and support for rural midwives and nurses • Supervision of newly graduated midwives and nurses in rural areas	• Training programmes for other cadres engaged in maternal and reproductive health i.e. TBAs, doctors, Auxiliary nurses doing reproductive health work. • Literature on the performance of specific midwifery skills • Literature on in-service training programmes unless they relate to the retention of midwives • Opinion, Editorial, Literature reviews, grey literature (with one exception – a WHO Situational analysis of midwifery education)

The search rendered 36 papers that provided insight into the various areas of interest. This literature is discussed below under the key areas of midwifery education and the working environment for midwives in Sub Saharan Africa.

2.1 Midwifery education and curriculum development

A thorough search of the literature yielded very few research articles that focused on 'direct entry' midwifery programmes in Africa and low-middle income settings globally despite this model reportedly underpinning 70% of the world's midwifery programmes (Manafa et al. 2009; UNFPA 2011).

In Nigeria, direct entry midwifery is a three year course while post–nursing midwifery education is given over an 18 month period (Abimbola et al. 2012). Fullerton suggests that the various educational and training pathways to midwifery are reflective of a view of midwifery as a traditional occupation, as well as an emerging profession (Fullerton et al. 2011). The variety of pathways to midwifery including technical training, diploma, Bachelor and Masters' level also demonstrates a lack of consensus of an optimal model for midwifery education and creates inconsistencies with regards to defining roles and levels of assumed knowledge, skills and competency for the midwifery profession (Cragin et al. 2007).

The few studies that were conducted in Africa and one in Mexico evaluating the ability of educational pathways to prepare midwives to meet the ICM core competencies, found that midwifery programmes which were 'direct entry' demonstrated a stronger and more focused midwifery learning programme –thus meeting more of the ICM standards and core competencies, than programmes that integrated midwifery into a nursing programme (Adegoke, Mani, et al. 2012; Cragin et al. 2007). In Mexico, an evaluation of differing midwifery programmes also highlighted the professional/academic and

philosophical tension between a nursing based midwifery programme and a Direct Entry midwifery programme(Cragin et al. 2007). The 'Obstetric Nursing School' failed to provide documentation evidence of the inclusion of almost 50% of essential midwifery knowledge and skills while the Direct Entry Programme was found to incorporate 83% of the internationally accepted essential midwifery competencies(Cragin et al. 2007).

Weaknesses in the quality of midwifery educational programmes have been identified in a small number of African studies including a lack of curricula standardisation within a given country and in relation to international core competencies (Adegoke et al. 2012 ; Fullerton et al. 2011). The lack of focus on essential midwifery knowledge and skills at the curricula level is compounded by poor coordination between what educators are delivering in the educational setting and what is actually needed in the work place (Adegoke et al. ; Fullerton et al. 2011).

In Ghana and Malawi the quality of midwifery education is seen to be of a higher standard and relevance due in part to the development of curriculum being overseen by the Nurses and Midwives Council(Fullerton et al. 2011). In the case of the Direct Entry midwifery programme in Mexico, the curriculum was modelled on the Midwives Association of North America and embraced their core competencies (Cragin et al. 2007). Quality, relevance and professional autonomy however are seen to be compromised in the case of Ethiopia where midwives have played a very small role in curriculum development (Fullerton et al. 2011; Gaym et al. 2008). The lack of input from midwifery professionals and academics has led to a disproportionate amount of hours given over to non-midwifery courses. For example, two major limitations that were identified in the existing Ethiopian midwifery curriculum was the very short period of time allocated to practical skill development and a disproportionally large

amount of time allocated to nursing, and what are known as 'common courses', such as civics and entrepreneurial studies (Gaym et al. 2008). Despite having a direct entry midwifery programme since 2006 in Ethiopia, midwifery education and the midwifery profession continue to be treated as a discipline of nursing and this has been identified as a root condition leading to poor curriculum development, a lack of appropriate academic staff, and poor teaching resources (Gaym et al. 2008).

Small class size was identified as a positive for providing opportunities for increased 'hands–on' experience and skill development, however small scale programmes did not address the increasing demands for more midwives(Cragin et al. 2007). The need for programmes that promoted critical thinking and problem solving as well as a multidisciplinary co-management approaches to emergency care and referral were also lacking in midwifery curriculum in Africa and Mexico (Cragin et al. 2007; Fullerton et al. 2011). The Direct Entry programme in Mexico was found to include aspects of teamwork and team building between new and older student groups as well students with professional midwives fostered the development of interpersonal skills and relationships beneficial to professional midwifery practise(Cragin et al. 2007).

While there was no one study that researched the merits of technical verses degree level models of midwifery education, one Kenyan paper was found which studied the factors influencing the use of evidence based practice among nurses in the Kenyatta National Hospital. This study found that nurses with an educational background at the Bachelor or Masters' level were more able and more likely to access, implement and conduct their work using evidence based practices (Barako et al. 2012).

2.2 Recruitment of student midwives

The recruitment of health science students from rural areas in Africa has been found to result in better deployment outcomes to those areas (Serneels et al. 2007b). Rurally recruited nurses and doctors have been found to return to rural locations for smaller salary increments than those recruited from urban areas (Serneels et al. 2007b). Moreover, in Ethiopia permanently living in the capital city, was found to significantly decrease willingness to work in a rural area (Serneels et al. 2007b).

Completion of secondary school was most commonly required for entry into midwifery programmes in Ghana, Malawi and Ethiopia (Fullerton et al. 2011) as well as Nigeria (Abimbola et al. 2012). The Direct Entry programme in Mexico however only required a Grade 9 completion to join its course which falls well short of international recommendations(Cragin et al. 2007). As part of the process of recruitment of potential students into midwifery programmes, it is recommend that candidates be interviewed to determine their level of interest in the profession (ICM 2010b). In Ghana and Malawi, potential students of midwifery are required to demonstrate high test scores in an entry examination and demonstrate an expression of interest as part of their application process (Fullerton et al. 2011). In Ethiopia however, the Ethiopian Federal Ministry of Education (EFMOE) makes the decision about which university course a particular student will be assigned to (Fullerton et al. 2011). In Ethiopia, students are assigned to study midwifery by the EFMOE rather than through personal interest(Rayner & Ashcroft 2011). This has contributed to a loss of confidence, skill quality, ethical practice and respect for the profession (Dennis-Antwi2011) as well as reducing student motivation and professional quality (Fullerton et al. 2011) .

The uptake by students offered a place in midwifery programmes in Ethiopia, is further challenged as a result of midwifery being judged as an undesirable profession (Fullerton et al. 2011; Gaym et al. 2008). This negativity towards the midwifery profession is compounded in Ethiopia by midwifery programmes receiving candidates with the lowest matriculation scores among health courses (Fullerton et al. 2011; Gaym et al. 2008). Midwifery may therefore be seen as the 'last chance' to attain a tertiary education when a student has not managed to enter any other health faculty, further fuelling its poor status in the health field.

The lowering of required matriculation scores is also part of an affirmative action strategy of the Ethiopian Ministry of Education to increase the number of women entering university(Gaym et al. 2008).Despite the lowering of matriculation scores some Regional Health Bureaus in Ethiopia continue to struggle to find enough women who are able to enter midwifery educational programmes (Gaym et al. 2008, p. 78).

2.3 Midwifery educators and preceptors and clinical competency

There is a shortage of qualified and experienced midwifery educators, tutors and preceptors in African midwifery programmes, which compromises the quality, scope and preparedness of midwife graduates (Fullerton et al. 2011). Historically Ethiopia has not had a commitment to educating midwives (see section 1.8). This chronic lack of commitment to building up the midwifery profession, resulting in a lack of leadership was further compromised by losses of professionals since the 1974 revolution, the 17 years of the 'Derg', communist regime as well as economic migration in more recent years(Fransen & Kuschminder 2009). Much of the literature concerning health worker migration from Ethiopia focuses on the migration of medical doctors. When studies do look health professionals other than medical doctors, midwives are considered under

nursing professionals, making it difficult to appreciate the extent midwives specifically are migrating or to where. The WHO reported in 2002, that 17% of nurses and 30% of doctors left the Ethiopia (WHO 2014a).

In Ethiopia and Ghana, midwife educators are selected and assigned to Higher Education Institutions (HEI) by the Ministry of Education from the pool of newly graduated midwifery and or nursing cohorts (Fullerton et al. 2011; Gaym et al. 2008). The educators have not fulfilled any extra preparation in pedagogy, and may not be qualified as a midwife (nurse graduates). Furthermore, those 'educators' who are midwives and appointed to the midwifery faculty directly from a graduating cohort lack clinical experience and competency as well as qualifications or expertise in education (Fullerton et al. 2011). In the case of Malawi, nurses who have a teaching qualification are often assigned to midwifery programmes. While it is encouraging that they have some extra training in teaching it is counterproductive as they most often lack competency as a midwife (Fullerton et al. 2011).

Gaps in competency have been found in several Sub-Saharan and other LMIC countries, between what have been internationally accepted as evidence based competencies and actual knowledge and capability (Harvey et al. 2004; Harvey et al. 2007). A lack of skill and knowledge in what would be considered as essential midwifery competencies such as the use of the partograph and the management of the third stage of labour, were found to exist in professional midwives and were traced back to omissions in undergraduate curricula (Harvey et al. 2004; Harvey et al. 2007).

Opportunities for midwifery students to develop skills in a simulation environment within the Higher Education Institutions and the clinical setting were found to be a major challenge in Ethiopia (Fullerton et al. 2011; Gaym et al. 2008). Competing for

clinical sites with other health care cadres, large numbers of students per preceptor, and poor attendance and performance of clinical preceptors were all given as reasons for poor clinical experience during midwifery education (Fullerton et al. 2011; Gaym et al. 2008).

In many programs, midwifery students express a lack of confidence as they had not been given enough opportunity to practice specific procedures in poorly equipped skills labs prior to 'student attachment' to the clinical setting (Gaym et al. 2008). The experience in Mexico with regard to clinical skill development between the two models of midwifery education, demonstrated a contrasting focus in level of accountability and optimal competency leading to graduation. The 'Obstetric Nursing School' was unable to specify whether students were given opportunities to acquire essential midwifery skills as defined by the ICM. Through their investigation the researchers found that only 50 of the 250 students experienced adequate levels of supervised clinical exposure that would enable autonomous professional practice upon graduation. The Direct Entry programme was found to engage students in clinical attachment in an exclusively obstetric hospital which provided opportunity each year for students to incrementally develop their skills and experience. There was some question however due to a lack of documentation, about the extent of both programmes in providing enough opportunity to develop skills in basic emergency obstetric care(Cragin et al. 2007).A lack of documentation detailing clinical skill requirements and individual achievement for the Obstetric Nursing School is a concern (Cragin et al. 2007) and opens itself up for questions around the importance it places on preparing 'skilled birth attendants' to safely meet the demands of maternal health work in the country.

Hands–on experience in a supportive environment where there is an encouraging preceptor-student relationship, enhances the learning experience and morale of student midwives (Gilmour et al. 2013). In four African countries, including Ethiopia, the role of the midwife preceptor was found to have decreased in quality in recent years, along with a decrease in the quality of the profession overall (Dennis-Antwi 2011). Preceptors perceived that poor remuneration illustrated a lack of value for preceptorship and the midwifery profession in general(Dennis-Antwi 2011).A number of participants (preceptors and students) believed that some of their peers were lacking even the most basic skills (Dennis-Antwi 2011).

In Ethiopia, where school graduates do not select their study programme but are assigned to a course by the government, students were found to have little motivation to develop their skills resulting in a decrease in morale and enthusiasm (Dennis-Antwi 2011). The role of the preceptor was frustrated in settings where supplies and equipment were absent and further complicated by poor student to preceptor ratios (Dennis-Antwi 2011). A lack of preceptor training, preparation or guidelines in Ethiopia was also found to reduce the effectiveness and quality of midwifery preceptorship and education (Fullerton et al. 2011). A lack of experience in the clinical area was found to result in preceptors being reluctant to perform certain skills and denying students opportunities to practice at certain levels (Fullerton et al. 2011).

The role of the midwife preceptor has been found to have a strong influence on a student's development, confidence and clinical experience (Gilmour et al. 2013; Licqurish & Seibold 2008). Confidence as a midwifery student in the clinical setting could be influenced in a negative or positive way depending on the level of enthusiasm and encouragement of the midwife preceptor (Gilmour et al. 2013; Licqurish & Seibold

2008). ‘A helpful midwife preceptor’ was one who facilitated educational opportunities for the students, shared their knowledge and skills, gave feedback, encouraged reflection and supported the midwife student even when they had made a ‘mistake’(Licqurish & Seibold 2008). These midwives appeared to be excited to have students, worked ‘with’ students, providing support and facilitating opportunities that developed skills, increased experience and were perceived by students as ‘good’ midwives(Gilmour et al. 2013). In contrast, midwife preceptors who were perceived to not ‘like’ students or to be ‘against’ students were considered ‘bad’ midwives(Gilmour et al. 2013). It was very important to students that the midwife preceptor facilitated the linkage between theoretical knowledge and practice(Licqurish & Seibold 2008). Conversely, the ‘unhelpful preceptor’ was one who had poor communication skills , lacked consistency, clinical skills and was not motivated in their work (Licqurish & Seibold 2008). Students also perceived that those midwives who were poor in clinical preceptorship were also less woman centred in their care(Gilmour et al. 2013). The interaction and attitudes of staff towards students on clinical placement, in terms of being prepared, remembering their names and providing orientation, assisted students to feel welcomed, increased confidence and made them feel valued(Gilmour et al. 2013). Importantly, midwifery preceptors should be up to date and aligned with the best practice standards when working with midwifery students. Students found it discouraging when there are gaps between what they are taught in the university, which they believe to be the ‘gold star’ in clinical practice (Armstrong 2010, p. 118) with what they witness and experience in the clinical setting. Students were frustrated and de-motivated when they were discouraged from implementing ‘evidence based practises’ under the dominance of ‘traditional ways’ or specific facility policies(Armstrong 2010).

2.4 Collaboration and midwifery education in Africa

Various collaborative approaches to strengthen the midwifery workforce are evident across Africa (Dawson et al. 2014; Lavender et al. 2009; Uys & Middleton 2011). In response to the short supply of midwifery educators' collaborative approaches between midwifery programmes, educators and leaders are developing as a way of improving the capacity of midwifery education in Africa (Lavender et al. 2009). Collaboration between international and cross continental midwifery leaders and educators was viewed as a very positive step in scaling up and improving the capacity of African midwifery educational programmes to deliver better quality midwifery programmes and curriculum (Lavender et al. 2009). Participants in the collaborative workshops felt that the sharing of knowledge and ideas with peers from several countries and from different professions had a positive impact on them individually and would also have an impact on midwifery education within their own setting (Lavender et al. 2009). As an example, the50 yearlong Cork – Omdurman partnership in Sudan involves the provision of equipment and medical supplies as well multidisciplinary personnel including midwives and doctors to increase capacity by working alongside national staff as well as through training (Carlson et al. 2011). Collaboration can also assist in strengthening regulatory bodies and professional associations(McCarthy & Riley 2012).

2.5 Deployment, motivation and retention of midwives in rural areas of Africa

With a strategic imperative for increased skilled attendance in pregnancy and birth, there is a corresponding urgency to address workforce shortages for countries with lingering poor health indicators (Abimbola et al. 2012; Kinfu et al. 2009). Geographical imbalances exist in Ethiopia and many other countries with most of the health

workforce residing in the cities while the majority of the population reside in the rural and remote areas (Michael et al. 2010). Many countries, and in particular African countries, struggle to meet their health workforce needs in rural and remote areas while the bulk of their health workers are concentrated in urban areas (Abimbola et al. 2012; Rockers et al. 2012; Serneels et al. 2010). Each health worker, including every midwife is a precious resource and where there are real increases in the numbers of graduate health professionals, such as in Ethiopia, the next challenge is deploying and retaining the health workforce in rural areas where most of the population live (Serneels et al. 2010).

There is increasing amounts of primary research examining the issues surrounding deployment and retention of health workers in rural areas of Sub Saharan Africa including Ethiopia. Motivation and willingness of health workers to stay in a rural area can be increased through non-financial and financial incentives and often need to be delivered as a package (Mangham & Hanson 2008; Serneels et al. 2007b; Zurn et al. 2010) with subtle context and cadre specific differences needing to be identified and addressed(Blaauw et al. 2010; Serneels et al. 2010), these will be further explored below.

2.5.1 Professional supervision in improving retention and motivation in rural areas

Health workers need to be supported in a physical, personal and psychological way (Mathauer & Imhoff 2006) requiring a stronger commitment to supportive supervision (Adzei & Atinga 2012) that includes providing education and career opportunities in an equitable way (Mathauer & Imhoff 2006; Michael et al. 2010). Rural staff become discouraged when they perceive inequitable distribution of promotion, education and

mentoring between themselves and their urban peers(Manafa et al. 2009). Staff were also demotivated when appraisals were either not provided or not held in confidence (Prytherch et al. 2012). Rural health workers reported feeling discouraged by visiting senior staff who were disconnected to clinical practice in rural settings, and when supervision was seen to be judgemental(Prytherch et al. 2012).

In many countries, this requires a cultural shift on an individual and intuitional level (Mathauer & Imhoff 2006). Working with senior staff who demonstrate good quality management and leadership styles was valued by staff and seen to motivate and retain health workers in rural areas(Adzei & Atinga 2012).The opportunity to be supported in further education such as post-graduate studies was found to be a motivating factor for some health workers to stay in a remote area working in the public system(Manafa et al. 2009).

2.5.2 'Bonded' service programmes

Many countries around the world have developed compulsory service programmes following tertiary education including many African nations, as well as Canada, India and Japan (Frehywot et al. 2010). The rural service schemes require some graduates to spend some years of 'service' in a rural area in exchange for their government sponsored education (Zurn et al. 2010). Bonding health professionals to rural areas alone does not guarantee retention of staff (Frehywot et al. 2010).where conditions are considered inadequate, such as a lack of staffing, remuneration, housing, schooling for children, equipment and supplies, the imposition of a bonded service period may contribute to some health workers leaving the profession altogether(Prytherch et al. 2012).

The efficacy of 'bonding' professionals for periods of service in rural areas following graduation has been found to improve with the addition of other motivating initiatives and incentives (Mullei et al. 2010; Zurn et al. 2010). Providing clear information prior to deployment , detailing the job location, the length of service period, facility type and conditions were seen as positive motivators for health staff being sent to a rural area (Mullei et al. 2010; Zurn et al. 2010). Health workers were willing to work in a rural area for a time, but felt less motivated when they do not receive a clear and binding contract. Health workers were frustrated in contexts where the end of the 'service' time in a rural area was not certain and could be extended without consultation (Zurn et al. 2010).

Other factors which improved deployment outcomes in Senegal included a provision for workers to apply for certain areas of preference, assistance with housing, improved salaries and hardship allowances (Zurn et al. 2010). Improved retention outcomes in this study require further review, considering the length of time required for 'service' was only 12 months (Zurn et al. 2010). In Tanzania health workers expressed demotivating factors such as poor salaries, a lack of essential supplies and little respect for their work, as reasons for leaving their profession. Motivation for their work came when they had a clear understanding of their role, such as a job description, a sense that they were making a difference and good staffing levels to support their work (Prytherch et al 2012). Further studies are needed of the impact of contracts on longer periods of rural service.

2.5.3 Financial incentives to attract and retain midwives in rural areas

Financial incentives may take several different forms as a motivator for rural service including a higher baseline salary, salary supplements hardship allowances, rewards or

bonuses given in recognition of service years and or performance based(Adzei & Atinga 2012). High remuneration may be seen to compensate some rural health workers for the losses they incur. It is more difficult to supplement their income through private practice (Adzei & Atinga 2012; Mangham & Hanson 2008). Financial incentives were seen as a vital motivating factor contributing to the retention of staff in rural areas of Benin where the very definition of the word 'motivation' was found to be bound up with financial incentives in the work place (Mathauer & Imhoff 2006). Financial incentives in various forms were the strongest motivating factors for health workers, including nurses and midwives in Ghana to continue to work in a rural area (Adzei & Atinga 2012). Financial incentives contributed to improving the retention of midwives in rural areas of Nigeria as part of a wider package of incentives including accommodation, kits of essential supplies and drugs, an ambulance and linkage with a referral hospital (Abimbola et al. 2012).

The impact of financial incentives on motivating, attracting and retaining nurses and midwives in rural areas has not been found to be of equal importance in every context (Mangham & Hanson 2008). In Malawi, financial incentives were third in line when considering work location and were preceded by strategies that 'rewarded' rural service with opportunities to do further training or education as well as access to suitable housing (Mangham & Hanson 2008). How attractive a motivator a given financial package is, is dependent on the context and the demographics of the population that is being offered the package (Mullei et al. 2010; Serneels et al. 2010). For example, when given choices of certain levels of financial incentives and other non-financial incentives, the financial incentives were found to be three times more attractive to Ugandan nursing students than health facility infrastructure and

equipment (Rockers et al. 2012). Nursing students in Kenya did not feel that the financial increments offered to health staff in rural areas were enough and consequently did not find them motivational (Mullei et al. 2010). Students or health professional from wealthy backgrounds will often require higher salary packages to be an effective incentive to work in a rural area (Serneels et al. 2010).

2.5.4 The enabling environment to retain midwives in rural areas

Midwife engagement, motivation and a sense of job satisfaction were found to improve when midwives possess the requisite skills to manage all that is required to fulfil their 'scope of practice' (Bakibinga, Forbech Vinje & Mittelmark 2012). These were found to be related to working in an enabling environment where facilities were of a high quality, including adequate supplies and equipment(Adzei & Atinga 2012), drugs, appropriate staffing levels, reasonable working hours (Bakibinga, Forbech Vinje & Mittelmark 2012; Mathauer & Imhoff 2006; Rockers et al. 2012) and supportive management(Rockers et al. 2012). For example, when students in Malawi were asked to describe their working environment in one study, 90% described their workplace as lacking resources, while 85% described their workload as 'heavy ' indicating inadequate staffing levels(Mangham & Hanson 2008). Poor staffing levels, particularly in rural areas, compounded by inadequate facilities and a lack of supplies were perceived to contribute to increased stress and poor performance, both of which were identified as demotivating for rurally deployed health professionals (Manafa et al. 2009; Mullei et al. 2010). Poor staffing levels in rural areas was also found to staff being asked to perform tasks which were not thought to be within their scope of practice or experience, leading to increased stress levels and risk for staff and patients (Manafa et al. 2009). Some health care workers felt discouraged when poor levels of staffing lead to working with

other cadres who were not perceived to have been trained as well as themselves, with quality and safety being seen to be compromised (Prytherch et al. 2012). Lower staffing levels however were also seen as a positive in some rural settings, due to the potential it afforded for more autonomy (as mentioned above) and clearer division of duties (Mullei et al. 2010). Another example was from rural Nigeria where deploying midwives in teams of four was part of an incentive package to address issues surrounding staffing shortages and the need for peer support to improve retention of midwives (Abimbola et al. 2012). The provision of housing was often seen as an attractive incentive to work in a rural area, more than financial bonuses in some cases (Mangham & Hanson 2008) and less of an incentive than finances in others (Rockers et al. 2012).

2.5.5 A 'sense of calling' to serve others in rural areas

Several studies identified that many health workers including nurses and midwives felt a strong personal calling to the health profession and to working in a rural area (Bakibinga, Forbech Vinje & Mittelmark 2012; Manafa et al. 2009; Serneels et al. 2007b). Health workers working in rural and resource poor areas were perceived to have a strong personal ethos and reported feeling a sense that they were called to help others and to serve their community(Mathauer & Imhoff 2006; Prytherch et al. 2012). For many health workers this is what motivated them to enter the profession(Prytherch et al. 2012).

An affiliation with a religious organisation such as a bonding agreement with the Adventist Church, being trained in a Catholic College or working in a Catholic Clinic may have a positive effect on health worker motivation in rural areas (Serneels et al. 2007b). Furthermore, being a woman and having attended an NGO school were also factors that improved a person's motivation to work in a rural area(Serneels et al. 2007b).

2.5.6 Rural practice and professional autonomy and experience

Some health workers felt motivated to stay in rural areas because it enabled more autonomy and potentiated a broader scope of practice. Managing women and babies who were complicated and having a heavy workload provided rural health workers opportunity to more rapidly increase their experience and expertise in a much shorter time than their city colleagues(Manafa et al. 2009; Mullei et al. 2010). Working in the city was considered inferior to working in a rural area for nurses in Malawi (Mangham & Hanson 2008).

Health workers feel more motivated when they perceive that the leadership is taking notice of the work they are doing (Michael et al. 2010), participate in their work (Mathauer & Imhoff 2006) and provide feedback (Mathauer & Imhoff 2006; Michael et al. 2010). When health workers feel valued and recognised, self-efficacy is improved (Bakibinga, Forbech Vinje & Mittelmark 2012; Mathauer & Imhoff 2006). Greater autonomy and respect were also qualities sought after by health staff in remote areas (Mathauer & Imhoff 2006; Michael et al. 2010).

2.5.7 Non-Financial incentives and support for working in rural areas

Motivational factors however cannot be completely generalised as some strategies are context and country specific; nurses in Thailand, for example, were not motivated to work in a rural area by the provision of a house, but this was found to be a strong motivating factor for nurses in Kenya and South Africa (Blaauw et al. 2010). Other motivating factors varied across the countries, most appealing to Kenyan and South African nurses were financial and training incentives, In Thailand, improved insurance packages were more effective (Blaauw et al. 2010). Incentives may hold more or less potential depending on the target recipients even within the same country, in Kenya, the

provision of housing was more of a motivator to work in a rural area post-graduation for pre service nursing students, than 'up grading' students (Mullei et al. 2010).

Several studies recommended that retention of rurally deployed health workers would be improved if local people were identified to be trained and were willing to return to their own areas to work as midwives (Abimbola et al. 2012; Lori, Rominski, Gyakobo, et al. 2012). Coming from a rural area was the only statistically significant factor for health workers to return to a rural area to work in Kenya, Thailand and South Africa (Blaauw et al. 2010)and less significant for nursing students in Ethiopia (Serneels et al. 2007b). Although not statistically significant, this was also the case in Malawi where rural background students had a higher preference for a rural work place with the converse also true in that those from an urban background preferring to work in an urban setting (Mangham & Hanson 2008). Selecting and training students from certain rural areas where they will work post-graduation was thought to be a positive move for improving deployment of health staff to rural areas in Kenya (Mullei et al. 2010). Conversely, the deployment of graduates to areas that were inhabited mostly by a tribal group that was not their own, was seen as a negative and frightening prospect for nursing students in Kenya, particularly following the tribal violence seen in parts of the country in preceding years(Mullei et al. 2010). There were no studies found that linked Ethnic tension and health worker attrition however ethnic tension and conflict in Ethiopia has caused large numbers of people to become internally displaced(Al Jezeera 2012).Living and working close to family and community was of very high value to students in Ghana and important for finding the right partner to marry (Lori, Rominski, Gyakobo, et al. 2012).

2.5.8 Other factors affecting attraction and retention in rural areas

Being of a young age and single was found to increase attrition rates (Abimbola et al. 2012), for example in Nigeria many unmarried young midwives did not plan to stay beyond the mandatory one year service period and wished to travel back to their own areas and live with their family (Abimbola et al. 2012). Older age was found to contribute to increased willingness to be deployed to a rural area as did attending tertiary education in a rural area (Mullei et al. 2010).

The health profession also seems to make a difference. For example, higher proportions of medical students feel strongly about working in an urban area and also require higher levels of financial remuneration as an incentive to work in rural areas compared with nurses and midwives (Serneels et al. 2007b).Gender also impacts willingness to stay in a rural area with men being found to be more than twice as likely to leave their work in a rural area than women(Michael et al. 2010).

2.5.9 Motivators, incentives and retention of midwives and health workers in LMIC outside of Africa

Other motivations and incentives are important to consider. The multipurpose health workers (MPHW) working in rural areas of India are similarly motivated by the desire to serve their community. They describe comparable preferences as health workers in rural Africa for remaining in their areas of service such as quality health facility structure, educational opportunities for themselves and their children as well as opportunities for promotion and recognition by their superiors (Kadam et al. 2012).

In Peru, health workers ranked their salary level as the highest incentive for working in a rural health facility while the type of health facility was second. Increased opportunity to receive a scholarship for further study and/or a permanent position following a rural

posting were also seen as an incentive (Huicho et al. 2012). Unlike African studies (Michael et al. 2010), men in Peru were more likely to take up a rural posting than women (Huicho et al. 2012), while similar to Africa studies rural origin increased a person's willingness to work in a rural area (Huicho et al. 2012).

Indonesia has been successful in scaling up its midwifery health workforce – through a commitment to placing midwives in villages throughout the country and providing some with permanent government contracts. However disparity remains, with the most remote and poor areas continuing to experience much lower levels of skilled attendance at birth(Ensor et al. 2009). A permanent government contract is coveted in Indonesia for its relatively higher income, its job security and provision of a pension(Ensor et al. 2009). Only 57% of midwives are on a permanent contract leaving the remaining midwives with less career stability and motivation. Midwives in both urban and rural areas of Indonesia significantly supplement their income (up to two - thirds in some cases) through several means such as private practice as a midwife, providing nursing services or by farming and selling produce at the local market. The practice of earning other sources of income outside their role as a midwife detracts from their availability to fulfil their work in the government sector and meet community needs. This is unlikely to change unless government salaries for midwives increase (Ensor et al. 2009). Existing bonuses do little to improve motivation of midwives. Salary packages designed to attract midwives to more remote areas would have to significantly improve to provide motivation for midwives in Indonesia to be deployed to rural areas(Ensor et al. 2009). Attractive aspects of becoming a community midwife in rural Indonesia include; the convenience it affords in proximity to their husband's workplace, the children's school, and to other relatives(Ensor et al. 2009).

With better understanding of the particular motivating factors for a country or region a concerted effort can be directed at developing policies and strategies to attract midwives to areas where they are needed.

2.5.10 Conclusion

There is a gap in the literature regarding best practice models of midwifery education for Sub Saharan Africa particularly concerning programmes that best prepare midwives to work in rural areas. Grey literature highlights the importance of the direct entry pathway and the preferred option for midwifery education, but evidence is lacking in this area. Deployment, retention and attrition of health professionals is an area that has been more recently researched, and there are tangible and practical strategies that can be considered by countries when trying to increase the numbers of health professionals in rural areas. Research specifically pertaining to midwives and their retention in rural areas is lacking. With gaps in our understanding particularly surround the long-term outcomes and retention of rurally recruited midwives and other health workers. Research is also lacking in the application and outcomes of collaborative strategies to strengthen midwifery educational models and the profession.

This study addresses some of the gaps in research for direct entry midwifery education and deployment in Africa. This study also addresses questions about the optimal recruitment strategies needed to attract and support more women to midwifery and tertiary education. Finally this study will add to the body of evidence regarding developing of an enabling environment for optimal midwifery practice in a rural and resource poor settings.

3 METHODS

This study aims to explore the experiences of various participants involved in a direct entry midwifery programme developed for Ethiopia this programme prepares midwives to meet international standards and competencies for effective deployment into health centres in resource poor rural areas. This chapter describes the methods that were utilised in the study.

3.1.1 The Study Aims

The aims of this study were to:

- Document the experiences of students, staff and graduates in a 'direct entry' Bachelor in midwifery programme who were recruited from rural areas with the aim to deploy them back into their areas of origin.
- Explore the preliminary maternal health outcomes in four primary health centres following the deployment of two Hamlin College midwife graduates into each health centre, in their areas of origin

3.1.2 The Research Questions

The study aimed to address the following research questions:

1. What are the experiences of students, staff and graduates in a 'direct entry' Bachelor in midwifery programme with an integrated rural deployment strategy in Ethiopia?

2. What are the preliminary maternal health outcomes in four primary health centres following the deployment of two Hamlin College midwife graduates into each of the health centres, in their areas of origin?

3.1.3 The Methodology:

This study is underpinned by a pragmatic theoretical framework. The pragmatist world view is one that is 'problem centred' and 'real – world practice oriented' and therefore is an appropriate lens through which to study this model of midwifery education and deployment. The pragmatist researcher is looking for the consequences of actions and specific answers to specific problems rather than general answers with universal meaning(Frega 2014). Dewey, who was a proponent of pragmatism challenged traditional philosophical world views and asserted that social theory needed to rise above conceptual analysis by examining real issues and developing tangible solutions;

> '*Social philosophy must be problem –driven , which means that it should be motivated by the empirical examination of problematic situations as they emerge and are perceived in social historical experience, and orientated to the pragmatic identification of working 'instrumentalities to be employed and tested in clarifying concrete social difficulties'* (Dewey 1922) cited in (Frega 2014)

This research aims to contribute to the current discourse on the most effective and appropriate model of midwifery education and deployment for improved maternal health in rural Ethiopia, hence the pragmatist world view is appropriate. 'Pragmatist researchers look to the 'what' and 'how', to research based on its intended consequences – where they want to go with the it'(Creswell 2003, p. 12).

A mixed methods research design integrates quantitative and qualitative research strategies which positions it outside of the traditional world views of positivist/post positivist (a qualitative paradigm) and the constructivist /interpretive (a quantitative paradigm) (Feilzer 2010). This study draws on experiences of various participants, academic and non-academic, students and graduates in the field as well as quantitative

maternal health outcomes. ‘A mixed method research design is an approach to knowledge (theory and practice) that attempts to consider multiple view points’(Johnson, Onwuegbuzie & Turner 2007, p. 113). Mixed methods, also known as the third paradigm, draws on the strengths of both qualitative and quantitative design and aims to solve practical problems in the real world(Johnson & Onwuegbuzie 2004).

3.1.4 The Research Design:

A mixed method design was appropriate for this study as it took a pragmatic approach to answer the research question. The mixed methods approach enabled a range of approaches to the collection and analysis of data rather than subscribing to only one way (e.g., quantitative or qualitative)(Creswell 2003, p. 12).

Constructivist and post positivist theories of knowledge have been embraced so that the experiences of students, graduates and staff at the Hamlin College can be explored and selected health outcomes of the midwifery deployment strategy can be understood. The goal of the research was to provide insights for further improving midwifery education and maternal health outcomes and therefore a mixed methods approach is well aligned with this theoretic perspective as it allows the gathering of both qualitative and quantitative data(Creswell & Plano Clark. 2007).

This study involved the concurrent collection and analysis of quantitative and qualitative data. The fundamental principle of a ‘mixed method approach’ is that the use of quantitative and qualitative approaches in combination provides a better understanding of the research problem than either approach alone(Creswell & Plano Clark. 2007). The approach allows the researcher to ‘draw liberally from both quantitative and qualitative assumptions when they engage in their research’ (Creswell 2003).

The qualitative data includes the experiences of staff, students and graduates of the Hamlin College of Midwives which were recorded through a process of semi structured interviews. At the time of data collection, the student participants were actively involved with the College. The graduate midwife participants were stationed in four rural government health centres in an on-going partnership between the Hamlin College and the particular Regional Health Office. The staff participants' were both involved with the College directly and with rural recruitment and deployment activities.

The quantitative data set comprises of trends in the frequency of women accessing four health centres where Hamlin midwives were deployed. This is discrete data, illustrating the use of maternal health services before and after the deployment of a team of two Hamlin midwives, and covers the period of one year. The quantitative health centre data focuses specifically on the number of family planning and antenatal consultations, as well as the number of births taking place in the health centre twelve months prior to the deployment of the Hamlin midwives, and during their first deployment year. The health centres are government run and are located in the areas of origin of the deployed midwives.

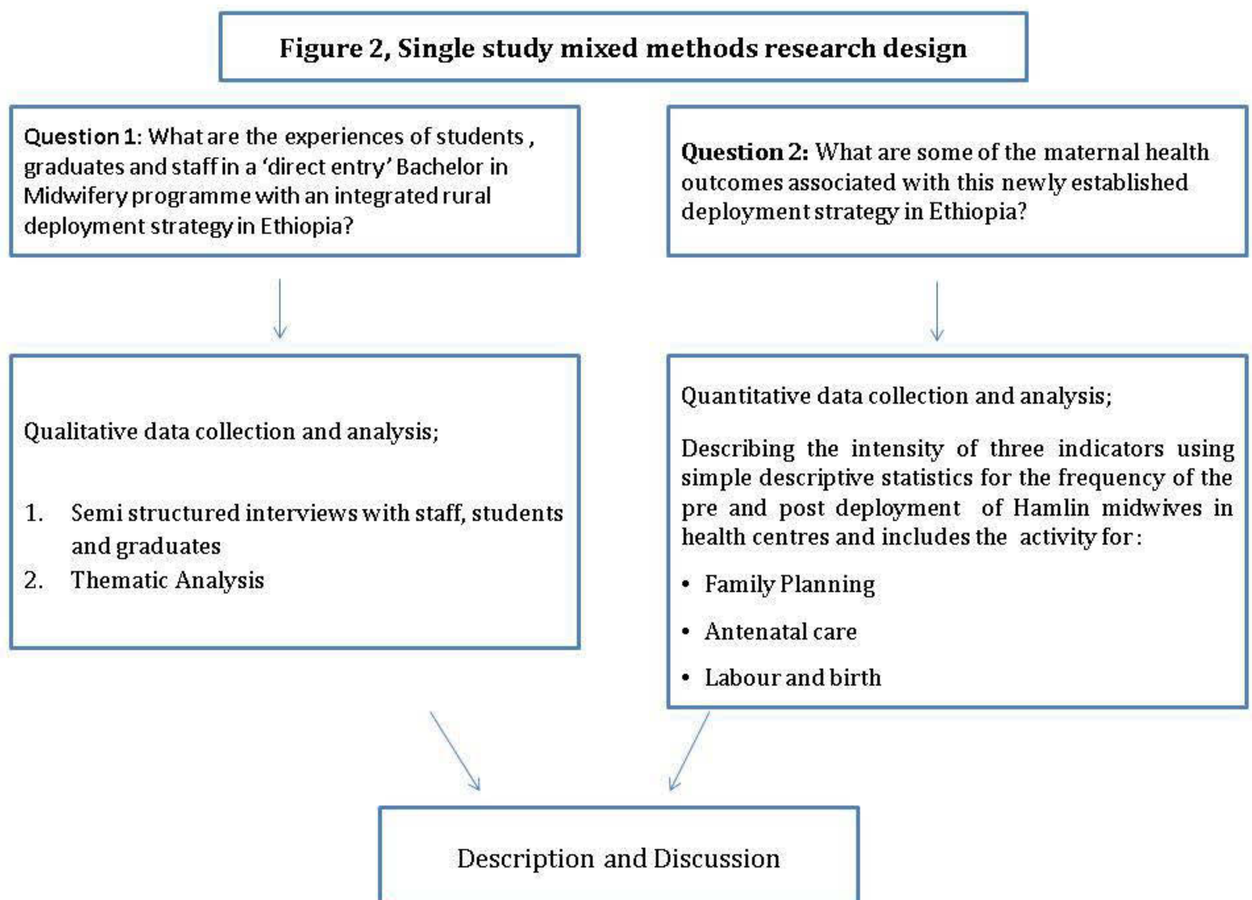
Drawing on the strengths of both quantitative and qualitative research methods, a mixed methods research design can provide a more complete picture in the study of the Hamlin College and its deployment strategy(Creswell & Plano Clark. 2007). Importantly for this study, qualitative research methods provide a way of improving understanding of the 'context and setting in which people talk'(Creswell & Plano Clark. 2007, p. 9) that of rural students entering a tertiary education facility and the context of the rural health centres. This is in contrast to quantitative methods alone where the 'voices of the participants are not directly heard'(Creswell & Plano Clark. 2007). This study also

benefits from what is argued to be the less biased perspective of quantitative data (Creswell & Plano Clark. 2007, p. 9). The maternal health outcomes add to the picture of what the deployed midwives were experiencing in the health centres - the perceived out workings of their 'integration' back into their communities as professional midwives.

3.1.5 Single study mixed methods design

A ‘single study’ mixed methods design was used(Creswell & Plano Clark. 2007). The quantitative data were collected from health centres at the same time that the qualitative data were gathered through semi structured interviews with students, staff and deployed midwife graduates.

Figure 2: A description of the process of the single study research design



3.1.6 Participant selection

The participants for the qualitative data collection were purposively chosen. identifying A small number were identified who would provide rich data from their experiences related to their involvement with the College, or as a midwife graduate in a rural area (Creswell & Plano Clark. 2007; Schofeild 2004). This can also be described as intensity sampling, where a small sample can be used to provide rich data and deep insight into the phenomenon. The section below justified the selection of the participants.

- Third year students were chosen because they had almost completed their studies and had three years of experience of College life.
- The graduates were selected who were able to share their experiences both reflecting back to their preparation as a student midwife and their transition from the College to professional life back in their rural area of origin.
- Three staff participants provide rich insight from the perspective of staff sharing their experiences facilitating the students in the clinical areas, as midwifery educators and support staff within the College and supporting the newly deployed midwives working in rural areas.

3.1.7 Participant characteristics

The participants for this study fall into 3 categories.

1. Three (3)staff working for the Hamlin College,
2. Four (4) 3rd year (final year) students in midwifery at the Hamlin College.
3. Six (6) graduate midwives with 18 months professional experience

Table 3 presents a description of the participant's characteristics.

Table 3: Participant Characteristics

Participant Characteristics	Number of participants	
Age	19-23	2
	24-29	7
	30-35	1
	35-39	1
	40-45	2
Female		11
Male		2
Staff		3
Students		4
New graduate midwives		6
Midwife by profession (including new graduates)		8
HCM Midwifery Educator (staff)		2
HCM non-midwife staff member		1
Area of origin	Rural	12
	Urban	1
Married		3
Educated in a rural area	Primary	11
	secondary	9
	Tertiary	10
Total number of participants		13

3.1.8 Interview locations;

The collecting of data was carried out in four locations but specifically determined by what was comfortable and convenient for the participants. The study required travel to meet with participants living and working in regional and rural areas.

3.1.9 Selection of Health Facilities

The four rural Health Centres were chosen because they were representative of the five Health Centres where the first cohort of Hamlin Midwives was assigned. The fifth Health Centre was not included in this study due to logistical reasons of travel and time.

3.1.10 Data Collection

3.1.10.1 The Qualitative Data collection:

The qualitative data were collected using semi-structured interviews with graduates from four of the five Health centres. The Informants were asked to share their stories and experiences regarding their time of recruitment, their time as a student in the College and their transition to full time work following deployment.

The interview questions included:

1. *Tell me about your experience of applying to join the College*
2. *Tell me your experience of when you first came to the College campus*
3. *Can you tell me about your time as a student (or as a staff member), what was your experience?*
4. *Can you tell me about your experience of returning to the rural area to work?*
5. *Can you tell me any stories about your experience in midwifery practice in this health centre?*

The interview process:

- The entire semi – structured interviews were carried out by the author of this thesis (myself).
- During each interview I used prompts to encourage each participant to give more information or expand on a story.
- When it appeared that a participant had not fully understood a question I repeated the question with slight variations.
- The interviews were recorded on a small digital recorder. By recording the interview I was able to listen to the interview multiple times increasing the opportunity of greater familiarity with the data. Digitally recording an interview enables me to focus on listening and maintaining eye contact with the participant during the crucial time of the interview(Silverman 2010).

Field notes

I. To minimise interruptions a small amount of field notes were taken during the interview when there was a point that I wanted to clarify or return to after the informant had completed a particular story or account.

II. Field notes were compiled mostly after each interview, noting down the setting and surrounding environment, the behaviour of the informant; for example noting if they were nervous or relaxed in the surrounding and characteristics of the informant and the health centre environment and demographics.

3.1.10.2 The Quantitative data collection:

Pre-deployment data:

Prior to the deployment of the midwives into the partner rural health centres, staff from the College reviewed the activities of the health centre. These data were collected by going through the log books available in each health centre.

Post deployment data:

Post deployment into each rural health centre data were collected by way of a monthly summary of activities carried out by the midwives. The midwives were required to record all their activities in standardised log books at the completion of each activity or consultation and for the purpose of following progress from the perspective of the College. The midwives were required to complete a monthly summary sheet that recorded the total number of antenatal checks, the number of family planning consultations and the number of women cared for during birth including those who were managed with a complication and or resulted in a referral to the next level of care.

3.1.11 Data analysis

Analysis of the qualitative data:

Data from the semi structured interviews were analysed using a thematic analysis. The thematic analysis approach allowed for the identification of emergent themes generated through the stories and experiences of the midwives. Themes were identified following a familiarisation process of full 'immersion' in the data (Silverman 2010). Recurring themes were identified and coded through a process of comprehensive reading and re reading of the transcripts and concurrently listening to the original recordings (Stone 1997). I transcribed all but one of the interviews which further enhanced immersion

into the data. A description of the identified themes was then carried out(Boyatzis 1989, p. 29).

Verification with participants took place at the time of data collection. This process provided a means of clarifying and cross checking whether I had understood the participant's experiences and way of understanding the world. This involved repeating back to an individual participant what I had understood from the interview. Modifications were made in my field notes to clarify participant meaning and were referred to during the analysis process.

Analysis of the quantitative data:

A descriptive quantitative analysis was carried out on existing data collected from each of the deployment locations. This analysis involved simple statistics (frequency, mean) and comparing the pre and post deployment maternal health outcomes.

Indicators include; the numbers of consultations for family planning, antenatal care and the numbers of women cared for during labour and delivery in the health centre.

3.2 Ethical considerations

Ethical approval to carry out this study was given by the Internal Ethics Committee of Hamlin Fistula Ethiopia and approval to interview the midwives was granted by the municipal health offices in the Amharra and Tigrey regions of Ethiopia. This Ethics approval was ratified by the UTS Human Research Ethics Committee: **UTS HREC REF NO. 2013000405.** Also see Appendix IV.

Conducting interviews where the participants were previously students of the researcher has the potential for affecting the process of voluntary consent, the interview

process and the nature of the data collected. To reduce the possibility of coercion and encourage potential participants to feel free to express their views, the research was discussed with each potential participant well in advance, in person or over the phone for those in the rural areas. In addition a third party, (a long time Ethiopian tutor who knew the students well) also discussed the research emphasising that students did not have to participate if they did not want to. Potential participants were also given information sheets in advance that detailed the nature of the research and the interview technique (see Appendix II).

Participants were given the opportunity to not participate by simply informing the 'third party' about whether they wanted to participate or not. There were some who chose that option from among the body of students and the graduates, while others who had said they would participate did not turn up for the interview on the day (this was in the rural area and returning to carry out the interview was not an option). Giving a positive response such as agreeing to participate (over the phone) and then not coming is entirely appropriate within Ethiopian culture and most likely means that the individual did not intend to come at all.

Each of the students and graduates would be aware of others who chose not to participate and so they would feel they too could opt out if they felt uncomfortable or did not want to participate for another reason. I found the knowledge that some students and graduates had opted out of participating in the research encouraging. I felt confident that those who were consenting to participate were doing so of their free will and not because they felt pressured or coerced.

Each participant was given the opportunity for discussion and to ask questions in advance and prior to the interview. Informed signed consent was received for any

interview that took place for the purpose of this study. See Appendix III for a sample of the consent form.

Candidates for the study were informed that they could request to withdraw from the study at any point. All participants are able to read and speak English to various degrees of proficiency (English language is the vernacular of all tertiary study in Ethiopia). The names of participants have been removed from transcripts and records.

The transcriber of one interview worked as a high level personal assistant in an international company and understood the need for confidentiality. She also lives and works in an entirely different area of Addis Ababa and has no known connections with the participants.

3.2.1 Critical self-reflection:

As a foreigner in Ethiopia, the founding Dean of the Hamlin College of Midwives and the researcher of this study I acknowledge that my position and cultural and socio – economic background would have influenced the processes of recruitment, data analysis and interpretation. I also acknowledge that this study will have been impacted by issues of language as English is my first language but not that of the participant's. Although I can speak and understand the official language Amharic, there were four mother tongue languages represented in the College with English as the language of choice in the classroom. It is important to note that English language was not used simply for my benefit but it is rather the language of all higher education as decided by the Ministry of Education. Language issues may have influenced my understanding of the participant expressions however member checking and my "closeness" to the culture having lived in Ethiopia for many years may have helped to minimize misunderstandings.

I believe however that every person – researcher and participant brings their 'own' personal culture and life experience into the mix when conducting research and that this is to some extent unavoidable in social sciences. Finlay (2002) identifies the process of researcher reflexivity as an 'outing' of the researcher Personally from the very beginning of my journey as a researcher I have been acutely aware of issues surrounding my place, position and power (perceived or real) within this body of research. I have grappled with the impact my 'status' may have on the study's integrity, objectivity and relevance. I do not have all the answers but I believe there is application beyond the researcher – participant relationship and this is an important study/story that needs to be told and there are rich findings that have relevance for today in the work of preparing the best midwives for rural deployment for improved maternal health outcomes in Ethiopia.

I have the unique standing of being both an 'insider' and 'an outsider'. I feel honoured to have worked alongside my Ethiopian colleagues. I have been encouraged and educated by them. I have also been deeply moved and enriched by the courage and tenacity of the students and graduates of the Hamlin College. I acknowledge that my connectedness and relationship as a colleague and an educator will have some impact on the interviews. It is true that research will always be influenced by the relationship between the researcher and the participants within a particular context. A different researcher in a different relationship may reveal a different story and perspective; this in itself however does not diminish the quality and relevance of the testimonies of the participants in this study.

I will assert that my relationship with the participants may not simply result in their saying 'what they think I want to hear'. From a cultural perspective, being 'an outsider'

may in fact have elicited more open expression in some ways than if I was in fact a fellow national.

From another perspective, I travelled extensively throughout the country, working, eating and sleeping in the very same conditions as my colleagues, the students and graduates in remote and rural areas. This together with a moderate command of the language I believe fostered a connectedness and the perspective of an 'insider' with respect to some aspects of the culture.

As an educator I worked hard at engaging with the students in ways that were different to what they were used to. Traditionally young people, particularly women are not allowed to raise their head or have eye contact with an 'elder' let alone ask questions or openly pursue a line of inquiry. It is not acceptable for young women to raise their voice and much of the first semester is spent coaxing new students to raise their voice to an audible volume. I encouraged dialogue in the classroom, challenging students to always question what I and others said and taught. I directed students to validate information and what they saw through their own exploration and inquiry. While this was a new and liberating experience for the students it did not take long for them to embrace their new found 'voices' resulting in several occasions when individuals and groups of students challenged aspects of their study or living arrangements even to the point of writing petitions and going on 'strike'. I believe that language limitations aside, this atmosphere of 'speaking out' facilitated open expression during the interviews. I believe that these student experiences in the classroom will have helped to ensure that during the interviews students and graduates felt free to share their views, experiences and opinions.

4 FINDINGS

4.1 The qualitative data

Three major themes emerged from the analysis of qualitative interviews with thirteen participants from the Hamlin College of Midwives, including three staff members, four final year midwifery students, and six rurally deployed graduates after the completion of their first year of professional midwifery practice in four Primary Health Centres. These themes are: 'The Journey to Midwifery'; 'Becoming a Midwife' and 'Innovation and Transformation.' Figure 2 provides an overview of these three themes. This figure outlines these three themes as a metaphor for the water system of the Blue Nile which is one of the major tributaries of the Nile River, the longest river in the world. This river flows through Ethiopia. Its feeder streams and Lake Tana are regarded as an important source of life in the country. The feeder streams represent the first theme the 'journey to midwifery', while Lake Tana represents the theme of 'becoming a midwife' and finally The Blue Nile represents the flow on effects of 'innovation and transformation" as the waters journey out from the lake through the land, a source of life for Ethiopia.

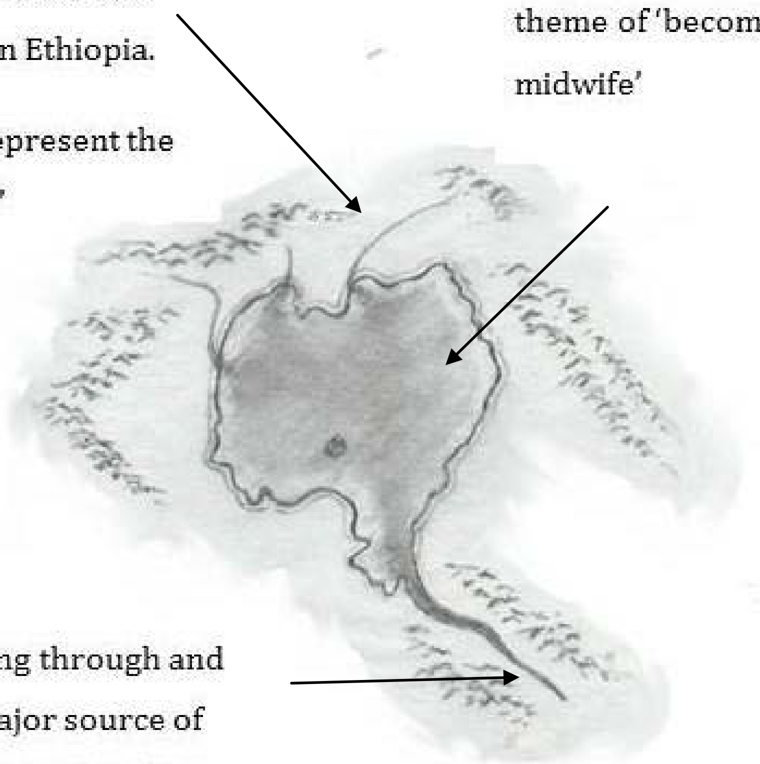
Mapping the journey to improving Midwifery care

Lake Tana, considered a sacred body of water and the source of the Blue Nile.

Lake Tana represents the theme of 'becoming a midwife'

The **Feeder streams** of Lake Tana, flowing from the high lands and mountains of northern Ethiopia.

The feeder streams represent the 'journey to midwifery'



The Blue Nile, flowing through and out of Ethiopia – a major source of water for Ethiopia, and some of its neighbouring countries.

The Blue Nile represents the flow on effects of 'innovation and transformation'

Figure 3: Mapping the journey to improving midwifery care

4.2 An overview of the qualitative data

The 'Journey to Midwifery' features stories of childhood and adolescent experiences regarding the struggles that students and midwives faced to complete schooling and gain entry to higher education. The participants describe childhoods burdened by poverty, deeply rooted social and cultural beliefs regarding gender, status and the sexual and social autonomy of women. Their choices in tertiary education are further challenged by the government's control of university course allocation, to a faculty that the women may not have selected. The Hamlin College of Midwives was seen by participants as providing them with an alternative university education, making it possible to pursue their preferred course of career in midwifery.

'Becoming a Midwife' reveals experiences of personal change and development. This theme captures stories of adjusting to life away from their community and adapting to self-directed and independent learning in the College. Participants describe their increasing interactions with women during their early and ongoing clinical placements that many indicated as being important to development of skills and confidence. The initial experiences of the students were focused on themselves, their own fears and trepidations gradually giving way to the needs of women and the importance of woman-centred care. Finally some participants described their efforts to become advocates for the women in their care.

In the third theme, developing professional confidence, an appreciation of their rural identity and support and experiences emerge from the data as important building blocks in a process of 'innovation and transformation'. The graduated midwives' experiences reveal how they had become empowered agents of change within their own communities, and within the health system.

The Journey to Midwifery

The feeder streams that traverse the mountains and fields of rural Ethiopia flowing into Lake Tana, the source of the Blue Nile represent 'the journey to midwifery'

Figure 4: The journey to midwifery

4.3 The Journey to midwifery

The journey to midwifery is 'mapped out' from various participant perspectives, including those of the staff of the Midwifery College, third year students and graduate midwives. This theme includes descriptions about gender imbalances and the lack of self-determination that define life for women, particularly those from rural areas in Ethiopia. Issues around education and socio-cultural constraints and expectations, predominate. The theme also includes issues surrounding choices within education and career, and the processes and justification of the selection criteria that was developed by the Hamlin College of Midwives.

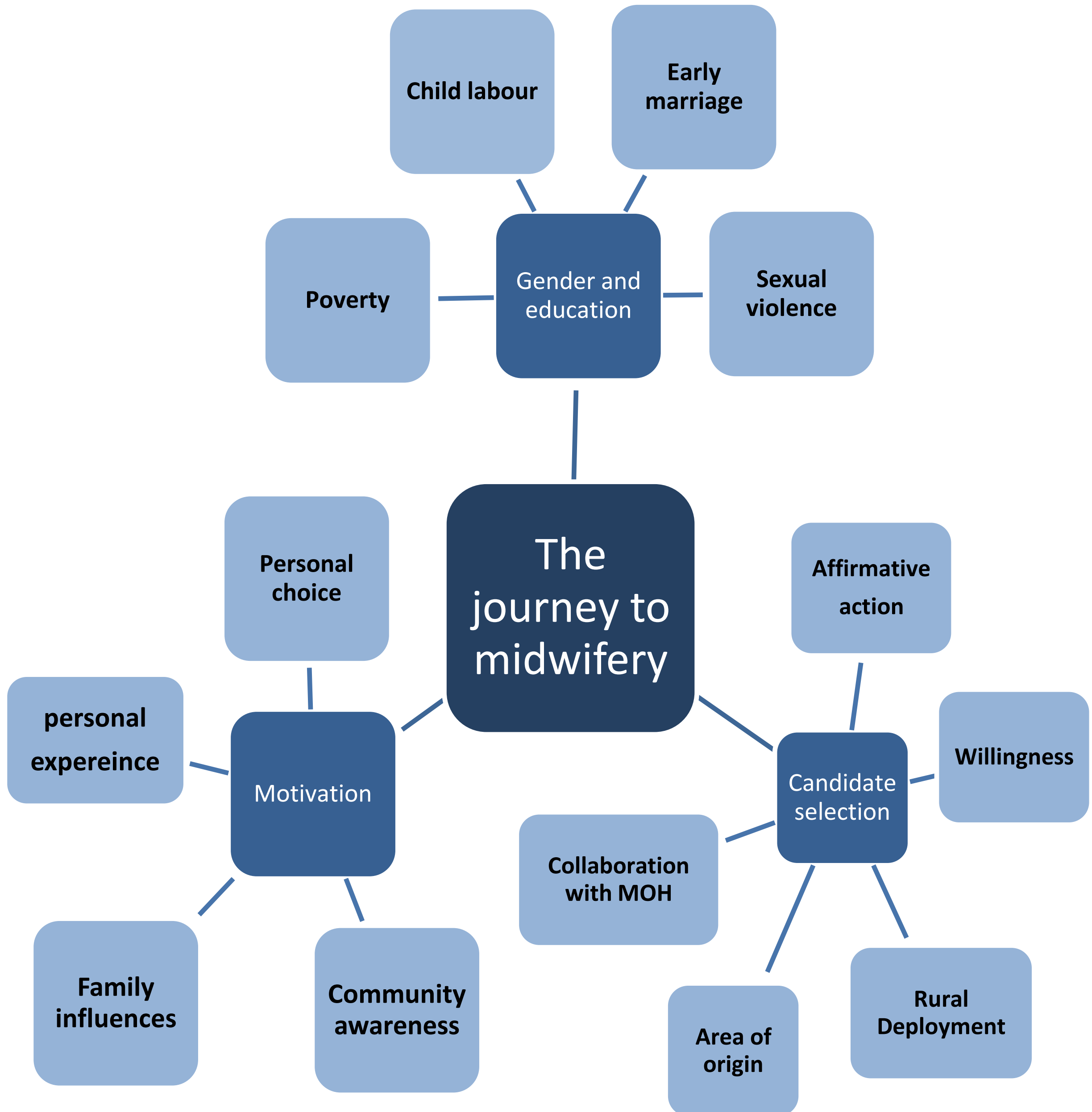
The data paints a picture of the challenging and unique journey that these women embarked upon in order to pursue higher education and a professional career. Reaching a place where a young woman is able to contemplate the choice of tertiary education is a major achievement in a rural community and sets her apart from most of her peers. Many of the student and graduate midwives had wanted to pursue a career in the health field for many years, while for others it was through hearing about problems related to maternal health, in particular obstetric fistula, which gave them a desire to become a midwife.

For a number of participants, it was through first-hand experience of pregnancy, and or childbirth, leading to the death of a sister, an aunt or the near death of a mother that sowed a seed to become a midwife. One informant was a third generation midwife inspired by stories from her mother and grandmother who worked as 'traditional midwives'.

Staff participants involved in the careful selection of midwifery students for the Hamlin College described the process and rationale. The process of tertiary place allocation by the Ministry of Education is revealed through the experiences of students and graduates.

The journey to becoming a midwife can be categorised into three sub-themes: 'gender and education'; 'motivation and choice'; and 'candidate selection' (See Figure 4]. Gender inequality invisible in many aspects of life in rural Ethiopia and it is clearly demonstrated in the sphere of education. Participants describe the motivating factors involved in their choice to pursue midwifery and to join the College, and their decision not to follow through with the assigned faculty chosen for them by the Ministry of Education. They also describe the importance of a strict selection process and a desire of the Hamlin College to find the most appropriate candidates to enter midwifery, with an aim that they return to their area of origin to work post-graduation. Figure 4 provides an outline of the sub themes under which data were coded in the theme 'The journey to midwifery'. These sub-themes will be described in detail, drawing on the testimonies of participants.

Figure 5: The journey to midwifery - mind map



4.3.1 Gender and Education:

'Mostly because males are a little bit well educated, they are getting a lot of chances'

The informants described a setting where the proportion of girls in education decreased incrementally as a group of students advanced through elementary, middle and preparatory school. The young women who reached Grade 12 were in a minority in their community. One informant found herself the only girl in her town to attend school in her final year. She also highlighted the attrition rate that occurred as the grade level increased:

> *When I was a Grade 12 student I was [the] only female student in the preparatory school, in my batch, I have 29 male friends but I am the only girl…Up to grade 10 there are so many girls taking the national exam to enter into preparatory school, some of them have a [good] result so … [*but*] even if they have a result they can't enter [*the are prohibited*]. Mimi, [not her real name] Inf. 11*

In the participants' experience, attrition by their peers was evident from as early as the elementary stages of schooling:

> *I remember up to Grade 5 we were 35 females … the number of boys was more, 65, I think … and in Grade 8, only 25; 10 of them failed. We continued up to Grade 9 and Grade 10 together and from Grade 10, only five passed the exam, 20 of them failed. Finally we continue up to Grade 12 and even one girl failed Grade 12; she didn't score enough to enter university. So it is amazing, a very small number of females were able to score enough to finish their education. Abebech, [not her real name] Inf. 09*

The effects of poverty and child labour on the education of girls

For some girls, the financial pressures on their families prohibited them from attending or continuing school:

> *The economy of the family, the situation prevents them from continuing to learn in preparatory school. Mimi, Inf.11*

For others it was the pressure of needing to look after other siblings:

> *They are helping their family, [they are] the one to have a responsibility for their sister, their brother, they have to do this. Mimi, Inf.11*

In many situations, the education of girls was curtailed due to a combination of poverty and having a large family that could not be provided for by the parents alone. In some cases, a girl might be able to postpone her education for a number of years:

> *One of my friends she didn't have anything, her mother was a day worker [and] in their house there were 6 in the family. My friend was the first daughter in the home and finally she leaves the school to help her family and after 3 years - she continues. So, economic status affects many girls to discontinue their education. Abebech, Inf.09*

A family might not be able to purchase the materials needed to assist with schooling such as exercise books, pens or even shoes so that a student might be able to walk the great distances required in rural communities to get to school:

> *Girls are affected because of the economy; they didn't get the materials for education. Abebech Inf. 09*

Child marriage and education

The participants also described early marriage as a major cause for girls to be removed from school:

> *Some of them are married when they are finished Grade 10. They are married, early marriage, some of them, most, not only some. Mimi, Inf. 11*

Abebech drew a link between the great distances that children need to walk in rural Ethiopia to reach school and the practice of rape of an unaccompanied girl with the possible aim of marrying her [‘finding a wife’].

Sexual violence, early marriage and education of girls in rural areas

When marriage was not the intention of the perpetrator a marriage would be sought to remove the stigma of a girl ‘losing’ her virginity. Abebech described the fear of being raped and subsequently married as a major deterrent for rural girls to attend school.

> *There was early marriage at that time and poor economic status also affects them to continue the education and also distance because out of B [outside the participant’s village] there was no elementary school and they [girls] were afraid to come [to walk] to B because they may become ‘married to someone’ [following rape]. It was a very difficult time at that time”. Abebech, Inf.09*

The abduction and rape of a girl might be arranged by the parents of the girl to prevent her from forming a relationship with someone outside of the family’s choice. An early marriage may also be arranged to prevent a family from being ‘disgraced’ if parents feared a girl might became pregnant ‘out of wedlock’. To choose to continue education might have very serious adverse effects on the life and health of a young girl:

Early marriage is common because the community [does] not have any awareness of the side effects and complications of early marriage at that time, so what they said is instead of sending [their daughter] to school they prefer to give them ['away in'] marriage. They prefer to marry them [arrange a marriage for them]. 'If we send [her] to the school they [the girl] may have a boyfriend, they [the girl and her boyfriend] may have another plan' [the family say]. From 12 [years] up to 18 [years] it was like this [and] so many girls stop going to school [by choice, because] to continue the school will affect them [due to the cultural practice of child marriage]. Abebech, Inf.09

In her interview Hanna [not her real name], a rural supervisor of midwives, talked about her experience of learning about one the graduate's personal story of abduction with the intention of marriage when she was a child. Hanna was amazed and encouraged when she witnessed the particular midwife recounting this experience to a group in her community, challenging them to not practise 'child marriage', as part of an education session carried out by the midwives;

My family want me married early and they bring the man to take me [arrange with another family without her knowledge that she can be abducted and raped by a potential 'husband'] but, I got away and my older brother by two years talked with my mum and Dad. He stopped school, and walked me to school each day [until I caught up with his grade level] and then I go to school with him and he protect[ed] me from abduction and I learn [attend school] up to Grade 12. Hanna, Inf. 13

4.3.2 Motivation to become a midwife

Many of the midwife students and graduates talked about experiences that influenced and impacted them and which motivated them to consider midwifery as a future career;

Awareness of poor maternal health in the community

Evidence of the poor health status of women and children is a daily reality when growing up in a rural community:

> *Yes, first choice, I wanted midwifery because [I want to] decrease maternal mortality and morbidity and to decrease neonatal death, [because of this] I want to [be a] midwife. Yemengushal, Inf.06*

For some of the informants it was through hearing about obstetric fistula by way of a public health campaigns in school or the experience of meeting a woman with an obstetric fistula that was a motivation to join the College to become a midwife:

> *When I was in grade 12, I heard about the mother who leaks urine…This complication [obstetric fistula] [is] in my Kebele [village]. I was angry with* [about] *this complication; what is this complication? And how can [we] prevent it? I think before. Because of this reason I was happy at [the recruitment] time. I am [one] of the first students [to attend] this College from Tigrey region. Abebech, Inf.10*

A desire to improve maternal health especially in their own community was also identified as a motivator to becoming a midwife for some of the participants and in the case of the graduates they talked from the perspective of seeing that desire become reality:

> *So I selected [midwifery] because of the problem [poor maternal health], I selected this…because I help the women of my country, as well as my Woreda [municipality] and my sister as well as my mother, so I am happy with this….and now I am working in my Woreda [municipality] and I think I am doing very well. Abebech, Inf.10*

The influence of family in choosing midwifery

For several midwives the influence of family played a significant role in making the decision to become a midwife. For Tirunesh, her decision to become a midwife was influenced by her father to become a nurse but she became more focused on midwifery following a tragedy during childbirth involving her aunt:

> *I want to be a nurse because my father also wants that I'm a nurse for the future, Tirunesh, Inf.07.*

A personal experience influencing the choice of midwifery

For some candidates it was by witnessing the a maternal death or near death that influenced them in their choice of midwifery;

> *And why I'm selecting midwifery? Is that in my community, my aunt delivered at home [without a professional midwife] and she faced* [had] *a PPH [post-partum haemorrhage] and she died. Tirunesh, Inf.07*

Abebech similarly was influenced by her mother's desire for her to become a health professional, but it was the story of complications during the birth of Abebech that influenced her choice for midwifery:

> *Ok, first of all it was my dream to become health provider because we had amazing history in my house, when my mother had me she had obstructed labour, it was face presentation, she delivered me and she was in labour for 3 days and on the 4th day she gave birth finally. When I was older I asked the TBA [the traditional birth attendant] 'what was the process?' [And she said] 'It is not normal, just you came by your face', she said, just like this, so this encourages me to become a midwife. I*

should prevent this thing because my mother was very in danger at that time, it is a life threatening time, also my mother always encourage me ' you will be a doctor' [a term used to refer to all health professionals] when I was a child. So this builds me to enter the College. Abebech, Inf.09

Miriam is the only midwife student who had previously been trained to the diploma level as a nurse, but it was Miriam's long term goal to become a midwife inspired by the stories of both her mother and grandmother as they worked as traditional birth attendants (TBA) in her home town:

My mother is a TBA and she is telling me how she is doing it. She is telling me everything that she does from home to home. And those things are printed into my mind, so even if I am a nurse I want to be a midwife. When I finished nursing school I asked the matron to continue and to work in delivery unit. I was not a midwife, but I was working as a midwife, I want to be a midwife…

One time at the vacation from school [midwifery College] I went home and asked her [her mother] how she is doing these things without any knowledge [formal education], without anything. Even she is practising the manual removal of the placenta and resuscitation of the baby with mouth to mouth. This is my vocation, because I am very happy that I can deliver for [assist] *women and see the new life in babies. Even my grandmother was a TBA, and now I am educated as a midwife and with knowledge and with skill I am doing these [practising midwifery], [my mother says] 'I am very happy, this is in my heart, that one of my daughters, one of my child is becoming a midwife to continue my work'. Miriam, Inf.12*

4.3.3 Candidate selection for midwifery

The staff participants of the Hamlin College detailed the process of selection for candidates to join the midwifery programme. A candidate's connection to their community, a desire to become a midwife, being a woman and a willingness to return to their area of origin to work, were put on a par with the need for good academic achievement:

Affirmative action and midwifery

Abebe [name has been changed]; a midwife educator supported the Hamlin College's selection of only female students. Abebe attested that, with more boys than girls flowing through all stages of education to graduation it was understandable that more boys were given the 'chance' to participate in tertiary education. This would lead to a higher representation of males than females in all professions including the midwifery profession:

> *All our students are female currently; the gate is closed for male students... The problem is; there are not many female students [studying midwifery in the university] or female professionals [midwives]. Mostly because males are a little bit well educated, they are getting a lot of chances. Abebe, Inf.01*

Area of origin, student midwife selection and rural deployment

The successful deployment of midwife graduates into a rural area was a major priority for the staff of the Hamlin College. Identifying candidates who originate form a particular rural area and are willing to return to work in that rural area following graduation were important aspects of the recruitment process;

I think, one of the things which make a foundation for this high quality training and for this highly motivation [in] the midwives after graduation, is the criteria for selection. So, we are selecting students from rural area[s], even we are considering [that] their birth place is very important for selection; knowing the language, knowing the culture and a student's willingness to return. Abebe, Inf.01

Collaboration with local leaders and the recruitment of student midwives;

Abebe describes a recruitment scenario that has the deployment of future midwives foremost in its strategy. Important relationships that the College has with health authorities, and source preparatory schools in the geographical area of selection, are also emphasised:

For selection of the school, we have a standard; we have good communication with the regional health bureau…just we identify potential areas where to deploy these midwives. And then we will look any preparatory school around that area and we will meet the principals of those schools and we inform them to list students who are from the natural science stream, interested to study midwifery, and know the local language, culture, born in this particular area and willing to come and to serve the community. Abebe, Inf.01

The HCM staff found that choosing midwifery candidates from rural areas made it easier for the graduates to settle back into living in a rural area. Moreover, there was the added advantage of optimising acceptance of the midwives by the community. Midwives who know the area, the language, the culture and most importantly who are known and whose families are known by the community;

We identify potential students of this area and it has to be in that [the area], where the students are going to be deployed…the students know that particular area, [the] culture, language, geography, everything, which is very important for them in the future when they are back. They know the place; they are very close to their families, which is one additional benefit to selecting students. And also it is very simple for them when they are going out on community activity. Because people they know [will recognise them]'oh, this is the midwife'. They said like this. This is… they name, they call the name of the midwife and the name of the parents and people they give attention. And this is one strategy by itself. Abebe, Inf.01

Willingness to be a midwife and personal choice

Abebe describes the difficulty in discerning willingness and the importance of candid discussion between recruitment staff and potential candidates to try to ensure candidates are fully informed about the midwifery profession, the course requirements and the deployment expectations:

This is what makes our college special. In most public universities and college, the students are forced to assign and study the area they don't know about, so in our case, we give information for them, and they know what they are going to study – they know where they're going to work after graduation so it is good – even when I was in the southern part for selection it was a question from the student. We give orientation about the department, [midwifery course] *and the one who are not interested leaves the exam room in my experience. So, when we put interest as a criterion – you know, we give orientation for them, when we go for selection; we give exam and interview, we orient them about study, their future, so interests to know… actually it is difficult to know the student's interest, but for our sake we give*

> *orientation and after the orientation… 'If you[r] interests are to be part of our college: if you are interested in study[ing] midwifery, you can take the exam, you can sit and stay in the exam room, otherwise you can leave'. So, number one, Interest is number one criteria for us. Abebe, Inf.01*

Students, graduates and staff talked about their experiences regarding the arbitrary allocation of matriculating students to courses in universities by the Ministry of Education. One graduate explained her experience when being assigned to a university by the government following matriculation. The student was confused about what could have caused two students of the same rank, and with the same subject choices, to be assigned to two entirely different departments:

> *The methods of choosing do not depend on the interest of the students. We don't know how they [the Ministry of Education] make their decision…there was one student who has the rank the same as me and he [is assigned to] the department of health science but I did not get the chance … just I [am assigned] to the teaching department. So we don't know the system of choosing, just they [the MOE] choose in Addis Ababa [the capital city]… No it [teaching] was not by choice. This [midwifery, was] my choice. Brooki, Inf.10*

Abebech described the pressure she was placed under by her close friends when she chose to do something different from them and different from what the government had assigned her to do:

> *In another direction my friends [were not happy for me] to join the College; They said to me after I pass the exam, after I know my score, they say to me 'you should not go' my friend said to me. 'Why' I said [asked] to her, 'you don't know what the*

organisation will do for you, so you should not go to Addis Ababa' she said like this. At the time I was very angry, I say [said] 'no problem, it may be better than governmental school', I say like this because I don't have any interest to continue with the teaching department, it is not my interest, 'how can I continue like this?' I said to her and finally I just made a call to my brothers and I decide the final decision, but many people, many friends they didn't agree with that. Abebech Inf.09

Desse described how she had been assigned to veterinary school when she had expressed an interest in becoming a health worker:

They [the MOE] send me to Gondar University and my, my field [laughing] was veterinary medicine but I wished to be a human health care provider and it was my wish to be health care provider for human being but there was no chance to choose. Desse, Inf.04

It is understandable that after a short time this student dropped out of vet science and was very pleased when an opportunity arose in her village to apply for a position in the College. Abebe, a midwife educator shared an experience of the challenge of trying to educate and motivate students who do not want to be in the midwifery field:

Because some of the students which I was teaching last time (in another College), they were not interested to be midwives. Just they were assigned by the government. That is why it was very difficult in teaching and learning process. Abebe, Inf.01

Abebe also gave a concerning example of the potentially disastrous consequences that may occur for midwives, clients and the midwifery profession when individuals are forced into a profession that is not of their choosing:

What [the] government [the MOE] is doing; usually, they just assign students despite their interests. I can tell you one very important experience. I met a midwife, a male midwife, [who had newly] graduated and [who had] served one year and I had a chance to talk with him, sit with him. Because he was always not happy, he was not comfortable with the mothers, he was practising in an unethical way. Then I asked to him, 'why you are doing this? You're a midwife'. Then he said, 'it was not my interest to study midwifery, I was forced in Gondar University to study midwifery, Can you tell me [how I was assigned to that course]? When I filled the form out, I put midwifery the last. My first interest was to study engineering. Medicine - it was my last, my last option. When they assigned me, I was not going to the classes, he said. I was not going to the clinical area'. Even, he said 'I graduated without observing even a single delivery'. So I said, 'So, you are correct, because you didn't pass with proper training, which is why you are harsh for [to] *the mothers'. After that, I was not surprised when he was doing something wrong, because it was not in his interest, he was forced to study, he was not properly attending the class, and he was not properly going to the clinical area. Even he graduated without attending a single delivery. This is a true story in the western part of Ethiopia.*

Abebe, Inf.01

4.3.4 Summary

The journey to midwifery is a major theme that emerged from the data. The level of self-determination demonstrated by these women in an oppressive environment was a striking aspect of their collective journeys. Whatever the inspiration, the overwhelming comment is one of choice and self-determination. Being able to choose the midwifery

profession was of importance to respondents to satisfy their on-going passion and commitment.

Students and graduates chose to pursue midwifery for a variety of reasons; they said they were inspired by a personal interest to work in the health field, a desire to improve the situation of women in their community, or for some, a family legacy, a passion for midwifery, a tragedy, a parent's dream.

The participants shed light onto the weaknesses of the Government's arbitrary allocation of students to university places, and the potential to be placed in a profession, for which a student or graduate has no passion or desire at all. Participants felt empowered to have a choice in career.

Figure 6: Becoming a Midwife, from Novice to Expert

Becoming a Midwife- from novice to expert

The largest lake in Ethiopia and the source of the Nile, 'Lake Tana', represents **'becoming a midwife'.** Students from rural areas 'dive' into midwifery experiences. Immersion in midwifery allows the women to move through a cycle - from fear (an outsider looking in) to ownership, identity and empowerment.

4.4 Becoming a midwife, from novice to expert

The **'journey to midwifery'** flows through to the second emergent theme of **'becoming a midwife'**; and illustrates students and new graduates revelations of a growing comprehension and understanding of midwifery coupled with an increasing passion for the profession and to care for the women they are working with.

This theme was divided into two phases;

a) The development of the student midwife

b) A time of professional realisation occurring in the initial stages of their graduate life

The dynamic in becoming a midwife spans the period from the early student initiation to professional realisation after graduation.

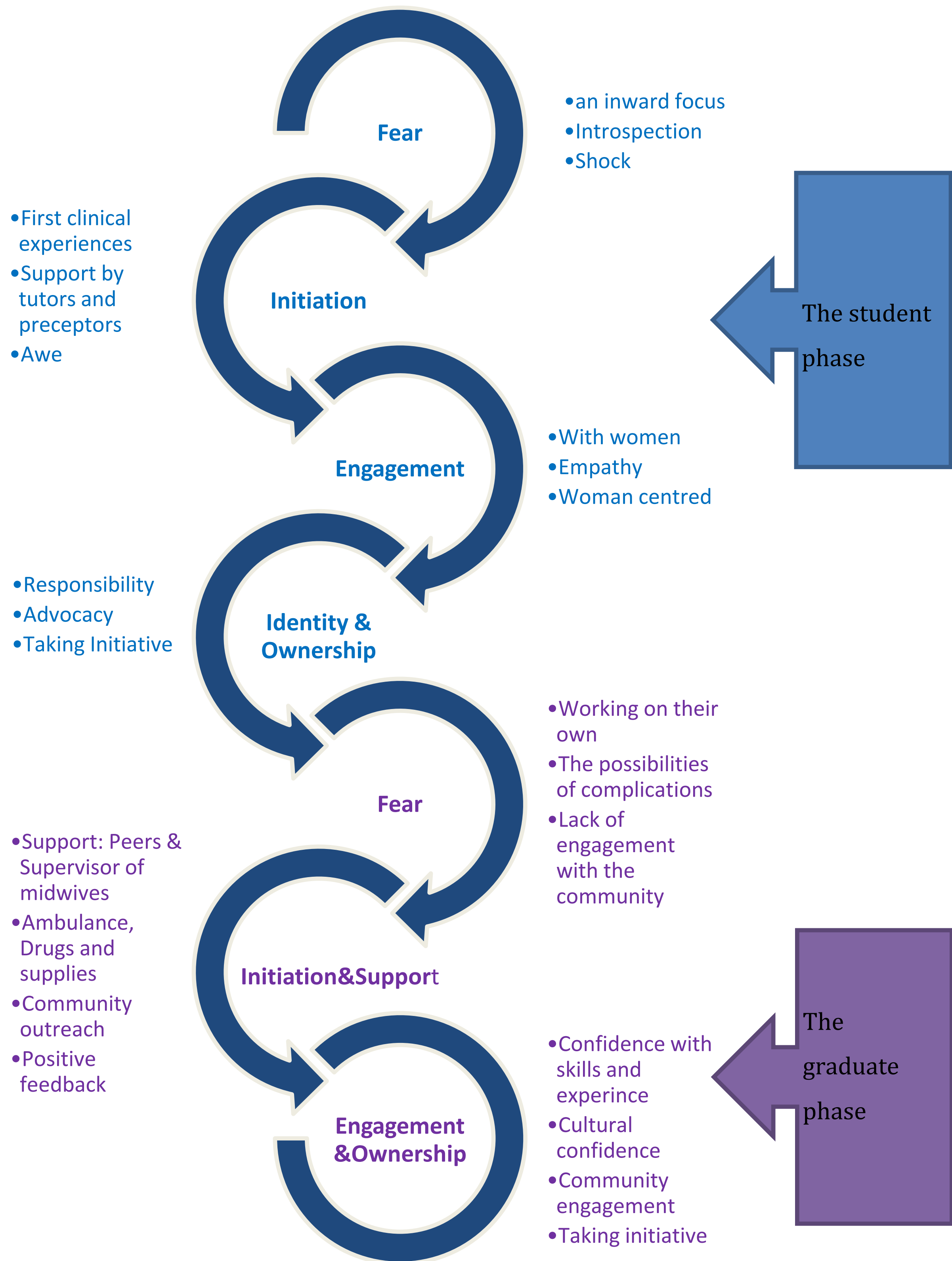
The student phase is initially characterised by an inward focus. Feelings of fear and shock dominate the students' experiences. However, as students' progress into hands-on encounters with women, underpinned by a supportive and encouraging learning environment, they become more outwardly focused, confident and attentive to the woman in their care. Student midwives transition from the initial stages of fear and shock to a state of wonder, achievement, identity and ownership of their chosen profession.

Newly qualified midwives experience fear as a dominating feeling once more as they recognise the challenges of their new professional environment. This fear is gradually balanced by positive outcomes in their work as they successfully manage and care for women in their communities, under the support and guidance of the visiting HCM midwife supervisor. The growing confidence of the graduate midwives in their skills and

knowledge, attributed to both their undergraduate preparation, and their professional experience is complemented by their recognition of ‘insider knowledge’ of local culture and language and the resultant community connection that they are able to make.

Figure 7, on the following page (p.109) illustrates the phases or dynamic of ‘becoming a midwife’.

Figure 7: The dynamics of becoming a midwife: Mind map



4.4.1 The student phase in becoming a midwife

Fear and shock are emotions that dominated the students' descriptions of their initial experiences and first encounters with the work of a midwife. Participants described an introspective stage when the student midwife was very absorbed with what she was experiencing. The new environment in the College and the clinical sites were an assault to their senses. They were unable to appreciate much beyond these feelings and were unable to engage with, or even 'see' the women in the clinical setting. For example, the student midwives' testimony suggested that when they first 'saw' a 'fistula' or birth they were overwhelmed by the smells and sight of blood and could not appreciate the woman who had suffered a fistula injury or who had given birth:

> *The first time everybody was afraid. Some of the students they fainted because they saw blood and so for the first year student it was like this. Abebech, Inf.09*

At this time the student midwives appeared to be onlookers into a world that they were only just becoming acquainted with. The harsh reality of seeing a woman suffering with an obstetric fistula was quite confronting for them:

> *The first clinical practice was at the fistula hospital, it was the first time for all of us. When we entered the ward everybody covered their noses because it was new and we did not get any exposure before, and at that time I was very afraid because I saw the fistula patient. Abebech, Inf.09*

The students' initial experiences were all about themselves, about what they saw and how it made them feel and react:

I remember it was [in] first year when I see a normal labour and birth but at that time I was very, very afraid and when I see a bleeding and when I see the doctor do a caesarean section I felt very afraid at that time. Brooki, Inf.10

Initiation into midwifery

Despite having exercised their right to choose their own university course, it was not until some students actually entered the College and commenced their study that they began to develop a comprehension of what midwifery entailed:

Before [I] entered the Hamlin College I want[ed] to enter the health profession but I did not know [much about] health [professionals, such as a midwife or] doctor, something like that I did not know. When we come in [the midwifery] College and take education about midwife [ry], I [really] wanted to know it. Yidi, Inf.08

It was through the initial 'hands-on' experiences in the clinical setting that the students began to identify themselves as midwives:

I am happy because before this one I have assisted five [women during the birth of their babies] then I conduct this one [assisted a woman as the primary midwife] and after that I am confident. I think after that I can be [a]*midwife. Frehiwot, Inf. 03*

One participant expressed her transition from initial 'hate' to feeling that being a midwife was not just good but 'better' then another profession because of the great satisfaction she felt following the birth of a baby:

When I see the blood, when I see the baby, I hate [laughs], but when, after finishing the procedure, the mother being happy, when she is breast feeding the baby, she

gives feedback [and] it is one[the greatest]satisfaction. So satisfaction [it is so satisfying!], [and] that satisfaction makes me want to be a midwife. Addis, Inf.05

Engagement: Seeing each woman

Through on-going engagement with women during clinical placements students began the transition of 'becoming a midwife' in the truest sense of being 'with woman'. Student midwives began to see the woman behind the 'birth' or the 'fistula' and started to develop a sense of empathy and respect for individual women whose experiences were outside of their own. Frehiwot gives a sense of this in describing her first experience of assisting, rather than observing, her preceptor at a birth:

I am really surprised that the vagina appears to be so narrow and then I see the baby come. I am very afraid and I think this woman can tear and I wonder how can she survive but after she gave birth she has no problem. It is a surprising thing for me. Frehiwot, Inf.03

The presence of the midwife preceptor was an important source of encouragement and support for the student midwives. Many of their initial experiences in the clinical setting were engaging, profound and awe-inspiring, as suggested here by Desse:

Yeah, it's amazing, first, when I see first delivery I didn't expect that human being deliver through vagina [like that] and I say 'what is that'?, Sr. N [the clinical preceptor] was with me, and she say 'it's the hair [on the head of the baby] coming through the vagina' and it was amazing, it was [an] amazing time for me. Desse, Inf.04

Empathy and woman – centred care

The midwifery students described a growing appreciation of the need to develop skills other than those associated with 'clinical tasks'; they began to understand the importance of communication skills and an individualised approach in order to maximize the potential for each woman to feel valued:

> *When we work with women in the fistula hospital we learn how the health care provider should approach women, how we can talk with the patient, how we give care and how we show them love. Desse, Inf.04*

Identity and midwifery

With increasing engagement with each woman in their care came an increase in their passion for becoming a midwife. One student came to believe that being a midwife is better than being a nurse, expressing her opinion that in terms of assisting a woman giving birth, a midwife has the advantage of enjoying the outcome of her work in a relatively short time frame when compared to a nurse caring for chronically ill patients:

> *Being a midwife is good because you know the outcome in a few minutes. If another profession for example if I would be a nurse, if [there is] a critical issue, I don't get to see the outcome for a long time, so when I measure this, being a midwife is better. So gradually being a midwife is very fantastic, so I will be a good midwife, I accept like this [I believe this] Addis, Inf.05*

As their experience grew, the students used words that expressed great joy about their new profession. There was a sense of empowerment and privilege in being part of this moment in a family's life:

I am very happy because I see the first coming, the first person to see the human being coming to the world, the first person to see that person is me! Not the mother, not the other person, but me, even if that baby didn't know me! But I am very happy and helping the woman and standing with the woman, saying to the woman 'Iyzosh' [be strong, be brave] and it is very good. For the human before all creatures, I think birth is truly valued. Desse, Inf.04

A greater sense of responsibility

'Becoming a midwife' and witnessing first hand as a student the trauma that an obstetric fistula inflicts on the life and health of a woman, significantly impacted on the students' sense of responsibility and thereby accountability to the women they cared for:

It [caring for women with a fistula injury] has a big impact because if [a midwife is] not practising safe delivery, because of the way how to diagnose [being able to identify] obstructed labour it may brought [result in] a [woman developing a] complication like fistula. A complication of delivery, so the complication of obstetric fistula and other midwife practices they are related, they are significantly related. So it matters, 'how can I treat the mother [and] how I can best care for the mother?" What is the correct way to manage the mother?' If I will not give good care for the mother, she will not come to the health centre and she may face obstructed labour and may develop obstetric fistula, so it has a big impact. Brooki, Inf.09

Ownership and advocacy

A growing sense of empathy, dovetailed with increasing experience and confidence, enabled the midwifery students' to advance into becoming advocates for the women they were working with. This process was described by Mimi:

> *[There was] one mother [with a] delay in second stage [and] when we are assessing by vaginal examination there is a caput and moulding on the foetal head. It is a contraindication when we apply the cup [for a vacuum assisted birth] on the caput. It is a failure; it will lead to a failure. We are saying, 'So why are you doing this? We are learning that this is a contraindication, so you are doing [this procedure] in an improper way?' We are talking to the doctor, 'Doctor they want to apply the vacuum but the baby has a big caput, so it is not proper way'. [The Doctor replies,] 'Yes you are right' he says, 'I want to do a caesarean section delivery', and he got to do a caesarean [and after this] I am really happy, I just, I am thinking that I am strong, I am a good midwife. Mimi, Inf.11*

4.4.2 The graduate phase in becoming a midwife

The resurgence of fear -newly graduated midwives

Newly graduated midwives described returning to their villages and experiencing a resurgence of fear and trepidation about their role as an 'independent' midwife, without the support of senior staff working alongside them each day.

> *After graduation, immediately after graduation, I know in the College everything but in this health centre, I [was] afraid because it [was] the first time to work independently, because of that I [was] afraid first time Yemengushal, Inf.06*

Fear of possible complications

Fear of the myriad of obstetric complications which may occur, created a sense of trepidation in the newly deployed midwives.

> *In the first day, in the first time that I conduct… a normal delivery, actually we are two in the first time, I am afraid because, if something's happen, for example, if she, if she bleeds, I think a lot of things, complicated things… [Addis described thinking of all the possible obstetric complications]... [However] it was nice, I delivered, delivered normal delivery, so it was good, everything is good. Addis, Inf.05*

An initial lack of community recognition for the work of the midwives

The midwives found that most women in the rural areas preferred to give birth to their babies at home, even when there were problems:

> *In the beginning there is no labouring mother in this [health centre]. [No women are coming to give birth]. No attend deliver [there are no women coming to attend to for labour and delivery], all labour is attend[ed] by traditional birth attendant[s], delivery [assisting women] at home. There is nothing to do in this health centre Yidi, Inf.08*

The combination of the cultural traditions surrounding childbirth, a lack of awareness about complications, poor transport, poor infrastructure and a dearth of money to pay for services, such as a car if it were available, created a potentially dangerous environment. Most women presented at the health centre when they had already developed serious complications; this left the midwives often having to manage obstetric emergencies on their own:

It is a rural area, very remote area, and people want from delivering health centre [want to deliver away from the health centre] they want delivery at home. Because locally they believe [traditionally they believe that this is best] they don't want to [be] examine [examined vaginally]. They don't want to anything during labour [don't want any intervention]. As a result of this, many mothers die with [during] labour and [and in the] postnatal period and ANC [the ante natal period]. Tirunesh, Inf.07

Managing obstetric complications dominated the experiences and practices of the newly graduated midwives in the rural areas:

Ok, the first delivery (as a professional midwife) which faced for me it [which I faced] was breech presentation Abebech, Inf.09

The midwives were able to manage or refer women experiencing complications but were also managing grief and loss regarding the women they cared for, and their families, as well as their own personal feelings:

Once upon a time, she [a pregnant woman] comes with an IUFD [intra uterine foetal death] - At that time I [am] afraid. And she is fully [the cervix is fully dilated], she was fully, the station is high [the presenting part is high – the baby's head is not down in the pelvis]. The mother is very, very afraid at that time- after three hours, she delivered and she is sad and I was sad. Yemengushal, Inf.06

The newly graduated midwives found the experience of maternal death in their rural areas very sad and frightening. They also felt anger as they were now skilled and equipped to manage and care for women or refer for help when needed, but initially the community was not aware and resisted this:

There was a woman, who was delivering at her home and she was attending ANC at the health centre. We called to her during labour she must come to health centre [sent word to her home for her to come to the health centre when she was due to give birth] and in B…. [The village name], when there is her first delivery [when giving birth for the first time], she [the expectant mother] must deliver at her family's house [the house of her parents] which is the belief and her family take her to their home. And she give [gave] birth at home on Thursday and the placenta didn't come out - they bring her to the health centre on Sunday. Still the placenta didn't come out. And there is no blood. That is plasma [pus], ah…… plasma [pus], no blood. And the discharge only plasma [pus] at arrival of health centre. Before they arrived at health centre, she died on the road. And at that time we are new [to the] health centre. We are so angry and we are afraid. Tirunesh Inf.07

Peer support and supervision

Support of various kinds played a vital role in the healthy transition to becoming a midwife. Support was manifest in various ways, ranging from support by peers, the midwife supervisor and from the College in the form of visitation, accommodation, supplies and an ambulance.

The presence of a midwife peer was a source of encouragement and affirmation during the early stages of transition to professional practice:

One advantage that we have, we are assigned two midwives in the one site, and this is one advantage, being two is very vital or very important because if we are two we help each other. So at first we work together in the night and day and after we work independently. Addis, Inf.05

The provision by the College of a supervisor for the graduate midwives is a new initiative for Ethiopia. The Midwife supervisor is referred to frequently throughout the data as playing a major role in the experiences of the midwife graduates:

> *One day at one of the health centres, I was with one of my midwives, one lady came from [a] rural [remote] area with IUFD, intra uterine foetal death. We ask her history, we [are] strong together, we [are] stronger [it was good to support each other]. 'My child, my infant has movement before 1 month, after 1 month there is no movement' she said like that. So we checked [for] foetal activity and it was negative [heart beat]. Then I gave the work [she encouraged the midwife graduate to take the lead in the care of this woman] the midwife starting to work, to attend everything with the mother, to give, to assist, to give to treat the mother. And she starts everything, she takes history and she did physical examination. Then when she did PV, vaginal examination; 'Oh sister', she said like that, 'there is something [she can feel something in the vagina], maybe it is [a] cervical polyp?' she said like that. 'Is it?' I said like that 'is it [a] cervical polyp?' 'I think so, there is something. Show [look] please sister', she was in doubt, so after that, I check it….. It wasn't cervical polyp. Because the, the foetus was [had] died in the uterus before one month, it is [was] macerated.*
>
> *So I discuss with her; this is not cervical polyp, this is the head of the foetus, [the] macerated baby. Because of maceration easily collapsed the head [the head easily collapses]……… So 'don't [be] afraid, manage it'. I said like that, after that she was fully [dilated] and the midwife managed properly with me, because of that she learns a lot of things that time. She says to me at that time 'thanks to the College, if I had no midwife supervisor what can I do?' Hana, Inf. 13*

The Supervisor of Midwives was seen as an important source of support, on-going education and mentoring for the newly graduated midwives. The supervisor was able to facilitate an orientation into key aspects of their new working environment, such as encouraging them in community outreach work, setting up and preparing the work space and building confidence in skills such as vacuum delivery and managing a foetal death or multiple birth:

> *[The] Supervisor, she has three sites [she divides her time between three sets of newly graduated midwives] - And she helps [at] delivery [helps with birth] and family planning – [and] especially in outreach. In outreach visiting a church, [together with the midwives] she teaches [the community] very well about delivery, PNC [postnatal care], family planning, referral and health education - And she works with I [me, the new graduate]. We attend delivery and vacuum [using a vacuum device to assist a birth]. Yes, vacuum [mentoring during a birth requiring assistance with a vacuum] she helps very well. Yemengushal, Inf.06*

The extensive experience of the midwife supervisors was highly appreciated by students as well as new graduates. The Supervisor was able to facilitate an orientation into key aspects of their new working environment, especially the way they acted as mentors and role models in areas aside from clinical practice. They delivered encouragement and in-service education in skills such as vacuum delivery, and management of foetal death. They addressed issues of time management, team work, outreach and work place culture, expectations and conflict resolution.

Conflict resolution and the role of the midwife supervisor

The Midwife Supervisor worked with the newly assigned midwives to facilitate their relationship and integration into the wider Health Centre team which is in some situations was a little tense:

> *When we get [arrive] at first in B health centre, we didn't know the community [the other staff working in the Health Centre] and also we didn't know how to work and we didn't know the staff behaviour. Because [but] thanks to Hamlin College there is a supervisor, she has a practice, or an experience [in] how to work. When there was some confusion [regarding] how to work, how to achieve, and also how to live with other staff, gradually that is solved with sister [the midwife supervisor]. And now we are at good condition. Tirunesh, Inf.07*

The midwife supervisor played a vital leadership role in orchestrating dialogue and conflict resolution between the graduates and the local primary health care workers [HEW, health extension workers], who often felt threatened by the newly arrived midwives:

> *Before it was not smooth [initially there were problems]. The Health extension workers are very, very angry about the midwives. Because if the midwives came. 'Our work is not that much good, because the community believe on [trust] the midwives so they came to treat or to get medicine or something to the midwives. So we don't have any work and our work is maybe decreased because of the midwives' they said like that. They even quarrel with our midwives … After so many negotiations. 'If you have [a] midwife your work is easy [made easier], because if it is beyond of your capacity, you [can] refer to the midwives, the midwives [will] assist you… our aim is to serve the community, and your aim is like that. Our aim is together [to work together], [when we do work together] we did [can do] a good*

thing. So please discuss with our midwives… even our midwife [midwives] gave you some information; Good information [in service education] about neonate and mother even, so please don't quarrel with them' [I said]. After that they improve their attitude. So now its best, its better, even its best because they [the HEWs] have problem before; they didn't do normal [conduct a normal delivery]. They didn't know about the normal delivery [and the midwives mentored them]. Hana, Inf.

Whilst support from some staff was seen as encouraging and enabling, a lack of support and unrealistic expectations from other health centre staff was also experienced and this made the work environment very challenging. An example was given of a situation where health centre staff deliberately exploited the wording on a promotional brochure aimed at improving the use of maternity services at the health centre. They changed the wording to mean that the two newly deployed midwives would be able to work '24' hours every day and so, when any women presented at the health centre, the staff would call the midwives before they even assessed her, to see if she had a relevant condition or maternal health need:

I think [they do this because] there is a leaflet, there is a leaflet [and] it said '24hrs there is a service' they take that word and they implement on us. Addis, Inf.05

Supervision, liaison and resources

The midwife supervisor was seen as a vital link to the referral hospital, providing feedback from the hospital regarding the outcome of cases where midwives have referred women for care. Their role in advocating for the health centre midwives was also appreciated, particularly in the early days of the new graduates' deployment, seen here in an example where a referral case had not been taken seriously by the hospital based midwives and doctors:

One mother came to here. And there is foetal distress and poor uterine contraction. Then [we] send her [to the referral hospital] but she 'aged' in the hospital [she was left waiting for a long time]. The hospital staff neglect to give the bed [the staff did not admit the woman and therefore did not examine her] and sleep on that [the staff went back to sleep] but the doctor come [came] after a few hours and [after examining the woman] she see[s] [that] the baby is dead and she is [performed a] destructive removal. So when I tell this story to our supervisor she communicate[d] with the hospital midwives. [She said], 'because when we referred the mother, there is problem [the midwives had already identified a problem and they knew she needed urgent attention] and it need action and to consult the doctors'. The supervisor explained. After that [after the supervisor had spoken to the staff] our referral is good [is respected]. [The supervisor says] 'Get good aware (be aware) and take action - that [any] referral for [from Village] A…B…and C, give priority' this problem is solved by our supervisor. Yidi, Inf.08

Support and self confidence

The support from other staff in the health centre was seen by new graduates as very helpful during the time of adjustment to independent practice:

When I came first, ah, I am afraid to work independently, but after I contact [spend time] on this site…it's easy, because the staff are smooth, they are willing to work with us, so it was easy. I was frustrated because first [when] I was in the College and I haven't [the] responsibility to work independently, but [and] when I came back I am afraid to work independently but when we work [after some experience] at this site it was easy. Addis, Inf.05

Initially the midwives' confidence after graduating was overshadowed by the fear of working independently but peer support helped to alleviate some of the fear and stress of being a novice:

> *Immediately after graduation [I am thinking] I know in the College everything, but [when I start work] in this health centre, I [am] afraid, because [it is] the first time to work independently, because of that I [am] afraid first time [in the beginning] - Because of peer meeting and working with other staff I developed confidence. Yemengushal Inf.06*

Support and the enabling environment

Participants in this study identified that a major component of the support appreciated by the midwives was in the form of materials, such as antibiotics. Logistical support was also seen as important, in particular having an ambulance available in times of an obstetric emergency, requiring a referral to hospital:

> *Coming to start at this Health Centre, this is fulfilled; materials like antibiotics, ambulance - especially in the ambulance I am appreciate [appreciative] of the Hamlin College - When we write in a referral….when they go by themselves it is very difficult, there is no transportation access [but then after the ambulance is provided] based on that we call [the] ambulance and the ambulance come and take that mother" [to the referral hospital]. Yidi, Inf08*

The support of an ambulance

The ambulance was identified among the newly placed midwives an integral part of the management of some women with complications. Participants were very encouraged when they could see that the outcome for a woman with an obstetric emergency could be dramatically improved with the assistance of the ambulance:

The other main thing is the ambulance I can't express easily. I'm so happy and I'm so proud. How can I express it? I don't know. Because [for example] there was a woman, she has a PPH [postpartum haemorrhage]. I just prepared and after I managed her - and as soon as the ambulance reach[ed] arrived we send that mother. I will go with her...She received two bags[s] of blood and her life is saved. And the other thing is there is [a woman suffering from an abortion and she bleeds, she is anaemic, she can't talk, totally she is in shock. And after I give IV fluid, I call the ambulance, and [the] ambulance arrives within 40 minutes and I sent her and four litres of blood [were given to her] they said and I'm thankful, that is - giving an ambulance is very good for me… our ambulance it is free. One thing it that [it] is free and also it is fast. Tirunesh, Inf.07

Engagement and Ownership of midwifery – appreciating their skills

While fear was a common experience for the newly graduated midwives, recognising the skills and knowledge they had already developed as a student with relatively broad clinical experience was reassuring. Through their growing experiences as a professional, once again enriched by their engagement with women and their families, the midwives were able to 'recalibrate' their feelings from fear to confidence in the new environment of a rural Health Centre:

Yeah, the first delivery [birth that the midwife attended] was a normal delivery and, when we are [I was] a student, I attend 64 normal deliveries. Yeah, so normal delivery is simple for me. Tirunesh, Inf.07

New graduates spoke of the confidence they gained through having to manage a relatively high number of births as students, both normal and complicated. These

requirements gave the graduates a measure of self-reliance to practice in settings where many of the cases that they managed were complicated:

> *[One woman came from a distance] She is just coming for delivery [to give birth], I didn't know whether the pregnancy is cephalic or [not]. Just she [her cervix] is fully [10 cm dilated in the second stage of labour] when she came. Then when I prepare and when I see, when I do vaginal examination; she is fully [dilated] and it was [a] breech [presentation]. I am so afraid because in breech delivery, the head is… the outcome sometimes is; it may be stuck, I am very afraid, I [it] was only me, it was frank [a frank breech position] and it was Saturday [no other staff are around]. And so I am afraid but I remember that I learning and do the steps everything, as a student I was required to manage a breech birth and I remember all the steps to manage a breech birth. Addis, Inf.05*

Confidence and professional pride

Stories of confidence and success were entwined throughout the participants' testimonies:

> *Nowadays I communicate, I am self-confident, I know what I am doing and I know what not to do, I know Yidi, Inf.08*

As the graduates drew on their skills, experience and cultural awareness, they 'painted themselves' into the picture, as opposed to being outsiders looking in. The midwives described 'owning' maternal and child health care in their communities and seeing success as professional midwives in difficult and resource poor settings:

> *I am happy with this department and now I am working in my Woredas [village] now and I think I am doing very well. Brooki, Inf.10*

I give everything that I have learned for the mother [the mother who was delivering a baby in a breech position]. And then fortunately I am successfully conduct the delivery, I was very happy about that condition [the outcome], the mother also [was] very happy, and she kissed me and she says, you are my mother. Addis, Inf.05

As the midwives developed a reputation within the community for having good skills they started to find that difficult cases were referred to them from other health centres. This provided further encouragement and pride in the work that they were doing:

There is one day I am very proud of being [a] midwife, because one lady came from far area with a referral paper from another health centre to us, she was bleed[ing], she bleed, placenta was delivered, I delivered placenta, it was a little adhered, but I delivered [performed a manual removal of the placenta] . We remove completely, the family was very frustrated [the family were very stressed and upset], because they think she will die. I set [commenced] IV fluid; I gave antibiotics, everything, and everything fine, the mother is fine. At that time I am very proud because successfully I managed it. She [was] referred [to me] from a big health centre, but I can manage that complication. Addis, Inf.05

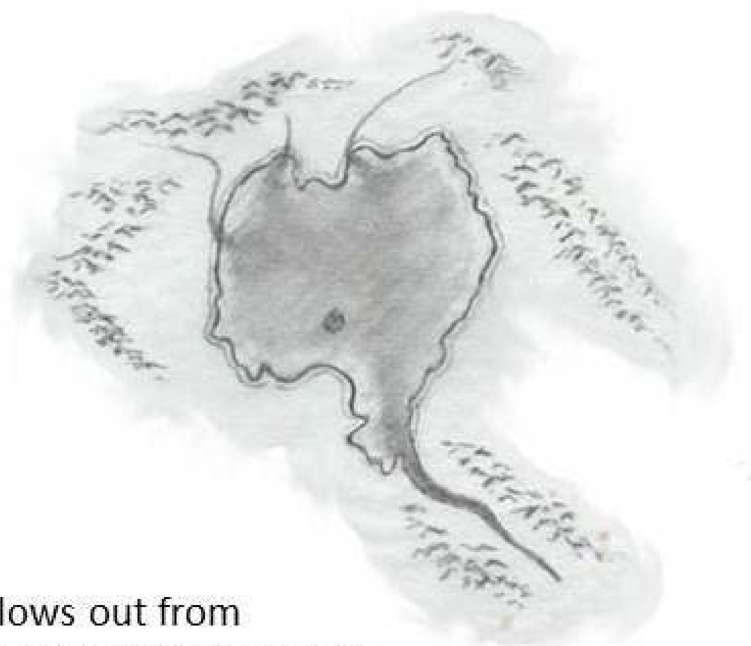
4.4.3 Summary

'Becoming a midwife' is an overarching theme that flowed from the early student encounters through to the deployment experiences of graduate midwives in rural health centres. The experiences of newly recruited students featured descriptions dominated by their own needs, fears and reactions. Through a process of early and regular clinical engagement the student's focus incrementally moved from themselves to the women they were caring for. By their final year, student experiences revealed greater empathy

for the women they were 'with'. They described having acquired competencies that gave them a confident foundation for working in rural areas as midwives.

A healthy fear of new responsibilities was outlined by the experiences of the new graduates as they began their careers in their local communities. Through engagement, community connectedness and support, they described emerging as confident, self-assured professional midwives, able to take initiative and bring about change.

Innovation and transformation



The 'Blue' Nile flows out from LakeTana bringing life giving water to rural areas and represents the flow on effect of **innovation, change and transformation** - graduate midwives realise their potential and begin to transform midwifery practice and their communities

Figure 8: Innovation and Transformation

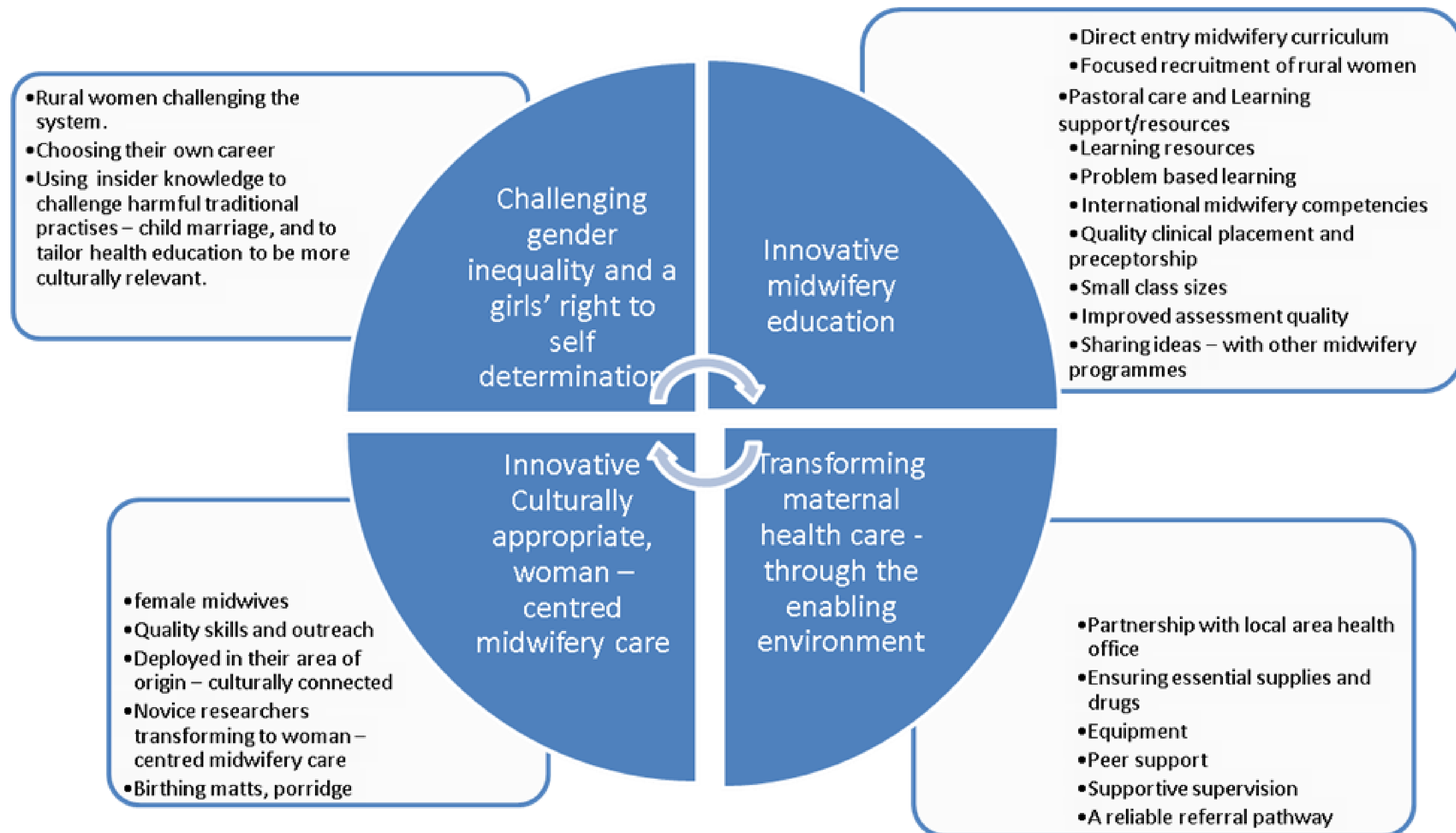
4.5 Innovation and Transformation

The third major theme to emerge from the data is one of innovation and transformation.

Examples of incremental change and transformation are outlined by participants. They describe their desire for change, and the opportunities to improve maternal health, challenging traditional social norms in their communities and harnessing opportunities afforded in their own culture.

Figure 8; represents the key findings for the theme innovation and transformation. Importantly the relationship dynamic for each sub theme is demonstrated in the centre – illustrating the flow -on effect that each of the findings have with another key aspect – such as the relationship between the recruitment of rural candidates and the proactive, culturally appropriate midwifery care that was evident in the practice of the midwives in their local areas.

Figure 9: Key areas of Innovation and transformation



4.5.1 Challenging gender inequality and a girls' right to self- determination

'Running the gauntlet' of avoiding early marriage in the pursuit of higher education was seen to require a high level of tenacity and determination in Ethiopia. One graduate then used this experience to try to change the practice of childhood marriage in her own community, encouraging families to allow their daughters to continue education and pursue a career as she had. She stressed the added benefit in that she now was serving her community

> *We give education about the disadvantage of early marriage …the new graduate midwife tells her story to the community 'My family want me married early and they bring the man to take me [arrange with another family without her knowledge that she can be abducted and raped by a potential 'husband'] but, I got away …then I go to school with him and he protect[ed] me from abduction and I learn [attend school] up to Grade 12. After that, I go to College … Now I am a midwife. I serve, I want to serve you; so early marriage is not good'. Hanna, Inf.13*

As outlined in the 'journey to midwifery', a girl child's opportunity to self-determination and education are under extreme pressure from family and socio-cultural expectations and practices, played out on a foundation of sustained poverty. Despite social and cultural pressure, these students dared to pursue their dream. Making the decision to go outside the 'system' required Abebech (for example) to face criticism from her peers

Instead of following the system and potentially working in a profession that they were not interested in, these women chose to follow an educational path and career of their

Many of the participants testified to being motivated to pursue midwifery at the Hamlin College because the deployment strategy of the College brought together their desire to

improve maternal health and the ability to return to serve in their own community post-graduation. The support and sponsorship for their education together with the passion to work as a midwife provides strong incentives for these midwives to return and 'give something back' to their communities:

> *I am thinking that my community sent me to learn and to help them after I finish my exam. They must get care, awareness and what I have I must give them and I must help with the situation, really I am so happy to help. My community and mothers do not get enough [help] before. I want to give [to them], I must, they must have this from me, and I am thinking that. Mimi, Inf.11*

4.5.2 Innovative curriculum in the education of midwives

The College transformed the curriculum development process for midwifery education by using midwives to develop the curriculum. Traditionally midwifery curriculum documents were developed by doctors, health officers and nurses and as a result the curriculum lacked focus on midwifery practice:

> *So the curriculum development is one part of, which I have, me personally, learnt a lot. And really, I'm proud of just being part of that curriculum development…. so generally, this curriculum, I think it is the only curriculum that is developed by midwives for midwives and it talks all over, from the first page to the last page, about midwifery. Abebe, Inf.01*

Abebe asserts that a midwifery curriculum that is developed by midwives with a focus on midwifery from the very beginning adds depth and integrity to the course – transforming midwifery education and potentially the midwifery profession:

The best experience is, I can say, is to start midwifery the first time [from the beginning of the course]. This gives high weight for the profession. And so again even, the students they start to communicate in the first weeks with the patients. And we start the first subject, we call it 'Key concepts in midwifery', they start to listen about maternal mortality, about complications, about the midwife boards… Abebe, Inf.01

Abebe goes on to state that the emphasis on midwifery from the very beginning, and the early engagement in the clinical setting, combined to thoroughly immerse and engage midwifery students and set them on a good path:

Professionally, when they leave the College, the profession is well in their heart and in their mind. That is why that is the best practice [for midwifery education] - midwifery in the first week. Abebe, Inf.01

Problem Based Learning – transforming midwifery education

The educational strength and transformative function of 'Problem based learning' (PBL) was a major theme and mentioned by 12 of the 13 participants. *There is a special course called 'Problem Based Learning' Abebe, Inf. 01.* Learning through the PBL approach was closely associated with a deeper level of understanding of the material… Self-directed learning skills increased through accessing resources, such as the library.

When students were required to share what they had learned, including clinical proficiencies with their peers, the development of skills as an educator improved. The students and graduates attributed a boost in their confidence to their participation in 'PBL'.

Students were challenged by the PBL methodology; it was outside their previous learning experiences. Initially students had a great aversion to the PBL methodology, with descriptors such as 'hate' and 'anger' being used. Tirunesh and Brooki expressed their reaction to this approach to learning:

> *At the beginning when I hear this type of teaching, I hate it … because it is new for me and I think that if I found always that thing, why I need a teacher? I said, and I disagree with it. Tirunesh, Inf.07*

> *When this learning process was started I'm very angry or I am very sad. Brooki, Inf11*

The students testified to feeling overwhelmed by the challenge and responsibility of locating library resources for themselves, and as a team, when working on particular scenarios:

> *From the beginning it is difficult, because we are [do] not know about how to prepare the lecture notes and how to find the topic [they did not know how to use the library resources independently], based on before [their lack of experience in a library] the beginning is difficult. Yidi, Inf.08*

Initially PBL was a very difficult educational concept for both staff and students to accept. The self-directed, problem solving approach of PBL was also new and confronting for the staff of the College. The introduction of PBL was met with strong resistance from the students and this was supported in a covert way by many of the tutors.

> *It was also very difficult for me at the beginning… Because it is not the style of learning [that] I passed through. Usually, what we expect in big Colleges and*

Universities [is that a] tutor stands and give [a] lecture and give everything [such as] notes and the students read [the] notes and they come for exam. But the problem with this learning is, it is student centred and it gives more responsibility for students as well as also for tutors. Because the tutors are the facilitators, they have to check everything [to ensure] the process is going very well. It was a challenge at the beginning. And there was [were] also riots [protests] by the students and just at the back supported by the tutors. Abebe, Inf.01

A major source of apprehension for the students was the peer to peer educational aspect of PBL. Students were required to study and understand the full scope of a topic to the point of being able to deliver a lesson for their peers. Students talked about not feeling able to present and talk in front of their peers, as culturally girls are expected to be shy and softly spoken:

When we prepare our lecture [lesson for their peers] the first time I am afraid to give education for other and when we stand in front of other, I am shaming [feeling very shy] not talk loud [not able to raise her voice]; it is difficult. Yidi, Inf.08

At the beginning it is difficult, because we are afraid talking with [in front of] many people and with preparation we have not more [we don't have a lot of] experience [carrying out self-directed study on a topic]; we think it is more difficult. Frehiwot, Inf.03

The process of applying the PBL method, working on a case study, and preparing a presentation that was given to their peers, brought about a remarkable change in the students. They gained confidence in their approach to learning.

After [we] come through [applied the PBL method] it is easy and interesting. We can prepare, we refer [to] different books and we can ask our teachers [for assistance and support] and it is easy and interesting. Frehiwot, Inf.03

The problem based learning approach was identified as providing opportunities to develop skills as an educator and in public speaking:

After time it is a useful of learning process, especially for me, I think it helps. For me it helps looking for the many students [public speaking] or for the people are talking after the students [it helps to prepare me to take questions] before the students stand and talking prepare any notes [the preparation in the team – brainstorming, gathering information and preparing a lesson] and it develops a very good [provides a good experience to develop my] confidence to stand in front of the people. Brooki, Inf.10

The graduate midwives expressed appreciation for the development of presentation skills. They found these skills particularly useful when providing health education to the communities where they were deployed:

To learn [teach] other peoples [and] to give health education in front of the many peoples, it [PBL] was helping, but at the beginning it is very difficult, and all students were not happy, but after the time [after participating in the PBL process] it was a useful process" Brooki, Inf.10

The students also acknowledged that PBL offered opportunities to build team work as each group of students worked together on a topic and presented that learning topic in an interactive style to the rest of their peers:

We are sharing [working as a group] and we are preparing the PBL and we present … for other students. The tutor, they follow us in the class. They are attending our presentation class… even if there are guests we are presenting our PBL class and they are asking questions. Brooki, Inf. 10

The students found that the process of self- directed problem solving and scholarly study required by the PBL approach improved their understanding and memory retention.

After I see it and after I do it [follow the PBL method], it is good for us ….. Because I can't forget it! Since now I can't forget it. Because I am stressed and I also give emphasis for it [spent a lot of time on it] and I can get many things from it, so it is good for the future also. Tirunesh, Inf.07

I understand always and I [will] not lose that, because of that case presentation [applying the PBL method] and read the management (study and prepare the topic) that is by ourselves [self-directed]. Yidi, Inf.08

Students and graduate midwives believed that they would not have reached the same depth of knowledge and understanding by using previously experienced learning methodologies. Aside from these educational benefits participants also believed that the PBL approach developed their sense of responsibility. Both staff and students became advocates of the PBL approach to learning:

Then, fortunately, things were settled, and at the end the main advocators were the students. They said, 'if we were not teached [learning] like this, our knowledge [would] not [be] where it is now'. It was a challenge, personally for me also a challenge, because …what I knew [is] just teaching at the university means giving

lectures, giving notes, preparing exams. That is why; it was a very challenge [challenging time]. But thankfully, now I'm one of the advocators of the PBL Abebe, Inf.01

This process was very good I think, [it] increased our knowledge and increased our responsibility. Yidi, Inf.04

The participants found that the PBL approach was compatible with learning both theory and practical skills. The nature of the case studies and scenarios that the student groups worked on were relevant, appropriate and prepared them well for clinical placement and deployment:

Just what we are learning in PBL theory [course work] we faced [experienced] a lot of [the same] things in the clinical area, especially in Attat and Yekatit hospital[s], we are getting great things. After we finish the PBL class we enter to the clinical practice in hospital, we faced many complications things that we learn in theory…..we are faced [felt confident to manage] in a real situation. Mimi, Inf.11

Through participation in the PBL learning process in a supportive environment, the students and graduates testified that their feelings of confidence in sourcing, understanding and sharing information as well as their skills as midwives were increased:

After a few times I am confident and I am talk loud and I am [able to] teach and accept what I am saying [have confidence in what I am saying/teaching] and … we [know] how to have [manage] a question … when It come [the question comes] I answer that. Yidi, Inf.08

Support and encouragement from tutors was also mentioned as an important part of the success of the PBL approach:

> *When I cannot [answer the question] I transfer to supervisor [defer to the tutors] and that increase our confidence [in the PBL process]. Yidi, Inf.08*

> *Our confidence increases because it is more practical… And if there is any doubt, any problem our teacher is with us at that time Desse, Inf.04*

Pastoral care and learning resources and learning support

*S*tudents testified to relying on the support of tutors in the College particularly when they first arrived from their rural areas. The tutors provided support for the students' transition to university life but also when the students were adjusting to being away from their families and rural communities. In Yidi's testimony she described the relationship between students and tutors as being like the relationship of a mother and daughter:

> *Our lecturers in the Hamlin College see us [as] 'my daughter'… [they are like] my mother and my father. The relationship is very close, because we can communicate freely with our lecturers, based on that I am confident. To compare with other [university] even one lecturer can enter- give hand out… teach any something, there is no other relationship, give and go out. In our school [the tutor] give health education [lectures and clinical demonstrations] and teach that topic. Even 'freedomly' [freely we can] ask our supervisor [tutors, preceptors]. Yidi, Inf.08*

The participants commented on the availability of the tutors as well as their appreciation of their level of competency and experience as midwives:

They (students) can access their tutors – the whole day. So, especially the teaching-learning activity, it is a good way in our compound, and the tutors have also medical/ clinical experience plus they are midwives (all the main/full time tutors are experienced midwives). Abebech, Inf.09

Students and staff also appreciated the availability of library resources because the Hamlin College library was accessible to the entire student body all of the time, unlike other libraries in Ethiopia.

The readers [students and staff] can access any resource in the library freely [any time and without cost]. Mesfin, Inf.02

When we compare with another university…it's difficult to get…book[s] - one person will [can] use for one hour one book in [the] library, but here it's very good. If I want, I can use for hours and it is comfortable …it works well for us. Frehiwot, Inf.03

Not only did the open access of the library afford opportunities for students to maximise their learning, Mesfin testified that this also provided opportunities for students to develop their level of accountability. Uniquely for Ethiopia, students in the Hamlin College were given keys and were able to access the library and the computer centre, day and night. Mesfin expressed a belief that this was important for the students because being a midwife was a 'big job' and much would be expected from them:

The College [provides an opportunity] for the student to develop honesty here, because outside this environment, – a big job they expect from them, they have the key to the library, and… the computer centre; they can access the internet for 24 hours, they can access books, journals, any resource which is found in the library

for 24 hours We have a bi-annual inventory when we check … for the purpose of the College… since[the] beginning till this day; there is no book loss or…material loss. Mesfin, Inf.02

Mesfin stated that, open access to library resources provided improved educational opportunities for students and made them 'strong' academically:

[Restricted library access] … doesn't encourage the students to research more and more resource. When you come to …the College case, the shelf is open for the user; they can access everything, they can search whatever topic they want to read. So, this… service makes the students strong, and to read more; I think they are lucky. Mesfin, Inf.02

By addressing a previous lack of access to resources and by providing appropriate support and orientation, the College transformed the experience of education for rural students:

All of our students are from the rural setting[s], and they have no exposure [no opportunity to use a library or a book.]They can look, every book…But the problem is how to use the books...I guide them to use the search index, how to find a topic from a particular book and how to find something from the book. Mesfin, Inf.02

Smaller class sizes

The small class size in the Hamlin College was seen as an advantage for the midwifery students. Students and staff believed that the perceived small cohort size fostered a positive learning environment. It was an environment where students felt free to ask questions, and tutors were well able to understand the progress of each individual:

[There is] no fear [the environment is not intimidating], the student is minimum [small cohort] and group discussion [is more feasible] and they [peers and tutors] see and know, one by one [each individual] what [how] I am going and it is simple to get education than [compared to] other university Brooki Inf. 10

Improved assessment quality

The College challenged the quality of the assessment process by changing the way examinations were written as well as by introducing transparency and accountability in the examination process:

In my experience in the other universities usually they have written examinations and they are packed with multiple choice questions. And, even sometimes the students are directed which area to focus, which is completely unethical and unacceptable. And also the questions are not asking critical thinking. …And one very important thing, there is no [assessment] for clinical practice [in other universities] any students sit for 'check out' exam [a pass/fail for clinical skills prior to commencing clinical placement]… So, [in the HCM] 90% of the exam has to be in long sentence and written questions [answers].There is cross checking of the exams. Abebe, Inf.01

Midwifery competencies – transforming preparation for professional work

The College changed the learning process for clinical skill development by introducing a competency based learning approach with simulation and a 100% pass as a pre-requisite to clinical placement. Participants placed value on the requirement of needing to achieve a level of competence prior to commencement of clinical attachment.

Before we go out to the hospital the right person [prepared and ready] we should [be] perfect by practicing all the clinical practices [by simulation] in our College day and night. It was free [open access], every equipment was with us and everything…to help [us] with clinical practice... So after we practice by [with] the doll for example …after we become perfect [competent with the models] then we will go to clinical practice. So this helps us develop our confidence, our skill and knowledge. So this was very nice time. Abebech, Inf.09

Participants described working with each other with role play and peer assessment prior to skill examinations:

All the night and all the day… [we] demonstrate…we are correcting with the checklist… Before each other [practicing peer to peer]… Now [during the skills exam] the tutors are following us by checklist, when we are managing correctly with this demonstration exam we are passed through to the…the clinical practice. Mimi, Inf.11

Students were able to re-take the clinical assessment multiple times if necessary:

And this is another very important [thing]...which I like; clinical, practical check- up exams. So students, before they go to the clinical area, they have to show that they are competent on models and dolls…The students might sit 5, 6, 7, 8 times, until the examiner says satisfactory. This is very important. Abebe, Inf.01

Abebech spoke of a system of clinical skill development that was interactive for the students. Students were motivated to practice skills with peers, using a skill guide and checklist. Abebech's account students developing clinical competency demonstrated the development of critical thinking as students gave each other feedback:

First we will learn about the practice and they will give us a check list and after we have the checklist we practice different things on the checklist. The main thing is the number of the students was very small so we can participate on that thing…in a short time. Then turn by turn [taking turns] we would follow the one student [each other] until she finished the whole process for the practice and then finally we would give her a comment [feedback], … and the next day when she practice that skill she will become perfect and finally after we finished this practice…we will have an exam by our tutors … If the person did a mistake they will have a comment, 'like this, this,' [they say] so we will know by the comments and by the exam. Finally after we become perfect they decide to go out the clinical practice. Abebech, Inf.09

Many midwives in Ethiopia learn their 'clinical' skills following graduation. They may arrive as the only midwife in a health centre with very little experience. The Hamlin College ensured that all graduating midwives had a reasonably broad range of experience in managing both normal and complicated birth as well as family planning, antenatal and postnatal care:

Still I can say that most of the graduating [students] from different universities, they don't have enough experience and enough skill, just to manage complications, and even just to attend normal deliveries. So because I passed through that, I don't want this to happen to another and also I want to contribute my part. Abebe, Inf. 01

They are lucky [the HCM students] they get good skill from the College …when they are students they get a good skill from different hospitals and health centres. As we compare with other midwives they are better, the Hamlin College of midwives are

> *best midwives are best midwives as compared with other midwives… they have good skills, Hana, Inf.13*

Transforming the quality of clinical experience

The College transformed the quality of clinical placements for students by ensuring that they were always accompanied by an experienced preceptor. In the participants' experience's they were the only students who were accompanied by a preceptor:

> *[Our] skill is good and even [our] self-confidence because this is coming from our teachers, our techniques. Most of the time, another university or College, when the students go out [to the] hospital or the health centre… [they go] without a supervisor [preceptor]. Our skill is coming increase, our skill is exceptional case, [it] is our College is transfer [it is due to the way we have been taught]. Yidi, Inf 08.*

With growing confidence and a solid foundation educationally and clinically, the midwives were able to be advocates and innovators for change. Third year students showed concern and could not standby quietly when they saw practices that were incorrect and unsafe:

> *The other midwives… [their] manage[ment], it is different from us. We are taking the theory part, the learning in proper way, but when we are in clinical area there is a great difference. They are not doing in [the] proper way…'we are learning just like this'. 'This is not right, your work is not proper' we are telling to them without being afraid but I want to do how I am learning in the College. Mimi, Inf. 11*

The midwives developed confidence to apply what they knew and could justify their practice choices: The students are able to defend their practice even when questioned by a doctor, whom they feel has less experience than them:

Just there is one good example. It was in Mekele Referral Hospital. One of the midwife students, now she graduated, she was filling the partograph and there was an internship general practitioner student, and he came and said 'your partograph was not properly felt [filled]'. Then she said, 'I felt [filled] properly, everything is right and [there is] no mistake'. Then they started to argue with the GP. He said, you have to... [do] this. . Then she said, 'I don't do that because, I'm not taught like that. This is the right way'. Then he said, 'you have to do, I'm a GP'. She said, 'no, no, no, I'm right, I don't do'. Then finally, the GP just left the room and the gynaecologist came. When he saw the partograph of the midwife, perfectly filled … he decided based on the partograph the next management [for the woman]. Abebe, Inf.01

Preceptors – improving the experiences of clinical placement

Abebe found, that when the staff and students of the College worked hard together on clinical placement this won the respect of the staff in the host facility. Abebe believed that a good reputation and the presence of the preceptor facilitated the student's interaction with clinical staff, optimising the clinical experience.

When our students are going to the clinical areas …because of overcrowding… sometimes there is jealousy between universities and particularly with the Hamlin College of Midwives. So that sometimes there is difficulty. But usually, we win the confidence of the staffs, the hospital and the health centre, because of good performance of the students, as well as the presence of the tutors. Just it creates a good environment for us. Abebe, Inf.01

Abebech talked about the importance of being equipped when on clinical placement in order to safely fulfil all the necessary scope of practice:

> *This College [has] many differences…from other Colleges. One thing is… the preparation before clinical attachment. That was makes us happy, to differ from other, because there was full equipment [supplies to take on clinical placement]. Every equipment was handled in the College. Abebech, Inf.09*

Sharing ideas for improved midwifery education

Abebe described the positive impact the new educational model was having, particularly in regards to competency based assessment of skills in the wider academic field. By participating in meetings and workshops for midwifery educators and sharing the initiatives of the College, Abebe felt that the HCM was having a positive impact on other midwifery programs:

> *Recently, by the way, I was in one meeting, in Nazareth, it was a meeting organised for another [many] universities, about evidence based midwifery practice and I raised this issue [competency based skill assessment], and all the universities were very interested. 'We want this to be implemented' they say. So they were asking me a lot of questions, 'How we are doing it? What are our procedures? How do we select different procedures?' And about assessment, 'what is the criteria? What makes the students pass? What are the things that make the students fail?' This issue was top priority and it was a top discussion point. Abebe, Inf.01*

Abebe also testifies to the poor practice of other universities and competency of midwives:

Yes, everything [in another university] is written black and white. Practically, is different. As long as you pass your theoretical examinations, practice is, no-one is giving attention. Even the instructors are not also coming to the hospital.

An instructor from University [x] was assigned to just follow students for 2 months. That is their last clinical attachment for this graduating class. The tutor, he was responsible to teach 20 students. There are around 8 midwifery students and 12 nursing students.

Immediately, what he did, this instructor, he signed an agreement in private College, to teach for 2 months. Every morning, he come, just he count the head of the students, then he didn't come the whole week, because he was teaching in private College, making money. So, maybe he give false recording to university in the end. The university, they have a lot of good rules and regulations, forms, but nobody is implementing that. This is what happening. Abebe, Inf.01

4.5.3 Enhanced midwifery deployment through the enabling environment

The College's unique ongoing relationship with the midwives and the local health office manifested itself with an augmentation of the supplies, facilities, supervision and support. The Graduate midwives also received access to an ambulance, to enable them to carry out a more comprehensive and safe midwifery service:

It is very nice because the College, they helped us with infection prevention, with blankets. There was no mattress; there was no blanket, no pillow case, pillows, and medications, the main important thing, many medications, and also the ambulance. So this helps us to solve our problems, and the community [is] happy and when we give health information, we inform them full of confidence… We have an ambulance, if there [is] any complication, you go to M, regional hospital so this help

for the HCM midwives it is very important for us, it encourage us, to enhance our work, to develop our work in our deployment area. Abebech, Inf.09

A reliable referral pathway

As explained earlier, the provision of a reliable ambulance service was seen as a significant addition to the breadth of the service that the midwives could offer to the community. When a complication was beyond the skills of the midwife she was able to manage that complication and in most circumstances follow through with a timely referral to the next level of care. The provision of an ambulance increased the confidence of the midwives and increased the community's confidence in the midwives and the health system:

The other main thing is the ambulance…I can't express easily. I'm so happy and I'm so proud. How can I express it, I don't know. Because there was a woman in August, I just prepared and after I managed her the ambulance reach (the town)…within 40 minutes. We send that mother and I will go with her to [the referral hospital]. She received two bags of blood and her life is saved… Tirunesh, Inf 07

The midwives experienced initial resistance to referral from the community because there was a fear that this would always result in surgery and often in the death of the mother. Referral had previously meant that the families were told to leave the health centre with the woman and 'find' transport to the regional hospital. After some time the community was able to see the work of the midwives identifying a complication, stabilising the woman and then facilitating her referral by ambulance:

The other story is, totally the community didn't want referral, because they assume that there always CS (caesarean section) or is an operation, totally or there is

death. But after, gradually, after they see when women give birth they are alive, they want the ambulance. Brooki, Inf. 10.

The provision of an ambulance gave the midwives confidence in their management of women with serious complications. Improvingmaternal health outcomes, transformed the community, from fearing intervention to trusting the midwives. This is manifest in the one community where the ambulance is named 'life':

I don't have words to talk more but I want to talk something about the ambulance...The community in one town they said 'life'. Her name – of the ambulance is Life... Huwat, they said like that 'huwat, huwatmetach, huwatmetach' ['life is coming'; 'life is coming', when the ambulance arrives in the town]. Hana, Inf.13

Peer support

Peer support through the placement of midwife graduates in teams of two was also a change in the way midwives were deployed. Previously this has been one midwife to a health centre. Teams of two provided a significant amount of support and camaraderie for the midwives:

… We are assigned two midwives in the one site; this is one advantage, being two is very vital or very important because if we are two we help each other. Addis, Inf.05

See full quote in previous section 4.4.2 under Peer support and supervision, page 114

Supervision

The provision of a supervisor regularly visiting and working with the midwives was another new initiative for Ethiopia and one that appeared to be important to the

support and success of the newly graduated midwives. The supervisor of midwives provided a hands-on mentoring and in-service education, facilitating the relationship of the midwives with the local health staff, as well as 24 hour practical advice and mentoring via a mobile phone:

> *They ask every question. If they have doubts they ask by telephone even, they ask by discussion. So they are lucky they have supervisor even, Hanna, Inf.13*

> *And even our supervisor attend and keep [mentor] their students [the new graduates] to 'do this; don't do this' so that skill is good. Yidi, 08*

The supervisor of midwives was also able to provide advice and facilitate conflict resolution between health staff, when the arrival of the midwives was seen to be a threat to health extension workers:

> *At that time when we start our work, we need a [the] health extension worker. Because health is a team work I think. When we go to a church or other things, to give health education, because we are new for this community, [we ask] 'please go with us' we said to them. And they said that 'we can't go because when we [you] did this work, we are unemployed', 'they assume. Then there is a conflict with that. The supervisor [talked with them] and after that they agree [to work together]. They know what we are doing [and] then the conflict is solve[d]Tirunesh, Inf.07*

4.5.4 Community engagement for improved maternal health care

A female midwife

A strategy of the College was to only recruit women to be educated as midwives for the rural areas: the staff and students see that this is more culturally appropriate for maternal health care in rural Ethiopia

In our country, women …don't come if there is a male midwife. And, just recently, I identified, women, are not coming for health service …because they don't want to be cared by male professionals" Abebe, Inf.01

The big thing is, that changes many women to come to our health centre, first we are females and they think that we are the same, mother think that we are the same. She is female, so mothers talk clearly [freely] what they are feeling to us Tirunesh, Inf.07

The local midwife

Participants identified that, when there is the option, women will choose receiving care from a midwife who is from the local community. Where there is no such option the participants believed the utilisation of services was poor:

Because if we go to Somali region, if a female Somali midwife is there, everyone is going to her, because she know the culture, she know the language, she know what they want. If there are two midwife, one is Amhara [from the Amharra region] one is Somali [from the Somali region] most [women] they go to [the midwife who is] Somali, Abebe, Inf.01

Cultural connection

A concept that weaves its way through the data is that of cultural and community identity and the mostly positive impact this had on the practice of the midwives in their rural area. The midwives expressed happiness and satisfaction at being able to 'help' serve their own community. The growing ownership of the midwifery profession by the newly graduated midwives became intertwined with a sense of ownership for their community and the women they served:

Yes I am from this town and I help my community. I know [the] culture, [the] language; because of this I'm happy. Yemengushal, Inf.06

Being in the community, it has its own advantage, because the community peoples know you, so if the community knows you easily they communicate with them and saying freely everything they want. So because we are born in this area and working in this area the peoples are know me and I know them so we give service with them in smooth relation, because we know each other. Addis, Inf.05

The midwife supervisor spoke of the importance local dialect and the strong connection the midwives had developed with their own community:

The midwives are…from that community, they have the same language…of the community even [even the specific dialect], and they know the attitude even of the community. They know everything about the community…that is the best thing because they, they go to Hamlin College from their community and they come back and they served the community. Hana, Inf.13

Having a connection to the people in their community fostered openness and a sense of ownership on the part of the community for the midwives. The familiarity encouraged a strong commitment and personalised approach to the work of the midwives while also nurturing a continuity of care approach.

Being a [midwife and] doing [our work] in the same community that we are born is [an advantage] that we know the culture. Everything we know [about] the people because we are born from this people. [This] is [an] advantage and they can talk openly with us, and even they are calling [us] by names and if for example they are knowing [if they are known to them personally i.e. childhood connections and

friends], or if they have mobile they take mobile number and when they want us, they can call… [There was one woman and] she was pregnant and I follow her throughout [her] pregnancy. Unfortunately I am not here on that time [she presented to the health centre in labour]. But my peer midwife is here [however] she knew me throughout the pregnancy and she wants me to deliver her baby. At the night time when the labour starts, she calls me and wants [me to come] to deliver her, so I was near, I came and delivered her! Addis, Inf.05

Understanding the local farming culture enabled some of the midwives to tailor their family planning health education, by using a local teaching related to the successful cultivation of corn by placing the plants a good distance apart and using this as a metaphor for child spacing in a family.

'The corn gives good product, like that (gesturing with her hands to show a wide space between plants), if you give space in between your child [ren], the child [ren] grow very well. Their hands they clap for us. 'Such Good teaching, we get a lot of things from you, so from here after I send my wife to take family planning'. Hana, Inf.13

A disadvantage of living in the community

Some participants identified that there are also disadvantages to being well known in the community, including the pressure that midwives can be put under to give their salary away, and to give some medications that cost money. Their acquaintances may expect services for free or ask that the midwife pay for it for them:

Ah because sometimes the peoples knows you, they want [you] to give [them] some things, for example, we prescribe medicines, to get it they pay birr [the local

currency]. They want birr from you because they know you. Sometimes they understand but [we] need [to be] careful. Addis, Inf.05

Proactive problem- solving approach

Initially the midwives were frustrated with the low numbers of women accessing the services at the health centre. Firstly the midwives identify that there is a problem;

We have a skill, we have knowledge. How can we implement this thing if there is no labouring mother, if there is no work? Abebech, Inf.09

Outreach for improved awareness

In response to the poor uptake of health centre services, the midwives initiated a program of community outreach. This strategy raised awareness, by conducting health education where people lived. The midwives walked great distances where there were no roads. They visited open markets, schools, churches and community groups. The outreach enables the midwives to raise awareness and provide health education but it also served to enhance the midwives' connection to the community and community health workers. The midwives also provided support for the local health extension workers, through in –service education and training.

And when we see this, it was so ugly [remote, harsh] and we give health education about two hours walk from the health centre. It is so difficult to walk at that time [to cover all the area]. We start [in the health centre] in November, then [in] December it was five deliveries [births]. At [by] January it was fifteen deliveries and now I think it is 187 deliveries. Tirunesh, Inf. 07

Before when we come [to] this [place] there is no are no maternal and child [health] cases. After that when we come …we get support [and] they [the community attitude] exchange [changes]. The community got health education and the church meeting [and] we meet with health extension workers and [as a result] the labouring mother (the women in labour) come to deliver (give birth) in the health centre. [We] attend labour…and [now we] see a good [number] of maternal health [cases] now, Yidi, Inf.08

We went to community [to] visit to postnatal mothers on Saturday and Sunday even out of the work time … and we walk around 4 hours by foot out of [from] the health centre to give health education, we went to the market and the churches to give our information … after big effort, the community… develop awareness, and now it is good, now it is very nice. Abebech, Inf.09

Novice researchers

In response to the poor utilisation of maternal health services at the health centres, the midwives developed innovative strategies to firstly understand more clearly the reasons the community were not coming and secondly to transform their practice to make it more attractive to women. Following an initial period of community outreach with some change in the number of women coming to the health centre, two midwives used their novice research skills and prepared a questionnaire. They then proceeded to door knock in the community to seek further understanding as to the particular barriers that women felt prevented them from using the local health centre:

It was very difficult, we should go walk to the community, 'why delivery mother, labouring mother didn't want to come to the health Centre?' And we discussed with

the head of the health centre and finally we prepared a questionnaire and we go out to the community, then the flow of work was a little bit increased because … the community got a little bit awareness about that. Abebech, Inf.09

Woman-centred, quality midwifery care

The midwives found that their care became more woman-centred and this was appreciated by the community and increased the community's use of the health centre.

One thing, we give woman-centred care, the other providers do not apply that…Most of the time we are successful, if the…even if there is complication we manage. The families they are afraid because [they think] she [will] die, but after she came and she saved and we send her home, they are very happy. They distribute the information to the other communities. The other communities come and they get care from us, because we give women friendly care, we give quality care as we can. Addis, Inf. 05

The midwives raised the issues uncovered by the questionnaire with the management of the health centre and began to implement some changes to the way women were cared for during birth and in the immediate postnatal period.

Preparing the traditional porridge for a mother after the birth of her baby

We should prepare porridge because the mothers they give this feedback in our questionnaire. We discussed with the management committee and they all agreed and decided each staff members should deposit three birr (Ethiopia currency) per month and then we inform the staff members and finally they agreed. And we discussed with health extension workers to help us by collecting flour from the household, now it is good. We …know the importance of this program, the mothers

are happy and even the community becomes happy … 'it is good because you are respecting our culture and our belief and so this is changed from the previous time and now we will come to give birth in your health centre' now they feel like it is good…

After she [a woman] gave birth 'please, please prepare the porridge' and … [the family say], will prepare and they will give her immediately after she shifts from the labour ward to the postnatal room after this finished the mothers will discuss [chat with] each other, this increases the chance to have good discussion, mother discussion and the family, they will dance and they will sing, it is a good time, to see the process. Abebech, Inf. 09

Creating a more woman friendly birthing environment

Another finding from the survey was that women did not like to give birth on the health centre 'delivery couch': Aside from the mandatory placing [or hanging] of a woman's legs in 'stirrups' the midwives found that women preferred to avoid the 'couch' or delivery bed altogether and were much more comfortable giving birth on a mat on the floor and in a squatting position.

It was one problem [mostly], it was because of the delivery couch, 'the midwives hang our legs' so this was a bad practice for them. Abebech, Inf. 09

The midwives found that the women in their area were much more comfortable giving birth on a mat on the floor and in a squatting position.

Most mothers want to give birth on the mattress on the floor like at home; this was also one problem [barrier that they identified]. We prepared a mattress so when they come to give birth [we offer] 'do you want to give birth here or on the

mattress?' we ask and it depends on their choice ... the women they may feel like she was treated in her home, she must feel she is in her home. Abebech, Inf.09

In another health centre midwives' initiated similar woman centred programs to attract and accommodate what was perceived to be important to the women in that area:

As we learn [have learnt], women can deliver on her choice. The position is not matter for us. So in local area, squatting position is good for the woman. And she select the squatting position …not only squatting position, what they want to what they want. It is her choice. Tirunesh, Inf.08

Role models for woman- centred care

Once the graduates had introduced choices for women in childbirth, they then modelled this to the other staff in the health centre.

Yes [the Health centre staff are also now allowing a woman to squat in birth], because they get experience from us - Yeah, after we get at the delivery room, they share experience from us [they learn from the HCM midwife graduates]. Tirunesh, Inf.08

The midwives applied evidence based reasoning to justify the transition to a woman centred approach to birthing;

The first thing [is], the relationship in science [evidence]- *there is no change or there is no damage or there is no challenge because of position. Tirunesh, 08.*

The midwives discussed with the other staff that there was no evidence to show that this was harmful to the woman. They also reasoned that when they made the service more culturally and woman friendly, more women would use the service:

And the other thing is, if woman choose her own position, for the future… more woman will choose to come to the health centre and deliver. I'm so happy, I am so happy at that time. Tirunesh, Inf.08

4.5.5 Summary

The third theme that emerged from the experiences described by the Hamlin College staff, students and graduates, is one of innovation and transformation. Each midwife discussed a process of transformation from within, ultimately challenging the socio-economic, political and cultural perceptions of a woman's role in society.

Each midwife student and graduate interviewed was a woman from a rural area who had broken through the cultural bonds of traditional roles and expectations to become educated, professional women. Their testimony describes a process of embracing self-determination and significantly contributing to their community beyond the traditional roles expected of them.

The graduate midwives, described how they began to transform midwifery practice in rural Ethiopia at the grass roots level. Strategies included the welcoming of family members into the birthing room, involving family for more culturally appropriate postnatal care, and going outside the health centre 'comfort zone' to hear from women about what is important to them.

4.6 The Quantitative data

This chapter presents the findings of maternal health activity from five primary Health Centres where Hamlin midwives were deployed in November 2010 in three regions of Ethiopia. Qualitative data were collected from Hamlin midwifery graduates working in four of the five health centres. The maternal health activity data were collected for the 12 months before the deployment of the Hamlin midwives as a baseline. The post deployment data were sent at the end of each month by the Midwives to the Hamlin College of Midwives as well as their local health office. Data collected for the first 12 months of deployment were compared with the baseline activity. Four health centres (A, B, C and D) were staffed with two (2) Hamlin College midwives commencing end of November 2010. The data collection period was from November 2010 to November 2011. Health centre 'E' was staffed with three (3) Hamlin College midwives for the same period and then Two (2) after 2011. With only three students graduating from the target area of health centre E it was decided that the graduating midwives work together in Health centre E rather than placing one midwife in another health centre on her own.

4.6.1 The Health Centres

The health centres in this study were all staffed (not necessarily with midwives as part of the team) and functioning prior to the deployment of the Hamlin College midwives however. Typically retention of staff in the rural health centres was an on-going issue. Health centres A and B had not had midwives, or other staff assigned to work specifically in maternity before the deployment of the Hamlin College midwives. Prior to 2010, the maternity work in these health centres was covered by nurses and health officers who were also working with the non-maternity clients. Health centre D did have

a male midwife who had worked there long term. This midwife left before the deployment of the Hamlin College midwives in 2010.

4.6.2 Supervision

Health centres A, B and C were regularly visited by an assigned Midwife Supervisor while health centres D and E were only periodically visited as the Hamlin College struggled to retain motivated supervisors for these two areas. The Hamlin College of midwives provided irregular supervision to health centres D and E by sending staff to encourage and support the newly graduated midwives when they were without a dedicated supervisor.

4.6.3 Community awareness

Each team of Hamlin College midwives carried out community outreach activities once they commenced their deployment. Community out-reach involved visiting local community groups, door knocking, talking through a mega phone in the market place, talking in schools and religious institutions.

The quantitative data for this study covered three areas of maternal health care provision including the numbers of women attending the health centres for Family Planning, antenatal Care and birth.

4.6.4 Demographic information

The demographic information regarding each Health Centre is summarised in Table 4below.

Table 4: Demographic information

Health Centre	Catchment population	Number of HCM midwives deployed	Distance from referral hospital (km)	Condition of road
HC A	58,000	2	60	Unsealed, poor dirt road – needing 4WD most of the time and closed for 3/12 due to rain
HC B	56,000	2	62	Unsealed, poor dirt road – needing 4WD and closed for 3/12 due to rain
HC C	28,000	2	52	Sealed
HC D	14,000	2	70	Unsealed, all-weather road in reasonable condition but mountainous
HC E	32,000	2	60	Only 20km sealed, otherwise dirt road in very poor condition, particularly in the rainy season

4.6.5 Family Planning activity

Family planning services in primary health centres in Ethiopia includes counselling and the distribution of contraceptives such as condoms, oral contraceptives, long acting contraceptives including progesterone only inject able contraceptive (Depo-Provera) and progesterone implants (implanon) as well as medical and surgical abortion such as Manual Vacuum Aspiration (MVA) and emergency contraception. The most common form of family planning method in Ethiopia is Depo-provera representing 70% of contraceptive use (Prata et al. 2011).

The definition of a 'consultation' for the purposes of these data includes any visit to the health centre by a woman or a woman and her partner which resulted in the transfer of a commodity or service; it does not include any visit where counselling and education only took place.

Family planning and contraception services are available from both public and private health facilities in Ethiopia (FGAE 2014). Ethiopia has a national body that promotes family planning known as the Family Guidance Association of Ethiopia (FGAE 2014). Family planning education and supplies are supported by many non-government organisations (NGO's) and consultations for family planning and contraception are provided at no cost in Ethiopia (FGAE 2014).

Aside from doctors, midwives and nurses family planning services are also available through local health posts staffed by Health Extension Workers (HEWs) and through trained volunteers known as Community based Reproductive Health Agents (CBRHA) who work alongside the HEWs (Prata et al. 2011). There are usually five health posts to every health centre and all the non-surgical methods of contraception are available freely from local health posts.

Table 5: Family Planning activity from 2009-2010 and 2010-2011

Health Centre	Catchment population	Annual total for pre-deployment 2009-2010	Annual total for post deployment 2010-2011	Mean pre-deployment, per month 2009-2010	Mean post–deployment, per month 2010-2011	% change
A	58,000	1236	2267	103	189	+83
B	56,000	1261	3377	105	281	+168
C	28,000	3926	5318	327.1	443	+35
D	14,000	1664	1556	138.6	130	-7
E	32,000	475	3000	39.5	250	+532

Table 5 summarises the activity data for family planning consultations both pre and post deployment of the Hamlin midwives for five rural health centres across three regions of Ethiopia. The complete data table can be found in appendix V.

The data shows an increase in four out of five of the health centres with the highest increase found in health centre E where there was very poor activity prior to the deployment of the Hamlin Midwives.

The data also shows a decrease in the uptake of family planning services for health centre D with a 7% reduction over the year. However the figures return to previous levels by the end of the first year.

These data respond well to the population density in each of the health centre catchment areas with the lowest recorded family planning consultations recorded in an area that is approximately 50% less populated (health centre D) than the other four areas (health centres A,B,C and E).

All the health centre catchment areas are rurally located and people generally need to walk some distance to access services. Health centre D has the added issue of being located in a very rugged and mountainous area increasing the difficulty for a community to access health care services. The health centre with the highest levels of maternal health activity was also experiencing higher levels than the other health centres, before the midwives commenced their work and is also the closest in proximity to a road and transport.

Figure 10: Total numbers of family planning consultations 2009-2010 & 2010-2011

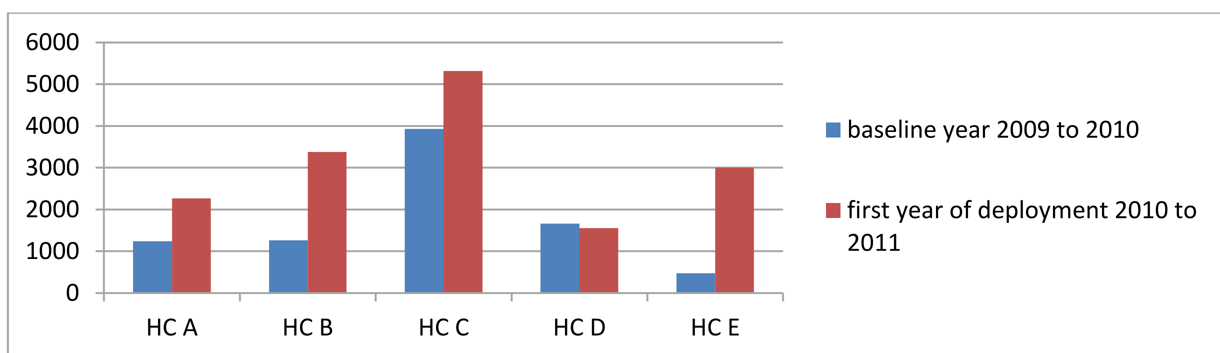


Figure 10 further illustrates the comparison of the annual number for family planning consultations for the 12 months prior to and the 12 months post deployment of Hamlin midwives into 5 rural health centres.

An increase in the uptake of family planning services can be seen for four of the five of the health centres. The largest increases can be seen in health centres E with an increase of 532% and health centre B of 167%.

Figure 11: Mean number of family planning consultations pre and post deployment of Hamlin Midwives

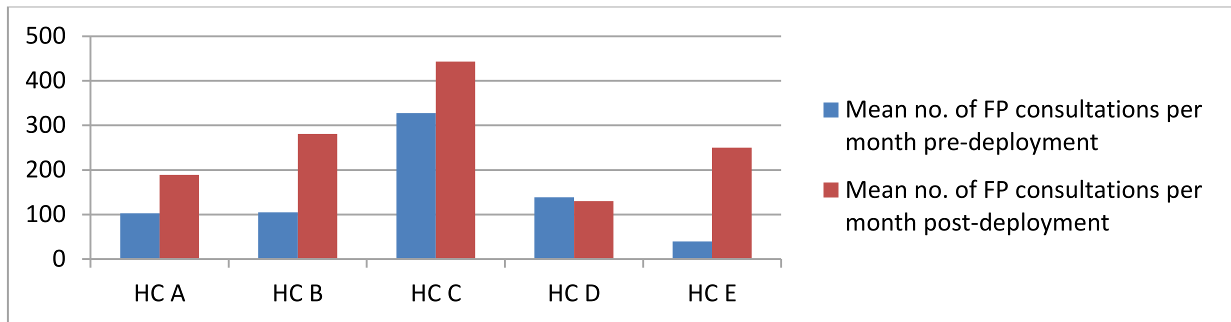


Figure 11 illustrates the increase in the mean number of family planning consultations from the baseline year pre deployment of the midwives to the first year of Hamlin Midwifery activity for 4 of the 5 health centres (A, B, C and E). There was also a slight decrease in Family planning consultations for the Hamlin Midwives in Health Centre D in the first year.

4.6.6 Antenatal care

Antenatal care was carried out by the midwives at each health centre and was an important opportunity to identify complications in pregnancy such as hypertension in pregnancy. The antenatal visit was also an important time to diagnose and manage other illnesses that women may be suffering from such as malaria, human deficiency virus and anaemia. It was also an important time to develop a relationship with each woman and to discuss preparation for the birth of her baby. Table 6 presents a summary of the antenatal activity before and after the midwives commenced their work in each health centre.

Table 6: Health Centre Antenatal activity from 2009-2010 and 2010-2011

Health Centre	Eligible AN women in each Health Centre *4% of the pop	Annual total for pre-deployment 2009-2010	Annual total post deployment 2010-2011	Mean pre-deployment per month 2009-2010	Mean post-deployment per month 2010-2011	% change
A	2320	284	1104	24	92	+289%
B	2240	406	1242	34	104	+206%
C	1120	1197	1752	100	146	+46%
D	560	608	818	51	68	+35%
E	1280	20	264	14	22	+1220%

*Calculating Eligible AN (Antenatal) women: http://labspace.open.ac.uk/mod/oucontent/view.php?id=450525§ion=1.4.2

Figure 12 compares the number of antenatal consultations pre and post deployment of the Hamlin midwives into the five (5) study health centres while Figure 13 shows an increase in the mean number of antenatal consultations for each health centre, with the greatest rise found in health centre E followed by health centre B then A.

Figure 12: Total number of Antenatal Care (ANC) consultations pre and post deployment of the Hamlin College midwives

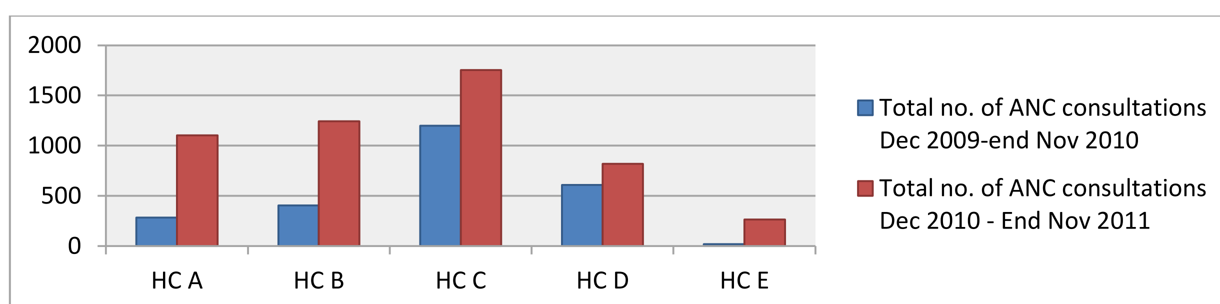
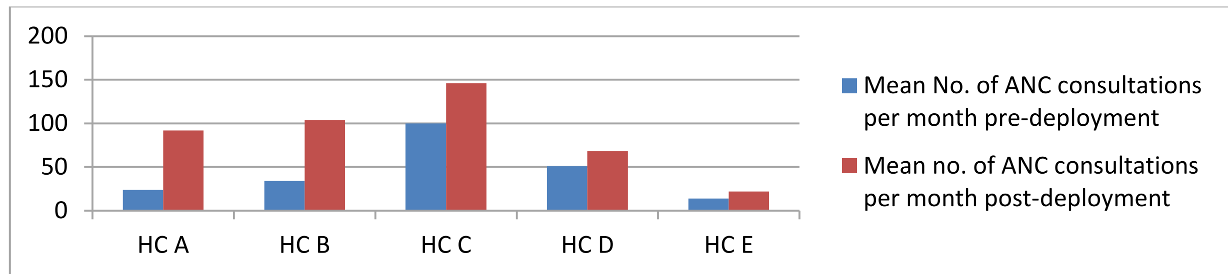


Figure 13: Mean Antenatal care consultations each month pre and post deployment of Hamlin College Midwives.



There was an increase in the number of antenatal care consultations in all five (5) health centres with the highest increase experienced by health centre E however the overall number is very low when compared with the other health centres.

4.6.7 Births managed by the HCM midwives and referrals to the next level of care

The total number of births that were managed by the midwives at the health centre level, including births that were considered standard or normal vaginal births and those that were considered complicated but did not require referral.

The complications managed by the Hamlin College midwives at the health centre level include the management of women with a retained placenta, breech presentation, multiple pregnancy and birth, prolonged and or obstructed labour, ante-partum or postpartum haemorrhage, a birth complicated by an infection and the birth of a stillborn baby.

Table7Presents a breakdown of the labour management and birth from each of the health centres pre and post deployment of the Hamlin College midwives into each health centre. The table shows increases in the rate of births managed in each health centre, with the largest increases in health centre E and B however the numbers are small in comparison with the other three health centres (A, C and D).

Table 7: Summary table for labour and birth activity from 2009-2010 and 2010-2011

Health Centre	Annual total post deployment	Annual total post deployment of the midwives	Mean per month pre-deployment of the midwives	Mean post deployment of the midwives	% change	% Normal vaginal birth +complicated births
HC. A Normal birth		119			↑198%	
Complicated births		40				
Total births	Previously 40	159	3.3	13.2		↑296%
HC. B Normal birth		137			↑1612%	
Complicated births		72				
Total births	Previously 8	209	0.6	17.4		↑2512%
HC.C Normal births		128			↑106%	
Complicated births		56				
Total Births	Previously 62	184	5.1	15.4		↑198%
HC. D Normal births		81			↑179%	
Complicated births		41				
Total Births	Previously 29	122	2.4	10.4		↑321%
HC. E Normal births		51				
Complicated births		7	0.08	4.8	↑5000	↑5700
Total Births	Previously 1	58				

Figure 14: Number of births at each health centre pre and post deployment of the midwives 2010 – 2011

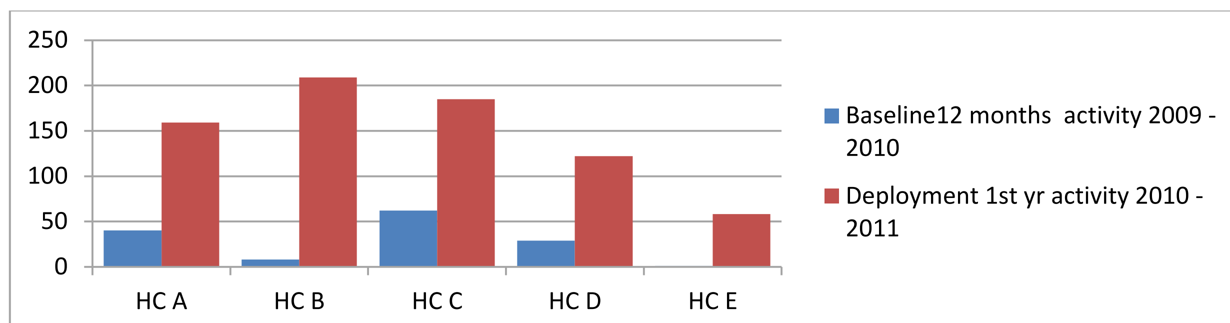
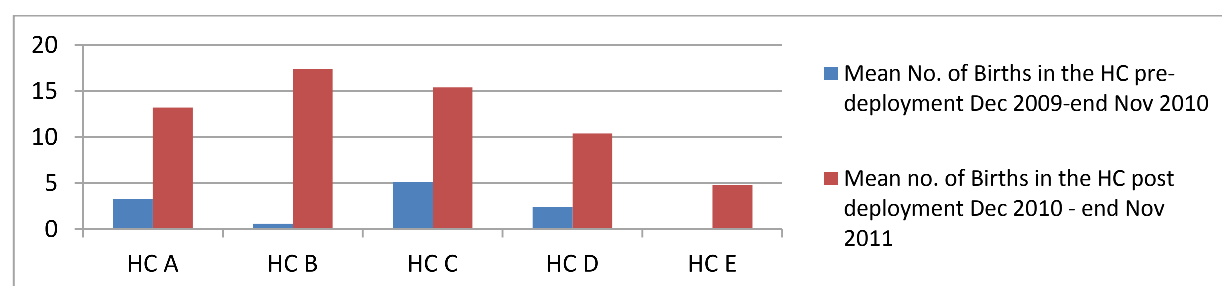


Figure 15: Mean number of births managed in each health centre pre and post deployment of the Hamlin Midwives



Figures 14 and 15 illustrate the increases in actual numbers and monthly mean number of births managed in each health centre. The graphs also illustrate the very low baseline activity of Health centres B and E prior to the deployment of the Hamlin midwives.

Table 8: A summary of percentage changes for family planning, antenatal care and births managed in the health centre

Health centres	Family Planning activity	Antenatal Care activity	Birth activity
A	↑83%	↑289%	↑296%
B	↑167%	↑206%	↑2512%
C	↑35%	↑46%	↑198%
D	↓7%	↑35%	↑321%
E	↑532	↑1220%	↑5700

4.6.8 Summary of the findings

The quantitative data generated from the health centres included the activity for; family planning, antenatal care and births in selected health centres in rural locations where midwifery graduates from the Hamlin College had been deployed. A comparison of the data collected from each health centre prior to and post deployment showed improvements in all activity areas with one exception; an initial decrease in family planning consultations in health centre D (see table 10). However the data shows that the health centre started to experience an increase in activities following the initiation of outreach and education by the midwives that included the provision of a full range of Ethiopia's family planning options. Data from Heath centres B and E should be seen with caution in that despite both of these health centres being 'operational' for more than a year prior to the Hamlin midwives being deployed, they had not had midwives consistently working in them.

The data does not differentiate between the positive impact of the work of the midwives, improved enabling of the midwives with an improved supply of drugs and equipment or the improved referral pathway through the provision of the ambulance among other variables.

5 DISCUSSION

5.1 Introduction

This mixed methods research study aimed to explore experiences of a direct entry midwifery programme in the Hamlin College of Midwives in Ethiopia and examine the maternal health outcomes associated with the programme's rural deployment strategy. The study involved gathering qualitative data from three staff, four students and six graduates as well as maternal health data from selected health centres where graduates had been deployed.

The quantitative data, representing selected maternal health outcomes, in the health centres where Hamlin College midwives were deployed, demonstrates the improved maternal health outcomes that can be achieved when midwives are supported and enabled to attain their full scope of practice in rural areas. Further studies that explore the environment in which the midwives were working and comparing these health centres with others that had not had Hamlin midwives deployed would provide further rich information and insight.

Semi structured interviews were undertaken to gain an understanding of the experiences of staff, students and rurally deployed graduates of the Hamlin College of Midwives. A thematic analysis was undertaken of the transcribed interviews and three major themes were identified. These were:

1. The journey to midwifery
2. Becoming a midwife
3. Transformation and innovation

The 'Journey to Midwifery' shed light on the challenges for girls and women from rural areas in pursuing high school and tertiary education in Ethiopia. Poverty, traditional beliefs, gender inequity, child marriage and the threat of sexual assault are continuing social problems significantly affecting girl's access to education.

The study found positive benefits in recruiting and deploying midwives from and to their areas of origin. This strategy addresses the critical shortage of professional midwives in rural areas, provides a route to tertiary education, and creates home-grown educated, professional role models for rural communities.

‘Becoming a Midwife’ provides support for a model of midwifery education that is comprehensive in its focus on both clinical and community components of midwifery. The Hamlin College educational model is targeted in the selection of students from rural areas, and student centred in its approach to academic and clinical skill building and pastoral care. This approach to education appears to be highly appropriate for preparing midwives to meet the maternal and reproductive health needs of rural Ethiopian women. Such an approach will enable midwives to deliver safe and competent care that will foster community confidence and improve maternal health outcomes.

The third theme of ‘innovation and transformation’ illustrates the importance of appropriately designed opportunities particularly for women in rural areas and enabling working environments for midwives. Attracting women who are passionate about becoming a midwife can lead to the deployment of proactive and confident midwives who are able to bring about change within their communities.

Innovation and transformation is a concept that links all three themes. Interviewees described the importance of novel yet tailored approaches to midwifery education and practice in rural Ethiopia. Five key areas of innovation can be highlighted as:

i. Educate girls – transform communities. Midwifery education and affirmative action

ii. Innovative and supportive midwifery education

iii. The enabling environment – transforming midwifery in rural areas

iv. Innovative ‘woman – centred’ care – transforming maternal health care

v. Rural communities – transforming from within

The five key areas will be further explored in this chapter. Each of the key areas influence and overlap each other to some extent. No one strategy works in isolation and it appears that by stepping away from what is considered conventional in a context appears to create a dynamic environment that has momentum and pushes change on another front –and may be summed up with the concept of innovation leading to innovation and transformation.

The Hamlin College programme cannot claim to have developed all the new approaches required to address the challenges that face maternal health in rural areas. Nonetheless, innovation, illustrated and documented through the experiences of the participants in this study, has resulted in a move beyond the rhetoric of change and become reality, even if in a small way.

The findings of this study identify a model for midwifery education and rural deployment that addresses the shortage of professional midwives in rural areas of Ethiopia. The research indicates that the appropriate recruitment, education and deployment of midwives in their own communities, results in positive maternal health outcomes.

5.2 Key areas for discussion

Five major topics for discussion generated by the findings are summarised in the boxes below. The five discussion topics span the three major themes that emerged from the findings, including 'The Journey to Midwifery', 'Becoming a Midwife' and 'Innovation and Transformation'. Each topic area will be discussed in relation to the relevant literature in the following pages.

Table 9: Key areas for discussion

Educate girls – transform communities; Midwifery education and affirmative action

- The need for on-going improvements and affirmative action in the education of girls in rural Ethiopia
- Midwifery as a career choice for women - The win-win in educating rural women in midwifery
- Role models for girls

Innovation and supportive midwifery education

- Deployment focused recruitment – how careful recruitment can address human resource issues
- Midwifery centred curriculum and early engagement with women's health
- Competency based curriculum based on international standards – addressing the 'third delay' y
- Problem Based Learning approach with academic support
- Pastoral care for rural women in tertiary education
- interdisciplinary and inter country collaboration

The Enabling Environment – transforming midwifery in rural areas: Strategies that enable midwives to realise their full scope of practice and encourage long term retention

- Peer support
- Supportive supervision
- Supplies and equipment - addressing the second delay
- Providing a dedicated 24/7 ambulance to the referral hospital – addressing the second delay

Innovative 'woman- centred' midwifery – transforming maternal health care in rural areas:

- Midwifery practice becoming more 'woman centred'
- Innovative – novice researchers – door knock survey, widespread community outreach
- Evidence based – i.e. squatting
- Culturally sensitive – family planning and corn fields, porridge programme

Rural communities – Transformation from within

- The transformation within a rural community's attitude towards midwives and accessing health care in health centres
- Building a professional reputation in the community
- Drawing on cultural connectedness to enhance the quality of midwifery care and awareness additions

5.2.1 Educate girls – transform communities:

All the students and graduates in this study spoke of the struggles that they and their peers experienced in order to complete secondary school and gain entry to tertiary level education. The participants identified issues related to and stemming from poverty and traditional practices that prevented girls in their community from completing school. These included a lack of money to buy uniforms and pay for educational materials, the girls working around the home or farm either due to a belief that it was the right place for a girl or due to financial necessity, as well as the practice of child marriage. Interviewees also spoke of sexual assault and the traditional practice of abduction for marriage. The personal accounts of the participants provided insight into the reasons for the low participation rates of females in education in Ethiopia. These findings are consistent with international studies showing that children from the poorest families are the least likely to go to school (UN 2013). Poverty has been identified as the 'single' most important factor preventing children from going to school. Children from the poorest households are three times more likely to not attend school than their wealthy peers (UN 2013, p. 23). Living in a rural location, family size, family wealth, and traditional gender beliefs all play a part in preventing girls from going to school (Pereznieto & Jones 2006).

In Ethiopia, deep rooted poverty is often associated with living in a rural area where farming families rely on a subsistence living (MoFED 2010). Rurally – linked factors from the participants' testimonies, included the distance required for many children/girls to walk to school and the associated risks for sexual violence. Large families that are part of a subsistence farming community often require girls to leave education to care for younger siblings. These findings are consistent with the literature

which has found that children in urban areas are twice as likely to receive an education as those in rural areas (UN 2013).

The participants in this study found themselves outnumbered by boys in the school setting especially by the time they reached secondary school. This is consistent with findings showing a widening gender gap in education, with boys outnumbering girls in primary and even more so in secondary education, even for girls from wealthy families. (CSA 2011; UN 2013, p. 24).

Overall, 26% of Ethiopian women between the ages of 15 to 24 have never received any formal education. Only 51% of the same age group have received some, but have not necessarily completed primary level education (CSA 2011). For rural women, the levels of education are much lower, with 33% of women between the ages of 15 to 24 never receiving any education and a majority of 61% having received only some primary education (CSA 2011).

The second millennium development goal (MDG 2) aims to achieve 'Universal Primary Education' (UN 2014) by seeking to:

- Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling (UN 2014)

Tracking of MDG 2 from the year 2000 to 2011 has shown an almost 50% reduction in the number of children out of school from 102 million to 57 million, however a slowdown in progress indicates that the 2015 target will not be achieved(Erulkar & Muthengi 2009). More than half of the remaining 57 million children out of school live in Sub-Saharan Africa and 61% of youth aged 15 to 24 who lack basic reading and writing skills are young women (UN 2013, p. 22).

Providing girls with access to education improves the health of a family, has a role in breaking the cycle of poverty and delays child bearing; for example, 'educated girls are likely to have fewer, and safer, pregnancies'(Save The Children 2012a).

As part of their 'Education for all' campaign UNESCO states that if all women were able to achieve a primary and secondary education there would be significant reductions in child marriage and child mortality. Ensuring all women receive at least a primary education could reduce maternal deaths by two thirds (EFA 2013/4).

The Ethiopian government, in partnership with major donor agencies, has invested much, particularly over the last two decades, in an expansion of educational infrastructure under the Education Sector Development Programmes (MoFED 2010; The World Bank 2005). The strategy realised the need to improve access to education through increasing the numbers of schools, both primary and secondary, as well as universities across the country. (MoFED 2010; The World Bank 2005). While school attendance has improved, there are still disparities between urban and rural, the poor and those better off, and girls and boys (UN 2013). The rapid expansion of schools while increasing school enrolments met with a decrease in the quality of education, due to a lack of experienced teachers to meet demand, which in some rural areas led to rising 'drop-out' rates (MoFED 2010).

A strategy recommended by UNESCO that has particular resonance with the Hamlin College deployment strategy, encourages governments to prioritise the employment of female teachers in rural areas, as a way to encourage girls to stay at school; 'girls also need female teachers, often for cultural reasons, and to provide a role model to keep them from dropping out of school' (EFA 2013/4).

5.2.1.1 Early marriage and education

The impact of childhood marriage on participation in education, as described by several of the participants is also evident in the Ethiopian Demographic Health Survey (DHS). The participant students and graduate midwives were all unmarried and without children at the time they entered higher education. The participants spoke about the issues faced by themselves and their peers with regards to abduction and childhood marriage. As a result of managing to avoid childhood marriage, they were able to complete their education. There is a strong link between age of marriage and education level:

Early marriage varies dramatically by education; 27% of young women with no education were married by age 15, compared to just 2% of young women with secondary or higher education (CSA 2011, p. 9). Nationally more than one in 10 (12%) young women age 15- 24 were married by age 15(CSA 2011). The pressure of early marriage is more common in rural areas and the effects on education levels are likely to be greater in these areas (Gage 2013).

In order to end child marriage and improve the educational opportunities for girls, community leaders need to be engaged and committed to enforcing the legal age of 18 for marriage (Gage 2013). Grass roots work can improve the respect of the female child and decrease the tolerance of abduction and sexual assault of females (Verveer 2010) – both of which are often part of the marriage 'process'. Examples of work in this area include the utilisation of mass media such as the broadcasting of information over the radio and television (Care 2013; Population Media Center 2009). One very popular radio 'Soap Opera' which was followed by more than 50% of the Ethiopian population raised awareness and challenged 'traditional practices' through dramatisation of social

issues such as education for children, female genital cutting, child marriage and marriage through abduction (Population Media Center 2009).

Successful grass roots work in rural areas has included the mobilisation of communities, community leaders and local government for example through local sports and community organisations (Care 2013; Erulkar & Muthengi 2009). The Amharra region of North Western Ethiopia, which has one of the highest rates of child marriage in the country, benefitted from a collaborative initiative (Gage 2013) known as the combined Family Planning and Reproductive Health Project. This project brought together school based health volunteers and community based reproductive health workers to do house to house visits during which they advocated delaying marriage, and promoted the benefits education for girls(Gage 2013). A project by Pathfinder International worked on improving the empowerment of women and girls in Ethiopia by promoting access to, raising awareness of, and training about reproductive health including family planning services. They also promoted freedom from sexual exploitation and violence, forced marriage, and other harmful traditional practices such as female genital cutting. Pathfinder International promoted education for girls by giving families scholarships to keep girls in school. The project trained girls as peer mentors, as well as promoting and training leaders in the judiciary, police force, community and religious leaders as well as reaching children and adolescents in school(Alemu, Asnake & Jennifer 2008).

By returning to work in health centres in their own rural communities, the graduate midwives become role models, not only to girls but by showing communities the valuable contributions that women can bring when they have been given the education to become a professional midwife. Aside from their day to day work in the health centre, the midwives are also brought closer to girls and adolescents when they carry out their

community education programmes in schools and in the wider community. The graduate midwives were found to draw on their own cultural knowledge, experiences and connectedness. Using their knowledge of local dialects and idioms, they challenged local families about child marriage, family planning and spacing, and educating girls. An example of this was given by Hanna [name has been changed], when she talked about the graduate midwife under her supervision who used her own traumatic childhood experience of 'abduction for marriage' to dissuade families from arranging child marriages (see story on page 95). This may encourage the community that their daughter may also become educated and serve their community.

Government policy is also needed to address low female participation rates in tertiary education (Lestrade 2012). With only 17% of women nationally and 7% in rural areas completing secondary education and entering university, more needs to be done to support women throughout education and into professional life (CSA 2011). One strategy employed by the Ethiopian Ministry of Education to address the rural and gender imbalances in education has been the lowering of the entrance marks for female students from rural areas to enter university (FMOE 2011a). The specific matriculation score is adjusted each year depending on the number of university places available but in the case of entrance to medical school in 2011 the required score for females was 48 while the score for males was 56 (FMOE 2011b). This strategy has been found to be useful in other countries. A small number of participants in this study discussed difficulties of adjusting to university life in a city and dropping out of a university course prior to entering the Hamlin College. All of the midwives and students found they very much appreciated, and felt the need for the close support and mentoring by the Hamlin staff, as they adjusted to university life.

5.2.1.2 Midwifery as a career choice for girls

A study on gender and education in Ethiopia recommends that affirmative action to promote tertiary education for women could be focused on female-related professions and highlights midwifery (Lestrade 2012). However this report noted that most midwifery students in university level courses are male and in one of the new government universities, all but one of 38 of the 2010-11 midwifery cohort were male (Lestrade 2012). This draws attention to the need for midwifery to be promoted to girls in school.

Supporting the education of female midwives from rural areas not only promotes female education, it also increases the number of female midwives in rural areas ensuring women have a choice regarding who they prefer to attend their birth. There are no studies found in the Ethiopian context that definitively find that women prefer to be attended by a female during birth. However the majority of women(78%) in Ethiopia are cared for by a traditional birth attendant (TBA) or relative(CSA 2012, p. 127; Shiferaw et al. 2013)and it is known that the majority of traditional birth attendants are women(Bergström & Goodburn 2000, p. 79). This is an area that requires further study.

The Hamlin College of Midwives 'affirmative action strategy stipulates the selection of 'only female candidates from rural areas', ensuring female midwives are available in rural areas as part of woman centred midwifery care.

5.2.2 Innovative and supportive midwifery education

The Hamlin College of Midwives offered a choice for the participants to follow their preferred career, in contrast to joining a university faculty by assignment from the Ministry of Education. The Hamlin College offered a direct entry competency based, midwifery focused programme that became recognised as a model of best practice for

the country (EMA 2013). Small class sizes, strong educational support, and pastoral care, have been described by participants in this study as having provided great assistance in their adjustment to university life, being students from resource poor educational backgrounds.

This recruitment strategy not only provided a pathway in which affirmative action could prioritise places in tertiary level education for females and importantly females from rural areas, it also highlighted the benefits of recruiting motivated candidates. Participants spoke of the importance of having motivated students in their chosen course of study, and of highly motivated graduate midwives willing to share the challenges of professional midwifery practice in a rural area.

Allocating students to particular faculties, not based on choice but according to matriculation scores or workforce demands is the method by which the Ministry of Education assigns students to universities (Rayner & Ashcroft 2011). However, allocating students to a course without considering their preference in the longer term may be counterproductive. The students and midwives in this study described the importance of choice and motivation when pursuing an education. A number spoke about having dropped out of courses that they had previously been assigned to, but for which they had little motivation and interest. Limited resources may be wasted when students are not motivated to be in a given course and graduates may not be as productive when they have been deployed to work in a career that was not of their choosing.

One of the difficulties for women when assigned to a university is that they can be sent a great distance away from the support of their families and communities(Rayner & Ashcroft 2011). Rural women away from their families are particularly vulnerable and

many have no experience of independent living, and lack assertiveness and study skills(Lestrade 2012).

Women from rural areas need extra support when adjusting to life in a city away from their families. The participants in this study spoke fondly of the encouragement and support they received from academic staff as they adjusted to their new life. The support and encouragement given to the midwifery students could become a model strategy on campuses nationwide to improve the support and success of all rural students particularly women(Lestrade 2012).

Another strategy could be to assign students to universities closer to home if they prefer it, as the number of universities increases in each region of Ethiopia. Assigning health workers who have come from a rural area improves attrition and should be a reason for expanded programmes to recruit and educate students from rural areas(Kruk et al. 2010).

5.2.2.1 Deployment focused recruitment - a big picture approach

In the first year of their deployment back into their areas of origin, the graduate midwives found that their command of local language, identity and cultural knowledge enhanced their work as midwives. The health messages they gave while conducting ‘outreach’ in the surrounding areas regarding the health centre, were enriched not only by their use of the local language but more specifically the local dialect, and the incorporation of context specific metaphors. In a country as culturally diverse as Ethiopia, where there is poor engagement by remote communities of the rural health care (Shiferaw et al. 2013; Teferra, Alemu & Woldeyohannes 2012), there is a need for provision in their own language and in a way that is culturally appropriate. ‘Deployment focused recruitment’ addresses the needs of rural communities to have some of ‘their

own' people educated and equipped to provide the professional care they need in a way that can relate to them culturally and in their own language(Worku, Yalew & Afework 2013).

Studies have found that those whose place of origin is a rural area, will be more likely to work in a rural area post-graduation (Blaauw et al. 2010; Lori, Rominski, Richardson, et al. 2012). while other studies have found it to have only a weak influence in one study in the Ethiopian context(Frehywot et al. 2010). Studies also endorse the placement of women to rural areas as they are more likely to stay in rural areas than men(Michael et al. 2010). For women being near to family is of importance whether for security reasons (Ensor et al. 2009), to be near support of the family or to support parents(Ensor et al. 2009; Lori, Rominski, Gyakobo, et al. 2012) and to be near family for the process of marriage to take place (Abimbola et al. 2012).

5.2.2.2 Midwifery centred, context specific curriculum

The Hamlin College of Midwives curriculum is unique in Ethiopia in that it is midwifery centred and tailored to the Ethiopian context. This is in line with the ICM statement that a 'midwifery centred' and 'competency based' curriculum prepared by midwives and predominantly taught by midwives is the most appropriate way to prepare midwives (ICM 2010b). In addition, the ICM advises that curriculum needs to not only ensure that graduates are able to achieve the core competencies but be dynamic enough so that changes can be made to best suit the needs of a particular host country (ICM 2010b; Petterson 2007). while remaining within the definition of a midwife (WHO 2011a)

The Hamlin College of Midwives curriculum does not include non-midwifery (that is, nursing) content and concentrates instead on expanding core essential midwifery areas. This focus on midwifery is essential recommendations in order that midwives be

adequately and appropriately ‘skilled’ in order to deliver effective and high quality maternal health services (Fullerton, Thompson & Johnson 2013; Maclean 2003; Maclean 2007; WHO 2011a).

It is important that programmes to improve maternal health provision do not just focus on upper level emergency obstetric care but also refresh and improve basic emergency obstetric care (Maclean 2007) – the care that is all too frequently required by a midwife at the health centre level.

Despite the acknowledgment that midwifery education needs to improve in Ethiopia it has been limited by a lack of recognition of midwifery as an autonomous profession (Fullerton et al. 2011; Gaym et al. 2008). Ethiopia is not the only country to lack clarity in this regard(UNFPA, ICM & WHO 2014). The overall demands for increased numbers of human resources for health have led some to think, that preparing a health professional to manage a broad range of health needs, for example; nurses who can perform midwifery tasks, and midwives who may also work as paediatric nurses, is a solution(UNFPA, ICM & WHO 2014). However this type of multi-skilling may in fact lead to a poorer quality health professional and specific health needs may go unmet. The utilisation of various cadres to provide ‘midwifery care’ may also impede professional regulation and standardisation of clinical competencies and on-going professional development(UNFPA, ICM & WHO 2014).

Documentation and record keeping are essential aspects of health education, case management and professional accountability. The partograph not only provides a record of the progress and outcomes of a woman giving birth it is also a lifesaving tool for midwives and other skilled birth attendants. Lack of experience and work load are common reasons why this record is not maintained. For example, in Botswana where

both nurses and midwives are involved in caring for women in labour, midwives were found to have greater confidence and competency in completing important obstetric records (Fako, Forcheh & Ncube 2004). Midwifery centred curriculum provides an opportunity to ensure the partograph is given the respect it is due as an essential part of maternal health care, particularly for a midwife working in resource poor areas where timely referral is needed for an obstetric emergency.

5.2.2.3 Early clinical engagement, competency and preceptorship

Early engagement by students in the clinical setting was identified as strength in the Hamlin College programme. Through their experiences in clinical settings students appeared to become more passionate about becoming a midwife and developing clinical skills. This is consistent elsewhere where early clinical engagement by students improved their understanding of the profession and confirmed for them that their new course of study and future career was right for them (McCall, Wray & McKenna 2009). The experiences of the new graduates in needing to manage complicated obstetric cases from the commencement of their professional career illustrates the importance of achieving a high level of clinical skill competency prior to graduation(Koblinsky et al. 2006). The Hamlin students and graduates talked appreciatively about the level of experience and support of their clinical tutors, other studies have likewise found that emphasizing the importance of good preceptorship and mentoring as part of quality midwifery education (Koblinsky et al. 2006).

5.2.2.4 Problem Based Learning

Every participant highlighted the role of 'Problem based learning' (PBL) as a significant learning tool, developing their capacity and motivation to learn, problem-solve, work in a team and teach each other. Following the initial shocks and challenges of adopting a

radically new approach to learning, the implementation of problem based learning into the Hamlin College of Midwives curriculum played a positive role in developing each student's capacity. The students' experiences of PBL not only created opportunities to learn problem solving skills but also provided a platform to learn teamwork, develop skills in accessing, compiling and sharing information. Students found that the process of PBL enabled them to consolidate their knowledge and skills in particular areas of their study.

The positive benefits of PBL for students as expressed by the Hamlin College students, graduates and staff were consistent with the experiences of students engaging in this learning style in midwifery and nursing education elsewhere. Studies in the UK have also found that overall students felt positive about using PBL and that the process enabled them to develop better skills in independent learning (Hamilton, Yearley & Boyle 2012; Horne et al. 2007). PBL students gain more depth in their studies through the exploration of subject material, better use of resources (Horne et al. 2007; Peace 2012), improved communication and team work, as well as sharing, teaching, and presentation skills (Horne et al. 2007; Peace 2012). The Hamlin midwives and students found the PBL approach connected theoretical concepts with practise which is consistent with other studies that describe the PBL approach as linking theory to practice effectively and as providing an appropriate educational process for developing skills that are essential for clinical practice (Peace 2012).

Having come from primary and high schools in rural areas where there were little or no learning resources the benefits of the approach of PBL were many. The educational back ground of the students were based on experiences of crowded class rooms, rote learning, and little or no access to text books (Lestrade 2012). Girls are taught from a

young age to not speak out and to give deference to males, whether they were family members, school teachers or peers in the classroom (Lestrade 2012). The PBL process requires all students to participate in the various stages of inquiry and sharing with peers. PBL methodology provides opportunities for the students to learn how to learn (Peace 2012). There was a visible transition from shy passive students to more confident independent learners, who were in a better position to meet the ICM mandate for all midwives, to participate in health education(ICM 2010a), and to embrace 'lifelong learning'.

The initial shock of the students of the Hamlin College of Midwives to the PBL way of learning was also experienced by students in other countries. Much of the negative feedback from students in previous studies into its use elsewhere can be addressed by better orientation and preparation of students and facilitators to the PBL programme (Hamilton, Yearley & Boyle 2012; Horne et al. 2007; Peace 2012). Some programmes developed more comprehensive facilitator guidelines. Learning from the experiences of other PBL programmes that have been implemented would be very beneficial for the Hamlin College and other midwifery faculties.

5.2.3 The enabling environment

Following on closely behind the implementation of a best practice model of midwifery education, is the need to ensure that professional midwives have the resources they require to safely fulfil their role as a midwife. The findings in this study highlighted some key aspects of the enabling environment, which the midwives credited with enabling them to fulfil their full scope of practice. What was important to the Hamlin midwives has also been found to be important for the enabling and positive motivation of health workers elsewhere in resource poor rural areas. Key aspects described were

peer support, on-going mentoring by an experienced supervisor, adequate supplies of drugs and equipment, accommodation in close proximity to the health centre, and of most significance was a reliable ambulance service (this service can unfortunately be impaired during the height of the rainy season in a couple of areas). The findings in this study support previous research that identifies the importance of an enabling environment for professional midwives(UNFPA, ICM & WHO 2014). Health centres that are lacking essential equipment, drugs, gloves and skilled midwives destroy the confidence levels of the community and are a common reason for rural families to not seek maternal health care in the health centre (Shiferaw et al. 2013). Ensuring a consistent supply of drugs and equipment will improve the confidence the community has in the work of the midwives as well as ensuring they can safely achieve their full scope of practice. The cost of transport has been found to be prohibitive for women accessing maternal health care far from their home (Schoon 2013; Worku, Yalew & Afework 2013). Placing midwives in health centres in rural areas where women can access quality care and providing a low cost or free ambulance is also an essential aspect to reliable maternal health care(Schoon 2013; Worku, Yalew & Afework 2013).

The enabling environment is an essential strategy for improved maternal health care and retention rates in rural areas (Maclean 2007). The enabling environment may include the provision of drugs, supplies and equipment as well as adequate staffing, supervision and a referral network (Bhutta et al. 2008). The importance of the enabling environment is supported in much of the human resource literature, showing the importance that staff place on working in an environment that has adequate staffing and peer support (Manafa et al. 2009). Attrition increases when working in a place where there is a lack of staff (Lori, Rominski, Gyakobo, et al. 2012). Infrastructure was

seen as being important to enable staff to fulfil their duties and practice in the way in which they were taught and that is safe (Manafa et al. 2009). For example the provision of a dedicated ambulance was highlighted by all the graduates as a vital support to their role. An enabling environment also means a commitment to strategies that include well placed, safe low cost housing near the work place also more flexibility and support for women in the work place.

5.2.3.1 Peer support in midwifery

The workload for a midwife working in a rural community can be heavy, particularly in resource constrained environments where there are staff shortages. The midwives interviewed in this study noted being 'on call' 24 -7', when they are not travelling outside of the village. Midwives interviewed in this research valued the collegial support of working with a peer. Some midwives said that they initially felt overwhelmed and afraid when they began to practice, but were encouraged by the presence and support of a peer, particularly when managing a woman with obstetric complications.

5.2.3.2 The role of the midwife supervisor

A crucial element of the enabling environment for the Hamlin College student's waste provision of a senior experienced midwife supervisor. Supervisors work alongside the midwives and ensure on-going competence in skills, but also facilitate the development in areas of professionalism that is difficult to cultivate as a student. The supervisor may encourage the midwives in communication and cooperation with the other staff members in the health centre. They assist with time management and interaction with the community, particularly community leaders. This is also the case in studies outside of Ethiopia where supportive and mentoring supervision were ranked highly among motivating factors for working in a rural area (Kadam et al. 2012; Mathauer & Imhoff

2006). Studies have shown the converse situation of poor supervision and a lack of performance appraisal, recognition or encouragement (Manafa et al. 2009)by health centre leaders, as significant de-motivators to working in a rural area .

5.2.4 Innovative 'woman- centred' midwifery – transforming maternal health care in rural communities:

The midwives were using the combination of their competent midwifery skills with their insider knowledge of culture, language community connectedness to respectfully tailor midwifery care to the women in their care. Literature in Ethiopia illustrates that women value the 'traditional birth attendant' because they respect the culture (Shiferaw et al. 2013). When women in rural areas go to the health centre, they feel their culture is neglected, the care is poor quality and they are not respected(Shiferaw et al. 2013). Examples of this closer engagement by the Hamlin midwives with what women want in terms of birthing their own community included meeting with women when conducting a door to door survey and carrying out community outreach and public talks on women's health issues (Yidi. Point 4.5.5, Page 159). Information gathered by the midwives during this survey lead to the provision and preparation of a traditional porridge in the health centre that is given to women postnatally (Abebech, point 4.5.4, Page 161). Mattresses were purchased to facilitate a preference for squatting during birth (Abebech and Tirunesh, point 4.5.4, page 161-162), and the metaphor of the wise farmer spacing his corn plants for a better yield to the use of family planning to space children in a family in order to better provide for their needs (Hana, point 4.5.4, page 157). Through the adaptation of the health centre environment by embracing culturally- friendly practises without compromising quality the midwives were able to engage more deeply with women and their families (Yidi, point 4.5.4, page 159)

5.2.5 Rural communities – Transformation from within

The midwives combined competent midwifery practice with their insider knowledge of the local culture and language to assist in transforming their communities from the inside. They devised out-reach programmes to raise awareness of family planning and to bring about the cessation of child marriage. Instruction was given on the importance of care in pregnancy, birth and the post –partum period. These activities were carried out by the midwives in their own language within their own communities. The importance of respecting tradition and culture during the birth of the baby has been found to be a strong determinant for where women choose to have their baby (Teferra, Alemu & Woldeyohannes 2012). The outcomes in the health centres testify to the incremental uptake of the midwifery service by the community. They are underpinned by a growing trust in the midwives through seeing the positive impact the midwives have had on the health of the women in their communities.

5.3 Limitations of this study

This is a small, predominately qualitative study that is not necessarily representative of midwifery in Ethiopia as whole or indeed other sub-Saharan countries. The study presents rich findings and much can be learnt from the experiences of the participants in this study. The precious stories shared by the staff, students and graduates provide valuable insights that challenge traditional approaches and strategies for midwifery education and deployment.

A larger study with a greater amount of students, staff and graduates from midwifery programmes across Ethiopia may provide an understanding of experiences in other midwifery contexts in the country. This would allow comparisons to be made across different programmes. This study was relatively short term by only looking at the first

year post graduation. A longitudinal study would be important to determine whether the benefits were maintained and how contextual factors such as policy and health service planning affected health outcomes and midwifery deployment.

It would therefore be useful to examine baseline data across a large number of health indicators from health centres across Ethiopia to examine changes in service usage and maternal health outcomes over time.

5.4 Implications for practice, policy and education

These findings of this study have led to the identification of key strategies that can be adopted to improve the quality of midwifery education and advance the successful deployment of highly skilled midwives into remote and resource poor areas of Ethiopia.

Key areas for action include;

- Affirmative action in rural community areas using midwifery as an example to communicate the value of education for girls.
- 'The right person for the right place'; Targeted and transparent recruitment processes for rural communities.
- 'For midwives by midwives'; Midwife centred and competency based curriculum with early clinical engagement.
- A midwife 'fit for purpose and place'; enabling the development of a broad range of clinical competencies prior to graduation.
- Developing independence and enhancing learning with the use of 'problem based learning'.
- 'An enabling environment'; developing a minimum standard of facility and supervision for newly graduated midwives in resource poor areas.

The promotion of midwifery as a career for women is a positive way to increase the numbers of women in higher education and increase the numbers of midwives in Ethiopia (Lestrade 2012).Applying affirmative action for the recruitment of rural women into midwifery will increase the numbers of female, tertiary educated women as well as female midwives (at the bachelor level) and the retention of midwives specifically in rural areas(Lori, Rominski, Richardson, et al. 2012). Encouraging educated professional women to work in rural areas will also provide strong role models for rural women and their families(EFA 2013/4). This could provide the Ethiopian Ministry for Education and the Ministry for Health with a collaborative opportunity to promote female education and health. This could be facilitated by talks in schools by midwives and scholarships for girls to study midwifery such as that provided by the Hamlin College of Midwifery.

Careful consideration needs to be made as to who the most appropriate candidates for such scholarships are. Scholarships for rural applicants should be prioritised alongside internationally accepted recruitment criteria for midwifery schools(ICM 2010b).

Midwifery programmes need to be designed for 'midwives by midwives' and for improved recognition of the profession there needs to be a stronger professional representation of midwives at all levels. This should involve wide stakeholder consultation in the development of curriculum that involves students and graduate midwives. The Ethiopian Government could also achieve this through greater involvement of international leaders in midwifery to build the capacity of Ethiopian midwives to develop quality curriculum through international collaborative initiatives(Lavender et al. 2009). Enabling national midwives to lead the development of curriculum with guidance from experienced groups such as the ICM will foster a sense

of ownership and avoid a situation where national curriculums are imposed which may increase the risk of poor implementation.

Quality education should not be compromised by fast tracking midwifery qualifications to meet numerical targets. Reducing the period of training, taking in too many students or graduating students before they have met crucial minimal standards is likely to be counterproductive for improving professional quality, consumer trust and maternal health outcomes. There needs to be no room for compromise on the achievement of skill competencies such as managing 40 normal births prior to graduation. Furthermore, licensing midwives with the understanding that they can achieve essential experience post-graduation, will only lead to trauma, stress, attrition, mismanagement of women and their babies and a decrease of community confidence in midwifery. Midwifery schools together with the Ethiopian government could develop policy to ensure quality education standards are set and maintained through monitoring across the country. Appropriate and regular training for midwifery educators needs to also be provided and updated so that quality education targets can be met.

It is the practice of the Ethiopian Ministry of Health to deploy new graduates to rural areas for a period of 'service time'. With only 4700 midwives for a population of more than 80million people, newly deployed midwives will most likely work with very little or no peer or senior support. The pressure to increase numbers has to be carefully weighed up against ensuring students pass through quality 'midwifery centric' programmes, in order to develop midwives to their full potential. Upon graduation, midwives hit the ground running as they will be expected to manage the most complicated of obstetric cases as well as provide communities with routine maternal health care. Understandably all professionals develop proficiency through experience,

but no compromise should be made in facilitating midwifery students to reach a high level of competency prior to graduation. This is a moral and ethical issue not only for the wellbeing of the midwives but also for the safety of the mothers and infants in their care.

It is commendable that the Ethiopian government has opened up more than 40 new midwifery educational programmes at both the bachelor and diploma level(EMA 2013). The challenge however with such a rapid expansion, in many developing countries is the lack of experienced educators to ensure quality is maintained (ICM 2011c). As many as 50% of midwifery educators are new graduates with little or no clinical experience. Maclean warns that this type of educational environment leads to a spiralling down of quality in a profession (Maclean 2003).

The majority of Hamlin College of Midwives staff is midwives with more than five years professional experience. Supporting subjects were taught by other appropriate educators from backgrounds such as English language and biostatistics.

Finding and attracting experienced midwife educators is a challenge shared by all midwifery programmes in Ethiopia. However compromise in this area can lead to the lowering in the quality of a programme when new graduates are enlisted to educate the next generation of health professionals (Maclean 2003).

The experienced preceptors working alongside students on clinical placement in health centres and hospitals play a crucial role in developing clinical and professional confidence, also competence in liaising with clinical staff. Midwife preceptors not only model skills and behaviour, they are in a position to advocate for student learning needs, and to optimise clinical experience at an appropriate level.

5.5 Conclusion

This study found that robust and transformational midwifery practice in rural areas can be achieved with deliberate selection of willing candidates from rural areas. Providing educational and pastoral care to rural women in midwifery study, improves their experiences transitioning to the demands of higher education. Direct entry midwifery with the incorporation of problem based learning and a strong emphasis on international competencies can appropriately prepare midwives for the demands of professional practise in rural areas of Ethiopia. Midwifery education is appropriately delivered through the mentoring and guidance of clinically relevant and experienced midwife educators.

Thoughtful deployment of culturally appropriate midwives into an enabling environment replete with supportive supervision, essential supplies and equipment and the capacity for referral can realise improved maternal health outcomes in rural communities.

Maternal health service usage and community engagement can be enhanced by the employment of local midwives who not only provide an important service but who can be agents of change; for woman – centred care and as role models for girls, young women and their communities.

6 References

Abimbola, S., Okoli, U., Olubajo, O., Abdullahi, M.J. & Pate, M. 2012, 'The Midwives Service Scheme in Nigeria', *PLoS Med*, vol. 9, no. 5, <http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1001211>.

AbouZahr, C. 2003, 'Safe Motherhood: a brief history of the global movement 1947-2002', *British Medical Bulletin*, vol. 67, no. 1,pp. 13-25.

AbouZahr, C. & Wardlaw, T. 2001, 'Maternal mortality at the end of a decade: signs of progress?', *Bulletin of the World Health Organization*, vol. 79, no. 6,pp. 561-8.

Achmed, A. 2010, 'Maternal Mortality Trend in Ethiopia', *Ethiopian Journal of Health Development*, vol. 24, no. 1,pp. 115 - 22.

Adegoke, A., Utz, B., Msuya, S.E. & van den Broek, N. 2012 'Skilled Birth Attendants: Who is Who? A Descriptive Study of Definitions and Roles from Nine Sub Saharan African Countries', vol. 7, no. 7, viewed 20/7/2012, <http://www.plosone.org/article/fetchObject.action?uri=info%3Adoi%2F10.1371%2Fjournal.pone.0040220&representation=PDF>.

Adegoke, A., Utz, B., Msuya, S.E. & van der Broek, N. 2012, 'Skilled birth attendants: Who is Who? A descriptive Study of Defintions and Roles from nine Sub Saharan African Countries', *PLoS ONE* vol. 7, no. 7,July10, 2012, pp. 1-11, <http://sfx.lib.uts.edu.au/sfx_local?sid=google&auinit=A&aulast=Adegoke&atitle=Skilled+Birth+Attendants:+Who+is+Who%3F+A+Descriptive+Study+of+Definitions+and+Roles+from+Nine+Sub+Saharan+African+Countries&id=doi:10.1371/journal.pone.0040220&title=PLoS+ONE&volume=7&issue=7&date=2012&spage=e40220&issn=1932-6203>.

Adegoke, A.A., Mani, S., Abubakar, A. & van den Broek, N. 2012, 'Capacity building of skilled birth attendants: A review of pre-service education curricula', *Midwifery*.

Adzei, F.A. & Atinga, R.A. 2012, 'Motivation and retention of health workers in Ghana's district hospitals', *Journal of Health Organization and Management*, vol. 26, no. 4,pp. 467-85.

Ahmed, S., Qingfeng, L., Li, L. & Tsui, A.O. 2012, 'Maternal deaths averted by contraceptive use: an analysis of 172 countries', *Lancet*, vol. 380, no. 9837,pp. 111-25.

AIHW 2012, *Australia's Health 2012: The thirteenth biennial health report of the Australia's Health*, 13 edn, Australian Institute of Health and Welfare, Canberra.

Al Jezeera 2012, 'Ethiopia erupts in deadly ethnic violence', in Unspecified (ed.), *Polictics*, Report, no one, Al Jazeera, <http://www.aljazeera.com/news/africa/2012/07/201273075846287757.html>.

Alebachew, A., Hatt, L. & Kukla, M. 2014, 'Monitoring and evaluating progress towards universal health coverage in Ethiopia', *PLoS medicine*, vol. 11, no. 9,p. e1001696.

Alemu, B., Asnake, M. & Jennifer, W. 2008, *Empowerment of Ethiopian Women: New Solutions to Ancient Problems*, Pathfinder International. , The Communication Network.

Ali, A. 2010, 'The history of nursing in Ethiopia', *Nursing history review: official journal of the American Association for the History of Nursing*, vol. 19, pp. 158-60.

AM O'Hare, B. & Southall, D.P. 2007, 'First do no harm: the impact of recent armed conflict on maternal and child health in Sub-Saharan Africa', *Journal of the Royal Society of Medicine*, vol. 100, no. 12,pp. 564-70.

Armstrong, N. 2010, 'Clinical mentors' influence on student midwives' clinical practice', *British Journal of Midwifery*, vol. 18, no. 2,pp. 114-23.

Bakibinga, P., Forbech Vinje, H. & Mittelmark, M. 2012, 'Factors contributing to job engagement in Ugandan nurses and midwives', *International Scholarly Research Notices*, vol. 2012.

Barako, T.D., Chege, M., Wakasiaka, S. & Omondi, L. 2012, 'Factors influencing application of evidence-based practice among nurses', *African Journal of Midwifery and Women's Health*, vol. 6, no. 2,pp. 71-7.

Bergström, S. & Goodburn, E. 2000, 'The role of traditional birth attendants in the reduction of maternal mortality', *Safe motherhood strategies: A review of the evidence*.

Bhutta, Z.A., Ali, S., Cousens, S., Ali, T.M., Haider, B.A., Rizvi, A., Okong, P., Bhutta, S.Z. & Black, R.E. 2008, 'Interventions to address maternal, newborn, and child survival: what difference can integrated primary health care strategies make?', *The Lancet*, vol. 372, no. 9642,pp. 972-89.

Bhutta, Z.A., Das, J.K., Bahl, R., Lawn, J.E., Salam, R.A., Paul, V.K., Sankar, J.M., Blencowe, H., Rizvi, A. & Chou, V.B. 2014, 'Can available interventions end preventable deaths in mothers, newborn babies, and stillbirths, and at what cost?', *The Lancet*.

Blaauw, D., Erasmus, E., Pagaiya, N., Tangcharoensathein, V., Mullei, K., Mudhune, S., Goodman, C., English, M. & Lagarde, M. 2010, 'Policy interventions that attract nurses to rural areas: a multicountry discrete choice experiment', *Bulletin of the World Health Organization*, vol. 88, pp. 350-6.

Borghi, J., Ensor, T., Somanathan, A., Lissner, C. & Mills, A. 2006, 'Mobilising financial resources for maternal health', *Lancet*, vol. 368, no. 9545,pp. 1457-65.

Boyatzis, R.E. 1989, *Transforming Qualitative Information: Thematic analysis and code development*, Sage Publications, Thousand Oaks, CA.

Cabero-Roura, L. & Rushwan, H. 2014, 'An update on maternal mortality in low-resource countries', *International Journal of Gynecology & Obstetrics*, vol. 125, no. 2,pp. 175-80.

Campbell, O.M.R. & Graham, W.J. 2006, 'Strategies for reducing maternal mortality: getting on with what works', *Lancet*, vol. 368, no. 9543,pp. 1-16.

Care 2013, *TESFA: Working with child brides in Ethiopia*, Care, viewed september 1st, 2014 2014, <http://www.careinternational.org.uk/what-we-do/education/ending-early-child-marriage/tesfa-working-with-child-brides-in-ethiopia>.

Carlough, M. & McCall, M. 2005, 'Skilled birth attendance: What does it mean and how can it be measured? A clinical skills assessment of maternal and child health workers in Nepal', *International Journal of Gynecology & Obstetrics*, vol. 89, no. 2,pp. 200-8.

Carlson, V., Omer, M., Ibrahim, S., Ahmed, S., O'Byrne, K., Kenny, L. & Ryan, C. 2011, 'Fifty years of Sudanese hospital-based obstetric outcomes and an international partnership', *BJOG: An International Journal of Obstetrics & Gynaecology*, vol. 118, no. 13,pp. 1608-16.

Cragin, L., DeMaria, L.M., Campero, L. & Walker, D.M. 2007, 'Educating Skilled Birth Attendants in Mexico: Do the Curricula Meet International Confederation of Midwives Standards?', *Reproductive Health Matters*, vol. 15, no. 30,pp. 50-60.

Creswell, J., W & Plano Clark., V., L 2007, *Designing and conducting Mixed Methods Research*, 1st edn, Sage Publications, Inc, Thousand Oaks, California 91320.

Creswell, J.W. 2003, 'Research Design Qualitative, Quantitative and Mixed Methods ', in C.D. Laughton (ed.)2nd edn, SAGE Publications, Inc., Thousand Oaks, California, pp. 3-26.

CSA 2012, *Ethiopian Demographic and Health Survey 2011*, CSA Ethiopia and ICF International, Addis Ababa, Ethiopia and Calverton, Maryland, USA.

CSA, C.S.A. 2011, *Girls' Education and Family Planning*, Addis Ababa, <http://dhsprogram.com/pubs/pdf/DM27/DM27.pdf>.

Dawson, A., Brodie, P., Copeland, F., Rumsey, M. & Homer, C. 2014, 'Collaborative approaches towards building midwifery capacity in low income countries: A review of experiences', *Midwifery*, vol. 30, no. 4,pp. 391-402.

Dennis-Antwi, J. 2011, 'Preceptorship for midwifery practice in Africa: challenges and opportunities', *Evidence Based Midwifery*, vol. 9, no. 4,pp. 137-42.

Devries, K.M., Kishor, S., Johnson, H., Stöckl, H., Bacchus, L.J., Garcia-Moreno, C. & Watts, C. 2010, 'Intimate partner violence during pregnancy: analysis of prevalence data from 19 countries', *Reproductive Health Matters*, vol. 18, no. 36,pp. 158-70.

EFA, E.F.A. 2013/4, 'New global education goals must prioritise girls', in UNESCO (ed.), *EFA, Global monitoring report*, UNESCO, New York, p. 2, <http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/ED/GMR/pdf/gender-summary-press-release.pdf>.

EFMOE 2014, *Accredited Non-Governement Higher Education Institutions*, Ethiopian Federal Ministry of Education, Addis Ababa, viewed 28th of September 2014, <http://www.moe.gov.et/English/Information/Pages/nghs.aspx>.

EMA 2013, *Engagement in Maternal and Child Health*, EMA, Addis Abebe, Ethiopia.

Ensor, T., Quayyum, Z., Nadjib, M. & Sucahya, P. 2009, 'Level and determinants of incentives for village midwives in Indonesia', *Health Policy and Planning*, vol. 24, no. 1,pp. 26-35.

Ergano, K., Getachew, M., Seyum, D. & Negash, K. 2012, 'Determinants of community based maternal health care service utilization in South Omo pastoral areas of Ethiopia', *Journal of Medicine and Medical Sciences*, vol. 3, no. 2,pp. 112-21.

Erulkar, A.S. & Muthengi, E. 2009, 'Evaluation of Berhane Hewan: A Program to Delay Child Marriage in Rural Ethiopia', *International Perspectives on Sexual and Reproductive Health*, vol. 35, no. 1,pp. 6-14.

Essendi, H., Mills, S. & Fotso, J.-C. 2011, 'Barriers to Formal Emergency Obstetric Care Services' Utilization', *Journal of Urban Health*, vol. 88, no. 2,pp. 356-69.

Fako, T.T., Forcheh, N. & Ncube, E. 2004, 'Prospects of safe motherhood in Botswana: midwifery training and nurses' ability to complete the Botswana obstetric record', *Social Science & Medicine*, vol. 58, no. 6,pp. 1109-20.

Fauveau, V., Sherratt, D.R. & de Bernis, L. 2008, 'Human resources for maternal health: multi-purpose or specialists?', *Human Resources for Health*, vol. 6, pp. 1-15.

Fealy, G.M., Carney, M., Drennan, J., Treacy, M., Burke, J., O'Connell, D., Howley, B., Clancy, A., Mchugh, A. & Patton, D. 2009, 'Models of initial training and pathways to registration: a selective review of policy in professional regulation', *Journal of nursing management*, vol. 17, no. 6,pp. 730-8.

Feilzer, M.Y. 2010, 'Doing mixed methods research pragmatically: Implications for the rediscovery of pragmatism as a research paradigm', *Journal of mixed methods research*, vol. 4, no. 1,pp. 6-16.

Filippi, V., Ronsmans, C., Campbell, O.M., Graham, W.J., Mills, A., Borghi, J., Koblinsky, M. & Osrin, D. 2006, 'Maternal health in poor countries: the broader context and a call for action', *The Lancet*, vol. 368, no. 9546,pp. 1535-41.

Finlay, L. 2002, '"Outing" the researcher: The provenance, process, and practice of reflexivity', *Qualitative health research*, vol. 12, no. 4,pp. 531-45.

FMOE 2011a, *Admissions to Higher Education Institutions*, viewed 21.7 2014, <http://info.moe.gov.et/admhei.shtml>.

FMOE 2011b, *New Innovative Medical Education Initiative.*, MOE, Addis Ababa, viewed 21 July 2014, <http://info.moe.gov.et/nimeiexamresults.shtml>.

FMOH 2010, *Health Sector Development Program IV, 2010/11 - 2014/15*, Report, Ministry of Health, Addis Ababa, Ethiopia.

Fransen, S. & Kuschminder, K. 2009, 'Migration in Ethiopia: History, current trends and future prospects', *Paper Series: Migration and Development Country Profiles, Maastricht Graduate School of Governance*.

Frega, R. 2014, 'Between Pragmatism and Critical Theory: Social Philosophy Today', *Human Studies*, vol. 37, no. 1,pp. 57-82.

Frehywot, S., Mullan, F., Payne, P.W. & Ross, H. 2010, 'Compulsory service programmes for recruiting health workers in remote and rural areas: do they work?', *Bulletin of the World Health Organization*, vol. 88, no. 5,pp. 364-70.

Fullerton, J.T., Johnson, P.G., Thompson, J.B. & Vivio, D. 2011, 'Quality considerations in midwifery pre-service education: Exemplars from Africa', *Midwifery*, vol. 27, no. 3,pp. 308-15.

Fullerton, J.T., Thompson, J.B. & Johnson, P. 2013, 'Competency-based education: The essential basis of pre-service education for the professional midwifery workforce', *Midwifery*, vol. 29, no. 10,pp. 1129-36.

Gage, A.J. 2013, 'Child marriage prevention in Amhara Region, Ethiopia: Association of communication exposure and social influence with parents/guardians' knowledge and attitudes', *Social Science & Medicine*, vol. 97, no. 0,pp. 124-33.

García-Moreno, C., Jansen, H., Ellsberg, M., Heise, L. & Watts, C. 2005, 'WHO multi-country study on women's health and domestic violence against women', *Geneva: World Health Organization*, vol. 204.

Gaym, A., Worku, B., Getaneh, E., Berhe, A. & Tsiguerede, T. 2008, *The national situational analysis of pre - service midwifery training in Ethiopia*, World Health Organization Country Office, Addis Ababa, Ethiopia, Addis Ababa.

Gibbons, L., Belizan, J.M., Lauer, J.A., Betran, A.P., Merialdi, M. & Althabe, F. 2012, 'Inequities in the use of cesarean section deliveries in the world', *American journal of obstetrics and gynecology*, vol. 206, no. 4,pp. 331. e1-. e19.

Gilmour, C., McIntyre, M., McLelland, G., Hall, H. & Miles, M. 2013, 'Exploring the impact of clinical placement models on undergraduate midwifery students', *Women and Birth*, vol. 26, no. 1,pp. e21-e5.

Gosh, B., Salomon, F., Gobeze, A., Phillips, R. & East, M. 2012, 'Why are preganant women and newborns still dying in rural Ethiopia', *African Journal of Midwifery and Women's Health*, vol. 6, no. 3,pp. 115-9.

Graham, W.J., Bell, J.S. & Bullough, C.H. 2001, 'Can skilled attendance at delivery reduce maternal mortality in developing countries', *Safe motherhood strategies: a review of the evidence*, vol. 17, pp. 97-130.

Hamilton, C., Yearley, C. & Boyle, S. 2012, 'Evaluating enquiry - based learning in a new pre - registration programme', *British Journal of midwifery*, vol. 20, no. 2,pp. 129-34.

Hamlin, C. & Little, J. 2001, *The Hospital By the River*, Monarch Books Oxford, UK.

Hamlin Fistula Relief and Aid Fund 2007, 'Mark and Annette Bennett', *Addis Ababa Fistula Hospital Newsletter*, September, p. 4.

Harvey, S.A., Ayabaca, P., Bucagu, M., Djibrina, S., Edson, W.N., Gbangbade, S., McCaw-Binns, A. & Burkhalter, B.R. 2004, 'Skilled birth attendant competence: an initial assessment in four countries, and implications for the Safe Motherhood movement', *International Journal of Gynecology & Obstetrics*, vol. 87, no. 2,pp. 203-10.

Harvey, S.A., Blandón, Y.C.W., McCaw-Binns, A., Sandino, I., Urbina, L., Rodríguez, C., Gómez, I., Ayabaca, P. & Djibrina, S. 2007, 'Are skilled birth attendants really skilled? A measurement method, some disturbing results and a potential way forward', *Bulletin of the World Health Organization*, vol. 85, no. 10,pp. 783-90.

Hogan, M.C., Foreman, K.J., Naghavi, M., Ahn, S.Y., Wang, M., Makela, S.M., Lopez, A.D., Lozano, R. & Murray, C.J.L. 2010, 'Maternal mortality for 181 countries, 1980–2008: a systematic analysis of progress towards Millennium Development Goal 5', *The Lancet*, vol. 375, no. 9726,pp. 1609-23.

Hogberg, U. 2004, 'The Decline in Maternal Mortality in Sweden: The Role of Community Midwifery', *American Journal of Public Health*, vol. 94, no. 8,pp. 1312 - 20.

Horne, M., Woodhead, K., L, M., Smithies, L., Megson, D. & Lyte, G. 2007, 'Using enquiry in learning: From vision to realtiy in higher education', *Nurse Education Today*, vol. 27, pp. 103-12.

Huicho, L., Miranda, J.J., Diez-Canseco, F., Lema, C., Lescano, A.G., Lagarde, M. & Blaauw, D. 2012, 'Job preferences of nurses and midwives for taking up a rural job in Peru: a discrete choice experiment', *PLOS One*, vol. 7, no. 12,pp. e50315-e.

ICM 2010a, *Essential Competencies for Basic Midwifery Practice*, The Hague, the Netherlands, <http://www.internationalmidwives.org/Portals/5/2011/DB%202011/Essential%20Competencies%20ENG.pdf>.

ICM 2010b, 'Global Standards for Midwifery Education 2010, Companion Guidelines', in I.c.o. midwives (ed.)vol. Standard III.1.c, ICM, on line, p. 11, <http://www.internationalmidwives.org/assets/uploads/documents/CoreDocuments/GlobalStandardsforMidwiferyEducation_CompanionGuidelines-Eng.pdf>.

ICM 2011a, *Global Standards for Midwifery Education*, ICM, 1.

ICM 2011b, *International Definition of the Midwife*, International Confederation of Midwives, the Hague, the Netherlands, viewed August 13 2012, <http://www.internationalmidwives.org/Portals/5/2011/Definition%20of%20the%20Midwife%20-%202011.pdf>.

ICM 2011c, *State of the world's midwifery, Main report*, International Confederation of Midwives, Netherlands.

Ireland, J., Bryers, H., van Teijlingen, E., Hundley, V., Farmer, J., Harris, F., Tucker, J., Kiger, A. & Caldow, J. 2007, 'Competencies and skills for remote and rural maternity care: a review of the literature', *J Adv Nurs*, vol. 58, no. 2,pp. 105-15.

Johnson, R.B. & Onwuegbuzie, A.J. 2004, 'Mixed methods research: A research paradigm whose time has come', *Educational researcher*, vol. 33, no. 7,pp. 14-26.

Johnson, R.B., Onwuegbuzie, A.J. & Turner, L.A. 2007, 'Toward a definition of mixed methods research', *Journal of mixed methods research*, vol. 1, no. 2,pp. 112-33.

Kadam, S., Pati, S., Hussain, M.A., Nallala, S., Chakravarty, N., Panda, B., Sahu, B., Chauhan, A.S., Ray, S. & Swain, S. 2012, 'Assessment of factors influencing retention of health workforce in rural and remote areas of Odisha, India', *BMC Proceedings*, vol. 6, no. Suppl 5.

Kahsay, M.N. 2012, 'Quality and Quality Assurance in Ethiopian Higher Education: Critical Issues and Practical Implications',Dissertation thesis thesis, Universiteit Twente, CHEPS/UT Enschede, the Netherlands.

Khan, K.S., Wojdyla, D., Say, L., Gülmezoglu, A.M. & Van Look, P.F. 2006, 'WHO analysis of causes of maternal death: a systematic review', *The lancet*, vol. 367, no. 9516,pp. 1066-74.

Kinfu, Y., Dal Poz, M.R., Mercer, H. & Evans, D.B. 2009, 'The health worker shortage in Africa: are enough physicians and nurses being trained?', *Bulletin of the World Health Organization*, vol. 87, no. 3,pp. 225-30.

Koblinsky, M.A., Arraya, J.C., Campbell, O., Danel, I., Equiluz, R., Feresu, S., Mumbwanda, L., Nyandoro, M., Seoane, G., McCaw-Binns, A., Rivera, A. & Ugalde, M. 2003, *Reducing Maternal Mortality, Learning from Bolivia, China, Egypt, Honduras, Indonesia, Jamaica and Zimbabwe.* , case study, The World Bank, Washington, D.C.

Koblinsky, M.A., Mathews, Z., Hussein, J., Mavalankar, D., Mridha, M.K., Anwar, I., Archadi, E., Adjei, S., Padmanabhan, P. & Van Lerberghe, W. 2006, 'Going to scale with professional skilled care', *The Lancet*, 28th September, pp. 1-10, viewed 14th of April 2012, <http://web.ebscohost.com.ezproxy.lib.uts.edu.au/ehost/pdfviewer/pdfviewer?vid=3&hid=24&sid=703e6151-7365-4231-ab5d-4505da89a811%40sessionmgr10>.

Kruk, M.E., Johnson, J.C., Gyakobo, M., Agyei-Baffour, P., Asabir, K., Kotha, S.R., Kwansah, J., Nakua, E., Snow, R.C. & Dzodzomenyo, M. 2010, 'Rural practice preferences among medical students in Ghana: a discrete choice experiment', *Bulletin of the World Health Organization*, vol. 88, no. 5,pp. 333-41.

Lavender, T., Lugina, H., Vidot, P., Chimwaza, A., Bedwell, C., Donovan, P., Kohi, T., Dlammani, P., Tsekiri, E. & Msuya, M. 2009, 'Capacity building to reduce maternal and neonatal morbidity and mortality', *African Journal of Midwifery and Women's Health*, vol. 3, no. 4,pp. 161-7.

Lestrade, V. 2012, 'Ethiopia; Gender disparity in higher education ', no. 89,19 February 2012, viewed 19 February <http://www.universityworldnews.com/article.php?story=20120219080946487>.

Licqurish, S. & Seibold, C. 2008, 'Bachelor of Midwifery students' experiences of achieving competencies: The role of the midwife preceptor', *Midwifery*, vol. 24, no. 4,pp. 480-9.

Lori, J.R., Rominski, S., Richardson, J., Agyei-Baffour, P., Kweku, N.E. & Gyakobo, M. 2012, 'Factors influencing Ghanaian midwifery students' willingness to work in rural areas: A computerized survey', *International Journal of Nursing Studies*, vol. 49, no. 7,pp. 834-41.

Lori, J.R., Rominski, S.D., Gyakobo, M., Muriu, E.W., Kweku, N.E. & Agyei-Baffour, P. 2012, 'Perceived barriers and motivating factors influencing student midwives' acceptance of rural postings in Ghana', *Human Resources for Health*, vol. 10, no. 1,pp. 17-.

Loudon, I. 2000, 'Maternal mortality in the past and its relevance to developing countries today', *The American Journal of Clinical Nutrition*, vol. 72, no. 1,pp. 241s-6s.

Maclean, G.D. 2003, 'The challenge of preparing and enabling ‘skilled attendants’ to promote safer childbirth', *Midwifery*, vol. 19, no. 3,pp. 163-9.

Maclean, G.D. 2007, 'Promoting skilled attendance for all during childbirth', *British Journal of Midwifery*, vol. 15, no. 1,pp. 25-9.

Manafa, O., McAuliffe, E., Maseko, F., Bowie, C., MacLachlan, M. & Normand, C. 2009, 'Retention of health workers in Malawi: perspectives of health workers and district management', *Hum Resour Health*, vol. 7, no. 1,p. 65.

Mangham, L.J. & Hanson, K. 2008, 'Employment preferences of public sector nurses in Malawi: results from a discrete choice experiment', *Tropical Medicine & International Health: TM & IH*, vol. 13, no. 12,pp. 1433-41.

Mathauer, I. & Imhoff, I. 2006, 'Health worker motivation in Africa: the role of non-financial incentives and human resource management tools', *Human resources for health*, vol. 4, no. 1,p. 24.

McCall, L., Wray, N. & McKenna, L. 2009, 'Influence of clinical placement on undergraduate midwifery students’ career intentions', *Midwifery*, vol. 25, no. 4,pp. 403-10.

McCarthy, C.F. & Riley, P.L. 2012, 'The African Health Profession Regulatory Collaborative for Nurses and Midwives', *Human Resources for Health*, vol. 10, no. 1,p. 26.

Medhanyie, A., Spigt, M., Kifle, Y., Schaay, N., Sanders, D., Blanco, R., GeertJan, D. & Berhane, Y. 2012, 'The role of health extension workers in improving utilization of maternal health services in rural areas in Ethiopia: a cross sectional study', *BMC Health Services Research*, vol. 12, no. 1,pp. 352-60.

Mekonnen, Y. & Mekonnen, A. 2002, 'Utilization of maternal health care services in Ethiopia'.

Michael, Y., Jira, C., Girma, B. & Tushune, K. 2010, 'Health workforce deployment, attrition and density in East Wollega Zone, Western Ethiopia', *Ethiopian journal of health sciences*, vol. 20, no. 1.

MOE 2011, *Accredited Non - Governement Higher Education Institutions*, List of Non Governement HIEs, FDRE, MOE, Addis Ababa, viewed 16th February 2015, <http://www.moe.gov.et/English/Information/Pages/nghs.aspx>.

MoFED 2010, *Ethiopia: 2010 MDGs Report, Trends and prospects for Meeting the MDGs by 2015*, Development Planning and Research Directorate, Addis Ababa, Ethiopia, p. 60, <http://www.undp.org/content/dam/undp/library/MDG/english/MDG%20Country%20Reports/Ethiopia/ethiopia_september2010.pdf>.

Mosley, L. 1964, *Haile Selassie: The Conquering Lion* Prentice - Hall, Inc., Englewood Cliffs, New Jersy.

Mullei, K., Mudhune, S., Wafula, J., Masamo, E., English, M., Goodman, C., Lagarde, M. & Blaauw, D. 2010, 'Attracting and retaining health workers in rural areas: investigating nurses' views on rural posts and policy interventions', *BMC health services research*, vol. 10, no. Suppl 1,p. S1.

Myles, M.F. 1956, *A Textbook for Midwives*, E & S Livingston Ltd, Edingburgh.

Myles, M.F. 1985, *A Textbook for midwives: with modern concepts of obstetric and neonatal care*, 10th edn, Churchill Livingstone, Edinburgh.

Narchi, N.Z., Cruz, E.F. & Gonçalves, R. 2013, 'The role of midwives and nurse-midwives in promoting safe motherhood in Brazil', *Ciência & Saúde Coletiva*, vol. 18, no. 4,pp. 1059-68.

NationMaster 2014, *Country search*, viewed 22 August 2014 2014, <http://www.nationmaster.com/>.

Nyamtema, A., Urassa, D. & van Roosemalan, J. 2011, 'Maternal health interventions in resource limited countries: a systematic review of packages, impacts and factors for change', *BMC Pregnancy & Childbirth*, vol. 11, no. 30, pp. 1-12, <http://www.biomedcentral.com/1471-2393/11/30>.

Pathmanathan, I., Liljestrand, J., Martins, J.M., Rajapaksa, L.C., Lissner, C., De Silva, A., Selvaraju, S. & Singh, P.J. 2003, *Investing in maternal health, learning from Malaysia and Sri Lanka*, The World Bank, Washington DC.

Peace, M. 2012, 'Enquiery -Based learning in midwifery: the lecturers experience ', *British Journal of midwifery*, vol. 20, no. 5,pp. 361-8.

Pereznieto, P. & Jones, J. 2006, *Educational choices in Ethiopia: What determines whether poor children go to school?*, Young Lives, Online.

Peters, M. 2000, 'Safe Motherhood beyond the year 2000: a global perspective', *Midwifery*, vol. 16, no. 1,pp. 2-7.

Petterson, K.O. 2007, 'Major challenges of midwifery in Africa', *British Journal of Midwifery*, vol. 15, no. 8,pp. 470-4.

Population Media Center 2009, *Soap Operas: Making a Difference in Developing Nations*, Population Media Center, Shelburne, Vermont, USA, viewed September 9th, 2014 2014.

Prytherch, H., Kakoko, D., Leshabari, M., Sauerborn, R. & Marx, M. 2012, 'Maternal and newborn health care providers in rural Tanzania: in-depth interviews exploring influences on motivation, performance and job satisfaction', *Rural Rem Health*, vol. 12, p. 2072.

Rayner, P. & Ashcroft, K. 2011, 'Ethiopian Higher Education: Expansion, Dilemmas and Quality', *World Education News and Reviews* vol. Archive, June 1, 2011, <http://wenr.wes.org/2011/06/wenr-june-2011-feature/>.

Renfrew, M.J., McFadden, A., Bastos, M.H., Campbell, J., Channon, A.A., Cheung, N.F., Silva, D.R.A.D., Downe, S., Kennedy, H.P. & Malata, A. 2014, 'Midwifery and quality care: findings from a new evidence-informed framework for maternal and newborn care', *The Lancet*.

Rockers, P.C., Jaskiewicz, W., Wurts, L., Kruk, M.E., Mgomella, G.S., Ntalazi, F. & Tulenko, K. 2012, 'Preferences for working in rural clinics among trainee health professionals in Uganda: a discrete choice experiment', *BMC health services research*, vol. 12, no. 1,p. 212.

Ronsmans, C., Endang, A., Gunawan, S., Zazri, A., McDermott, J., Koblinsky, M. & Marshall, T. 2001, 'Evaluation of a comprehensive home-based midwifery programme in South Kalimantan, Indonesia', *Tropical Medicine & International Health*, vol. 6, no. 10,pp. 799-810.

Ronsmans, C. & Graham, W.J. 2006, 'Maternal mortality: who, when, where, and why', *Lancet*, vol. 368, no. 9542,pp. 1189-200.

Rosenfield, A., Maine, D. & Freedman, L. 2006, 'Meeting MDG-5: an impossible dream?', *The Lancet*, vol. 368, no. 9542,pp. 1133-5.

Russon, B., Andemariam, M. & Haile, T. 2006, 'History and trends of nursing in Eritrea', Historical record, p. 39, viewed 17th August 2012, <http://www.dundee.ac.uk/medden/dlc/Documents/Eritrea.pdf>.

Save The Children 2012a, *Moving ahead on Education* Save the Children international London.

Save the Children 2012b, *Nutrition in the first 1000 days: Sate of the World's Mothers*, Save the Children, London.

Say, L., Chou, D., Gemmill, A., Tunçalp, Ö., Moller, A.-B., Daniels, J., Gülmezoglu, A.M., Temmerman, M. & Alkema, L. 2014, 'Global causes of maternal death: a WHO systematic analysis', *The Lancet Global Health*, vol. 2, no. 6,pp. e323-e33.

Say, L. & Raine, R. 2007, 'A systematic review of inequalities in the use of maternal health care in developing countries: examining the scale of the problem and the importance of context', *Bulletin of the World Health Organization*, vol. 85, no. 10,pp. 812-9.

Schofeild, M. 2004, 'Sampling in Quantitative Research', in M. Victor, S. Gerard, G. Kenneth & A. Rita (eds), *Handbook of Research Methods for Nursing and Health Science*, 2nd edn, Pearson Education Frenchs Forest, Australia, pp. 176-241.

Schoon, M. 2011, 'Discussion platform between midwifery educators and health professionals in the Free State province: opinion', *South African Journal of Obstetrics and Gynaecology*, vol. 17, no. 2,pp. 28-30.

Schoon, M. & Motlolometsi, M. 2012, 'Poor maternal outcomes: A factor of poor professional systems design', *SAMJ: South African Medical Journal*, vol. 102, no. 10,pp. 784-6.

Schoon, M.G. 2013, 'Impact of inter-facility transport on maternal mortality in the Free State Province.', *South African medical journal*, vol. 103, no. 8,pp. 534-7.

Serneels, P., Lindelow, M., Montalvo, J. & Barr, A. 2007a, 'For Public Service of Money: understanding geographical imbalances in the health workforce', *Health policy and planning*, vol. 22, pp. 128-38.

Serneels, P., Lindelow, M., Montalvo, J.G. & Barr, A. 2007b, 'For public service or money: understanding geographical imbalances in the health workforce', *Health Policy and Planning*, vol. 22, no. 3,pp. 128-38.

Serneels, P., Montalvo, J.G., Pettersson, G., Lievens, T., Butera, J.D. & Kidanu, A. 2010, 'Who wants to work in a rural health post? the role of intrinsic motivation, rural background and faith-based institutions in Ethiopia and Rwanda', *Bulletin of the World Health Organization*, vol. 88, pp. 342-9.

Shaw, D. & Cook, R.J. 2012, 'Applying human rights to improve access to reproductive health services', *International Journal of Gynecology & Obstetrics*, vol. 119, pp. S55-S9.

Shiferaw, S., Spigt, M., Godefrooij, M., Melkamu, Y. & Tekie, M. 2013, 'Why do women prefer home births in Ethiopia?', *BMC pregnancy and childbirth*, vol. 13, no. 1,p. 5.

Silverman, D. 2010, *Doing Qualitative Research, A practical handbook*, 3rd edn, SAGE, London.

Stone, P., J 1997, 'Thematic Text analysis: New agendas for analyzing text content', in C.W. Roberts (ed.), *Methods for drawing statistical Inferences from Texts and Transrcipts* Lawrence Erlbaum Associates, New Jersey, pp. 35-54.

Stover, S.A. 2011, 'Born by the Woman, Caught by the Midwife: The Case for Legalizing Direct-Entry Midwifery in All Fifty States', *Health Matrix*, vol. 21, p. 307.

Teferra, A.S., Alemu, F., Mazengia.   & Woldeyohannes, S., Meseret, 2012, 'Institutional delivery service utilization and associated factors among mothers who gave birth in the last 12

months in Sekela District, North West of Ethiopia: A community--based cross sectional study', *BMC Pregnancy & Childbirth*, vol. 12, no. 1,pp. 74-84.

Teklehaimanot, T. 2012, *Ethiopian treasures, Languages*, Ethiopian Languages viewed 13.1.2012, <http://www.ethiopiantreasures.co.uk/pages/language.htm>.

Thaddeus, S. & Maine, D. 1994, 'Too far to walk: maternal mortality in context', *Social science & medicine*, vol. 38, no. 8,pp. 1091-110.

The World Bank 2005, *Implementation completion report on a loan/credit/grant in the amount of sdr 74,300,000 (us$ 100 million equivalent) to the federal democratic republic of ethiopia for an education sector development project*, the World Bank, Report No: 30706.

TheWorldBank 2014a, *Life expectancy at birth, female (years)*, TheWorldBank, viewed 20.8.2104 2014, <http://data.worldbank.org/indicator/SP.DYN.LE00.FE.IN>.

TheWorldBank 2014b, *Maternal mortlaity ration (modeled estimate per 100,000 live births)*, viewed August 20th 2014, <http://data.worldbank.org/indicator/SH.STA.MMRT>.

TheWorldBank 2014c, *Maternity mortality ratio (model estimates, per 100,000 live births)*, <http://data.worldbank.org/indicator/SH.STA.MMRT>.

TheWorldBank 2014d, *Total Fertility Rate*, The World Bank, online, viewed 22nd of September 2014, <http://data.worldbank.org/indicator/SP.DYN.TFRT.IN>.

Thomas, A.W. 2004, *Sytems Audit, Hamlin Fistula Welfare and Reseacrh Trust*, unpublished.

Tracy, S., Barclay, L. & Brodie, P. 2000, 'Contemporary issues in the workforce and education of Australian midwives', *Australian Health Review*, vol. 23, no. 4,pp. 78-88.

Tran, N.T., Portela, A., de Bernis, L. & Beek, K. 2014, 'Developing Capacities of Community Health Workers in Sexual and Reproductive, Maternal, Newborn, Child, and Adolescent Health: A Mapping and Review of Training Resources', *PloS one*, vol. 9, no. 4,p. e94948.

UN 2013, *The Millennium Development Goals Report 2013*, UN, United Nations, New York, E.13.I.9.

UN 2014, *We can end poverty 2015 Millenium Development Goals* Education, Department of public information, United Nations, viewed September 1st 2014, <http://www.un.org/millenniumgoals/education.shtml>.

UNFPA 2011, *State of the Worlds Midwifery Report*, vol. Part 2.

UNFPA 2012a, *Ethiopia Accelerates Training of Midwives*, UNFPA, web, viewed 20 August 2012, <http://www.unfpa.org/public/home/news/pid/10747>.

UNFPA 2012b, *When Pregnancy Harms: Obstetric Fistula*, UNFPA, web, viewed 22d August 2012, <http://www.unfpa.org/webdav/site/global/shared/documents/Reproductive%20Health/Fact%20Sheets/Fistula_UNFPA%20Fact%20Sheet_July%209%202012.pdf>.

UNFPA & EMA 2012, *The State of the Ethiopia's Midwifery, based on the Ethiopian Midwives Association database*.

UNFPA & ICM 2011a, *The state of the world's midwifery report, delivering health and saving lives*, the united nations poulation fund.

UNFPA & ICM 2011b, *State of the Worlds Midwifery, Country profiles*, the International Confederation of Midwives, Netherlands.

UNFPA, ICM & WHO 2014, *A Universal Pathway, A Woman's Right to Health*, The USA

UNICEF 2010, *Country statistics - Ethiopia*, viewed 15. 1. 2012, <http://www.unicef.org/infobycountry/ethiopia_statistics.html>.

UNICEF 2014, *Maternal Health Delivery care*, viewed 20. 8. 2014 2014, <http://data.unicef.org/maternal-health/delivery-care>.

Uys, L.R. & Middleton, L. 2011, 'Internationalising university schools of nursing in South Africa through a Community of Practice', *International Nursing Review*, vol. 58, no. 1,pp. 115-22.

Van Lerberghe, W. & De Brouwere, V. 2000, 'Of blind alleys and things that have worked: history's lessons on reducing maternal mortality', *Safe motherhood strategies: a review of the evidence*, pp. 7-35.

Verveer, M. 2010, 'Targeting girls in the Name of Tradition: Child Marriage', *MyStateDepartment*, Remarks, July 15, 2010, viewed 21.7.2014, <http://www.state.gov/s/gwi/rls/rem/2010/144989.htm>.

Waiswa, P., Kallander, K., Peterson, S., Tomson, G. & Pariyo, G.W. 2010, 'Using the three delays model to understand why newborn babies die in eastern Uganda', *Tropical medicine & international health*, vol. 15, no. 8,pp. 964-72.

WHO 2011a, *Developing a midwifery curriculum for safe motherhood: Guidelines for midwifery education programmes*, vol. 5, WHO.

WHO 2011b, *Transformative scale up of Health Professional education*, WHO, Geneva.

WHO 2012, 'Skilled Birth Attendants', *Maternal, newborn, child and adolescent health*, The World Health Organisation, online, <http://www.who.int/maternal_child_adolescent/topics/maternal/skilled_birth/en/index.html>.

WHO 2013, *Research for Universal Health Coverage*, ISBN 978 92 4 069083 7 (PDF), WHO, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland.

WHO 2014a, *Africa Health Observatory analytical Summary*, WHO, online, viewed 11th of February 2015 2015, <http://www.aho.afro.who.int/profiles_information/index.php/Ethiopia:Analytical_summary_-_Health_workforce#cite_note-twenty-six-0 >.

WHO 2014b, *Australia: Health Profile*, viewed 19.8.2014 2014, <http://www.who.int/gho/countries/aus.pdf?ua=1>.

WHO 2014c, *WHO African Region: Ethiopia*, viewed 20.8.2014 2014, <http://www.who.int/countries/eth/en/>.

WHO, ICM & FIGO 2004, *Making pregnancy safer: the critical role of the skilled birth attendant*, 92 4 159169 2, vol. 2013, the WHO, Geneva, 13th of February

WHO, UNICEF, UNFPA & THEWORLDBANK 2014, *Trends in Maternal Mortality: 1990 to 2013*, The World Bank Group, online.

Woldemicael, G. & Tenkorang, E.Y. 2010, 'Women's Autonomy and Maternal Health-Seeking Behavior in Ethiopia', *Maternal & Child Health Journal*, vol. 14, no. 6,pp. 988-98.

Worku, A.G., Yalew, A.W. & Afework, M.F. 2013, 'Factors affecting utilization of skilled maternal care in Northwest Ethiopia: a multilevel analysis', *BMC international health and human rights*, vol. 13, no. 1,p. 20.

Zurn, P., Codjia, L., Sall, F.L. & Braichet, J.-M. 2010, 'How to recruit and retain health workers in underserved areas: the Senegalese experience', *Bulletin of the World Health Organization*, vol. 88, no. 5,pp. 386-9.

7 Appendices

I. Hamlin College of Midwives - curriculum outline

II. Research information sheet

III. Research consent form

IV. UTS Ratification of Ethics letter

V. Table of literature for the literature review

VI. Quantitative data table for Family Planning in the Health Centres– 12 months activity

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7.1 Appendix I: Hamlin College of Midwives - curriculum outline

1. Introduction

THE HAMLIN COLLEGE OF MIDWIVES

"A Midwife for Every woman"

Behind every project there is a dream and our dream at the Hamlin College of Midwives is to provide for every rural community a skilled birth attendant who will provide services for the pre-natal, intra-natal and post natal period for every woman within the predetermined catchment area. Her work will also include Public health activities related to Midwifery practice.

To achieve this dream we consider as essential to give an outstanding training for Midwives who will work in their own communities.

Our Mission:

Dedicated, with God's compassion to recruit, equip, deploy and support highly skilled, qualified, trustworthy and accountable Midwives, who are committed to serve women and their families in rural Ethiopia.

This mission statement guides any actions we undertake within the College and provides a sense of direction and guides our decisions.

To give us a long term view on our commitment we defined **Our Vision** as:

A Midwife for every woman:

T**hat every woman in Ethiopia** has access to a **well trained Midwife.**

We cannot achieve our work at the College without common **Values** we share as a Team and those values are:

- Quality in teaching and innovation in clinical practice
- Being cost effective, respecting resources (financial, structural and environmental) and using them efficiently.
- To consider professional development for the staff as well as for Midwifery as profession in partnership.
- To create a peaceful environment at work for the students and for the staff at any level.
- To consider integrity, honesty and love as component of a professional behaviour.

A brief country profile

Ethiopia is a vast country of diverse geography and people. Situated in East Africa, Ethiopia is "land locked", bordered by Eritrea, Djibouti and Somalia to its North and East, Kenya to the South, Sudan and South Sudan to West. The land area is estimated to be 1.1 million square Km and the current population is approximately 80million (FMOH, Policy Plan Directorate, 2009). The climate of Ethiopia varies from semi arid desert, temperate high altitude areas to sub-tropical lowlands.

Ethiopia has rich and diverse cultures and people groups. There are more than 180 languages. The two largest official religions are Ethiopian Orthodox Christianity and Islam. Despite being rich in natural resources, most Ethiopians survive on less than $1.25US a day (UNICEF 2009). 83.7% of the population are subsistence agriculturalists, barely producing enough to live on. This leaves the majority of the population very vulnerable to natural disaster, famine and disease. Ethiopia experiences a heavy level of disease with growing incidences of communicable infections. Many Ethiopians face high morbidity and mortality largely attributed to potentially preventable infectious diseases and nutritional deficiencies (FMOH Policy Plan Directorate, 2005).

The average life expectancy is between 50 and 53 years (FMOH Policy Plan Directorate, 2005). The most common cause of mortality are communicable diseases such as Malaria and TB, however, an alarming number of women die from complications of pregnancy, labour and puerperium. The official figure for Maternal Mortality is 470/100 00 (UNFPA 2011). Direct obstetric complications account for 85% of these deaths as well as other chronic conditions. The number of women surviving obstructed labour and suffering from Obstetric Fistula is conservatively estimated at 9000 new cases every year (UNFPA 2006).

The status of women in Ethiopia

Females throughout Ethiopia have low social status from the moment they are born. Boy children are sent to school in preference of their sisters. From their early years girl children are relied upon by their families to carry out demanding work such as collecting firewood and water, caring for siblings, preparing food, which is also very labour intensive, working in the field, carrying large loads to the market place and washing clothes at the river. This demanding physical work and minimal calorie intake will result in poor growth and development, leading to small stature, including a smaller than normal pelvis (UNFPA, 2001)

Early marriage

It is cultural practice, but forbidden by law, in some areas of Ethiopia for girls to be betrothed as early as 8 years of age. They then live with their in-laws. The marriage is generally consummated after the onset of menstruation. Consequently young girls become pregnant well before their bodies are fully developed. This is compounded by the problem of a contracted pelvis due to stunted growth (UNFPA 2001)

A structured interview of 639 fistula patients treated at the Addis Ababa Fistula Hospital between May 1999 and February 2000 revealed that the mean age of Fistula patients presenting at the hospital was 22 years. The age at first marriage was 14.7 and the mean age deemed as the causative delivery was 17.8 years. More than 83% had their causative delivery before the age of 20, 64% were primiparas and the average length of labour was 3.8 days (range of 1 to 10 days). Accessing a health institution is a major problem among fistula patients, mainly due to long distances, poor transportation, lack of money and many regarding parturition as manageable at home (Muleta& Abebe 2008)

In Ethiopia, less than 17% of women have an institutional delivery (FMOH Policy Plan Directorate, 2009). Most women have their delivery in their home without a skilled attendant. This is fine in most situations when the pregnancy, birth and post partum period are normal, but disastrous when there are complications and long distances between the community and adequate health facilities. An obstetric fistula is directly linked to one of the major causes of maternal mortality, obstructed labour (Muleta& Abebe, 2008) Obstructed labour is where the mother's pelvis is too small to enable the baby to be delivered without help. The labour can last many days and often result in the death of the mother and child. Should the mother survive, she will probably develop a fistula and her baby will most likely be stillborn.

A fistula is an abnormal opening between the wall of the bladder and/or rectum and the wall of the vagina, due to prolonged pressure of the baby's head against the mothers' pelvis, crushing and cutting off the blood supply to the soft tissue of the walls of the bladder/rectum and vagina. Following the birth, the woman is incontinent of urine and/or faeces. Many of these women desperately hope for the urine to dry up and may spend many days or months lying down hoping for it to stop. This may lead to paralysis due to muscle wasting and contractures.

The loss of her baby is the first of many losses. In most cases her husband will leave her for a new wife, her in-laws will send her back to her family, and her family will push her out of the family home. The loss of her health through re-occurring or chronic infection may stop her from working and this will mean she will receive even less food than before. She is shunned

in public places such as the market, family gatherings and church. This social isolation understandably leads to depression and it is not surprising that some women cannot cope with the pain and suffering (UNFPA 2001)

2. A Rationale for the establishment of Hamlin Fistula Ethiopia

Hamlin Fistula Ethiopia (HFE) established by Dr's Reginald and Catherine Hamlin since 1975, has been dedicated to the repair of women with childbirth injuries, namely, obstetric fistula. The main hospital is located in Addis Ababa. In recent years, Hamlin Fistula Ethiopia has built five new Fistula Outreach Centre's in regional capitals. These regional centres bring the fistula repair services closer to rural communities, increasing the overall capacity of the hospital but also enabling the hospital to be more effectively involved in "prevention of fistula" work.

Hamlin Fistula Ethiopia recognizes the important role highly skilled midwives can make to improving reproductive health and reducing maternal and infant mortality and morbidity rates. As part of the Hamlin Fistula Ethiopia's strategy to reduce maternal mortality and morbidity, a College dedicated to the training of Midwives was opened in October 2007 to educate highly skilled midwives who are selected from rural communities and will be deployed back to their area of origin in rural Ethiopia.

3. A Need for Midwives

There is a desperate shortage of health professionals across all medical disciplines in Ethiopia. The number of gynaecologist is less than 77 (FMOH Policy Plan Directorate, 2005) and presently there are 2002 midwives registered with the Ministry of Health (FMOH Policy Plan Directorate, 2009).

"Investing in human capital such as Midwives for childbirth is the wisest investment we can ever make, to ensure sustainability, ownership, fulfilment and consistently high results, we have to ensure that we train:"The right people from the communities" they will serve In the right areas, in order to address all the needs of the community

It is (not) compromising quality to create second rate skilled attendants for developing countries. It's about ensuring; that every country has the right cadres of health workers to meet its specific needs and a plan; to make these human resources available. It is not about choosing routine and emergency obstetric care, it is about giving women access to the care they need when they need it. It is about skilled care before pregnancy, during pregnancy, during and after delivery."(Phumaphi, 2005)

The Hamlin College of Midwives under Hamlin Fistula Ethiopia is committed to educating high quality midwives and to contribute to capacity building of the country for improving maternal and child health. This curriculum was developed with that goal in mind. *Revised January 2012.

REFERENCE LIST

DEPARTMENT OF MAKING PREGNANCY SAFER, (2006), Obstetric Fistula Guiding Principles for clinical management and programme development (IMPAC)

FMOH, POLICY PLANNING DEPARTMENT (2005) Health and health related indicators. Federal Democratic Ministry of Health.

FMOH POLICY PLAN DIRECTORATE.(2009),Health and Health Related Indicators, Federal Democratic Republic of Ethiopia ministry of Health

Muleta. M, Abebe.S,. (2008), obstetric fistula and transport access to emergency obstetric care services in Sidama Zone southern Ethiopia The Addis Ababa Fistula Hospitalhttp://www.mobilityandhealth.org/case/case_af.php (accessed 3.1.2012)

Phumaphi.J, (2005) Bulletin of the World Health Organisation Assistant Director-General Family and Community health, April 2005, 83 (4)

UNICEF (2009) country statistics – Ethiopia (online) Available: http//www.unicef.org/infobycountry/ethiopiastatistics.html (accessed 15.1.2012)

UNFPA (2011) STATE OF THE WORLDS MIDWIFERY.Presented at the ICM in Durbin, June 201.

UNFPA, Technical Support Division (2001), Report on the meeting for prevention and treatment of Obstetric Fistula.UNFPA, AMDD AND FIGO.18-19 July, London.

http://www.unfpa.org/webdav/site/global/shared/documents/publications/2001/fistula_report_2001.pdf accessed 2.1.2012

4. Programme aims

The curriculum of study is at a Bachelor level with a commitment to "competency based training" and as such will enable students to develop into*:

1. Safe, competent and autonomous practitioners of midwifery, working in partnership with **rural** women, their newborn's, and their families; giving support, care, advice and education during pregnancy, labour and the post partum period*.
2. Contribute to the reduction of maternal and infant mortality and morbidity, by the early detection of life threatening conditions and carrying out timely emergency measures, which may include referral to the appropriate level of health facility*.
3. Be caring and sensitive practitioners, facilitating choice, in a culturally sensitive way, responding to individuals, working alongside community based health providers, families within **rural** communities and health facilities*.
4. Work well in a multi-disciplinary team, liaising with community leaders to promote access and uptake of maternity services and coordinate the transport system for referral of emergency cases*.
5. Committed to lifelong learning, recognizing professional accountability in developing knowledge and practice*.
6. Be eligible for registration by a panel of assessors and be recognized as a certified (registered) Midwife by the Federal Ministry of Health*.

5. Objectives

5.1. General Objective

For the quality formation of holistic, competently skilled and accountable midwife professionals who are prepared to practise autonomously and confidently in the challenging setting of resource poor and remote rural health centres.

5.2. Specific objectives:

On completion of the BSc in Midwifery students will be able to:

Knowledge and understanding
1. Demonstrate knowledge and understanding of the factors effecting **communication** between midwives and their clients and other health professionals and be able to use this knowledge to evaluate and develop their own communication skills.
2. Demonstrate a sound knowledge and understanding of **anatomy, physiology and microbiology** and how these affect and are affected by the childbearing process and are able to use this knowledge in the assessment of women's needs and the planning of effective midwifery care for women and their babies at all stages of the child bearing process – and be able to apply this knowledge in for women seeking care in family planning and other areas of women's health.
3. Demonstrate their knowledge and understanding about the social and cultural factors which affect women's beliefs about and experiences of childbearing and be able to use this knowledge in practicing **women centred and individualised midwifery care.**
4. Describe the complex **ethical, legal and professional frameworks** that govern and guide midwifery practice and be able to apply this knowledge to specific clinical situations in order to determine best practice.
5. Demonstrate a comprehensive knowledge and understanding of the research process and are able to analyse research and **evidence – based** midwifery care and be able to use this knowledge to critically analyse and evaluate different care strategies and to facilitate **safe and individualised childbirth** experiences for women and their families.
6. Demonstrate a sound knowledge and understanding of the cultural and social factors influencing Infant feeding and the health implications of these practises; use this knowledge to develop effective strategies to promote successful **breastfeeding** and support of families in safe feeding practices.

7. Identify deviations from normal resulting in complicated midwifery scenarios and use this knowledge to assess complex, unexpected and emergency situations and determine appropriate midwifery care activities to achieve the best outcome for women and their babies.
8. Demonstrate a knowledge and understanding of leadership, health service management and use this knowledge to critically evaluate existing services, management processes with midwifery care settings while also developing strategies to improve and increase the acceptance of midwifery services among rural communities.
9. Demonstrate a knowledge and understanding of the major health issues affecting local populations and of current public health strategies to tackle these issues and be able to critically evaluate such strategies within the midwifery sphere of practice.
Clinical practice skills
1. Assess the health, progress and needs of pregnant women, new mothers and their babies in partnership with women and their families. Make a plan for the birth including discussing preparedness based on this assessment and evaluate the effectiveness of the care provided.
2. Provide care for pregnant women, new mothers and their babies, demonstrating the safe application of appropriate midwifery skills including BEmOC interventions and emergency procedures including timely referral when necessary.
3. Apply universal safety precaution in all appropriate situations and demonstrate Infection prevention strategies such as decontamination and sterilisation of equipment.
4. Give competent and compassionate counselling to women and their partners about prevention of mother to child transmission of HIV and carry out appropriate testing and treatment (and prophylaxis) when necessary.
5. Maintain accurate and detailed records (including a signature of the reporting midwife) of all midwifery care given and of relevant communications with clients, other healthcare professional s and ambulance drivers, including recording all activities in the appropriate register and completing summarised reports for the Woreda health office.
6. Prescribe and administer appropriate medications to childbearing women and their babies and appropriate family planning methods to women seeking to plan/limit their families.

7. Communicate, effectively, information about care options to women (and their families where appropriate) in a way which enables them to make informed decisions about their care in all areas of midwifery care and reproductive health.
8. Create and effectively utilise opportunities to promote the health and wellbeing of women and their families through the provision of information, education, community outreach and other public health strategies – working in partnership with health centre colleagues, HEWs and other community based health agents.
9. Identify priorities within the workload of the midwifery team, utilising effective time management skills and assessing the needs of the community - Develop and follow through with an activity plan for effective practice.

Attitudes and personal qualities
1. Demonstrate an open, respectful and approachable manner and the ability to form supportive relationships with clients and colleagues by the use of effective and sensitive communications skills.
2. Demonstrates respect for peers and clients whatever their cultural, religious or social background.
3. Demonstrates good team working skills being able to analyse and appreciate different roles within a multi professional team, communicate effectively, give and receive feedback, promote a team approach to problem solving and facilitate an effective working arrangement that evenly shares the burden of the work load.
4. Maintains privacy and confidentiality for all clients in their care.
5. Apply skills of reflection and problem solving to new situations, assessing their own learning professional development needs.

6. Admission Requirements:

Requirements for Direct Entry Midwifery (see Annex 3 for the outline of the selection process)	
1	Come from a selected rural area (this is the priority of the mission of HCM)
2	Completed Preparatory school and achieved the necessary matriculations points for that specific year (for direct entry only)
3	Pass both the interview and entrance examination of the college (demonstrating a reasonable level of English)
4	Demonstrate an interest in becoming a midwife: Comment: This is a challenging criterion however according to both the WHO and ICM this is important. Staffs try to determine this through the interview process.
5	Agrees to be deployed close to their rural area after graduation for six (6) years (with a signed agreement)
6	Have a background in the natural sciences, as according to the Ministry of Education (for Direct Entry only)
7	Medically fit (will undergo a medical examination).
8	Female Justification: It is our belief that when given a choice, most women prefer to have a female midwife in attendance. In Ethiopia however there is a dominance of males in the midwifery profession at the BSc level. The HCM would like to create an environment where there is a positive discrimination towards females from rural areas into higher education in a profession where there is already a preference for their services by women clients.
9	Have a minimum age of 18 years
Post registration candidates (such as those with TVET or equivalent) must fulfil points 1, 3, 4,5,7,8 and 9 from the above requirements and the following additional requirements:	
1	Present their original Diploma and transcript
2	Pass the COC examination (Certificate of Competency)

3	Pass the Ethiopian Higher education entrance certificate examination (EHEECE)
4	Have completed 2 years of service

***these requirements are subject to change according the any changes within the MOE.**

7. Graduation requirements:

In order to graduate from the Hamlin College of Midwives students are required to have fulfilled all of the following:

- Completed 60 Theoretical credit hours for major courses. (one credit hour =16 contact hours)
- Completed 12 credit hours for common courses
- Completed 29 credits for supportive courses
- Completed 43 Clinical credit hours (one credit hour = 65 contact hours)
    - Complete a total of 142 credit hours
- Achieved a C grade (> 60%) for all theoretical courses
- Achieved an accumulative grade (GPA) of > 2 points
- Achieved a **Pass** on all clinical demonstration examinations
- Achieved a comprehensive list of midwifery clinical competencies. See detailed list of at the end of this document:

8. Degree Nomenclature

Upon the successful completion of this program, the graduate will be given

THE DEGREE OF BACHELOR OF SCIENCE IN MIDWIFERY (BSc Midwifery)

9. Graduate Profile

Upon completion of **BSC** in midwifery programme, the graduates will be expected to have the following competencies that are taken from:

Adapted from the "Essential Competencies for Midwifery Practice", the International Confederation of Midwives (2010) http://www.internationalmidwives.org

Competency 1: Midwives have the requisite knowledge and skills from the social sciences, public health and ethics that form the basis of high quality, culturally relevant, appropriate care for women, newborn and childbearing families.

Competency 2: Midwives provide high quality, culturally sensitive health education and Services to all in the community in order to promote healthy family life, planned pregnancies and positive parenting.

Competency 3: Midwives provide high quality antenatal care to maximize the health during

Pregnancy and that includes early detection and treatment or referral of selected complications.

Competency 4: Midwives provide high quality, culturally sensitive care during labour, Conduct a clean and safe delivery, and handle selected emergency situations to maximize the health of women and their newborn.

Competency 5: Midwives provide comprehensive, high quality, culturally sensitive postnatal care for women.

Competency 6: Midwives provide high quality, comprehensive care for the essentially healthy infant from birth to two months of age - however in Ethiopia midwives area also responsible for early childhood health up to 5 years of age.

10. Academic Grading System and method of assessment

Methods of assessment

- Course work
- Participation in Problem Based Learning (PBL) and presentations.
- Assignments, term papers and reports
- Quizzes
- Examinations, written and oral presentations
- Clinical skills examinations/VIVAs (Pass or Fail only, and students cannot continue to the clinical practice area until they have passed the clinical skills required)

The grade weighting of each of these is also determined by the instructors concerned in reference to course objectives specified in the curriculum.

Grading system

Grade	8 Points	9 Numerical Score (%)	10 Description
A+	4	>95	EXCELLENT
A	4	90 – 94.9*	EXCELLENT
A-	3.66	86 – 89.9*	VERY GOOD
B+	3.33	82 – 85.9*	VERY GOOD
B	3	77 – 81.9*	GOOD
B-	2.66	73 – 76.9*	GOOD
C+	2.33	69 – 72.9*	GOOD
C	2	63 – 68.9*	SATISFACTORY/PASS
C-	1.66	60 – 62.9*	SATISFACTORY/PASS
D	1	51 – 59.9*	UNSATISFACTORY/ RE EXAMINE.
F	0	<50	Re-examine will be submitted to the academic committee.

Preliminary explanation on arrangement of theory and practice hours

The programmed time is divided between academic study and clinical practice, giving approximately **1536 hours / 4 years (35%) academic study** and **2857 hours / 4 years (65%) of clinical practice.**

In this program a normal working day is considered to be 7 ½ hours in length. Lecture days commonly include 6 periods of teaching session and allow for a further 1 ½ hours of private study each day. **N.B.** that 5 days per week students have lecture days and 1 day per week is dedicated to clinical practice to maintain acute their skills and abilities in Practice.

A normal shift in a clinical placement setting should normally be 7 hours. On some occasions students may work longer shifts. For example **night shifts** are usually longer than 7 hours (average of 13hrs), student off duty will be adjusted to take account of these longer shift times.

Rationale of Course coding

We choose to adjust our curriculum to Ethiopian standards and to nomenclature our courses by using an acronym for the title and a three digits system for the coding.

First digit: Year (1 to 4)
Second digit: Semester (1st or 2nd)
Third digit: Course number (1 to 9)

Example:

EPI 227	Epidemiology		2	32

This Course title should be read as follow:

Epidemiology is taught in 2nd year, 2nd semester, course no 7, has a total of 2 credits hours with 32 contact hours (and no laboratory session)

Note: all the shaded parts of the tables coming next show Clinical Practice

11. List of courses and classification

11.1. Major courses in Theory and in Practice

Course Code	11 Course Title	12 Lab	Clinical hours	Credit Hours	Contact Hours
KMW 111	Key concepts in midwifery practice	12.1.1	12.1.2	1	16
APH 112	Anatomy and Physiology I	12.1.3	12.1.4	4	64
FMW 113	Fundamental Midwifery Skills	12.1.5	12.1.6	2	32
FMW 113	Fundamental Midwifery Skills (Lab session)	2	13	14	64
FMW 117	**Fundamental Midwifery Skills (Clinical practice)**	**14.1.1**	**4**	**15**	**260**
NMW 121	Normal Midwifery	**15.1.1**	15.1.2	6	96
NMW 121	Normal Midwifery (Lab session)	1	16	17	32
APH 122	Anatomy and Physiology II	17.1.1	17.1.2	4	64
NMW 125	**Normal Midwifery Practice (Clinical practice)**	**17.1.3**	**4**	**18**	**260**
PHA 212	Pharmacology	18.1.1	18.1.2	3	48
BMW 215	Building Midwifery Skills inc First Aid	18.1.3	18.1.4	2	32
BMW 215	Building Midwifery Skills inc First Aid (Lab session)	2	19	20	64
BMW 216	**Building midwifery Skills (Clinical practice)**	**20.1.1**	**4** **21**	**22**	**260** **23**
BFI 221	Breast feeding and infant nutrition	23.1.1	23.1.2	2	32
NEO 222	Neonatology:	23.1.3	23.1.4	2	32
PED 225	Paediatrics I	23.1.5	23.1.6	2	32
BFI 228	**Breast feeding/neonates (Clinical practice)**	**23.1.7**	**2** **24**	**25**	**130** 26

NEO 229	**Neonatology ICU / Paediatrics** **(Clinical practice)**	**26.1.1**	**3**	**27**	**195**
MPH 311	Midwife and public health: health education and promotion	27.1.1	27.1.2	2	32
MDO 312	Medical disorders	27.1.3	27.1.4	2	32
CMW 314	Complications in childbirth and the role of the Midwife I	27.1.5	27.1.6	4	64
PED 316	Paediatrics II	27.1.7	27.1.8	2	32
MDO 317	**Medical Disorders** **(Clinical practice)**	**27.1.9**	**1** **28**	**29**	**65** **30**
CMW 318	**Complications in midwifery practice** **(Clinical practice)**	**30.1.1**	**2**	**31**	**130**
PED 319	**Paediatrics II** **(Clinical practice)**	**31.1.1**	**2**	**32**	**130**
GYN 321	Gynaecology	32.1.1	32.1.2	2	32
CMW 322	Complications in childbirth and the role of the Midwife II	32.1.3	32.1.4	4	64
FPL 323	Family Planning	32.1.5	32.1.6	2	32
GNY 325	**Gynaecology** **(Clinical practice)**	**32.1.7**	**2** **33**	**34**	**130** **35**
CMW 326	**Complications in Midwifery care** **(Clinical practice)**	**35.1.1**	**2**	**36**	**130**
FPL 327	**Family Planning** **(Clinical practice)**	**36.1.1**	**2**	**37**	**130**
EOC 414	Emergency Obstetric Care	37.1.1	37.1.2	2	32
RPR 415	Individual research project I	37.1.3	37.1.4	3	48
EOC 416	**Emergency Obstetric care** **(Clinical practice)**	**37.1.5**	**2** **38**	**39**	**130** **40**
MHM 417	**Mental Health in Midwifery** **(Clinical practice)**	**40.1.1**	**1**	**41**	**65**
DSC 421	Advanced diagnostic skills: advanced clinical examination/ultra sound/pathology and laboratory techniques	41.1.1	41.1.2	2	*32*
RPR 422	Individual research project II	41.1.3	41.1.4	2	32

DSC 423	**Advanced diagnostic skills** (Clinical practice)	41.1.5	2 42	43	130 44
INT 424	**Internship** (Clinical practice)	44.1.1	8	45	520
Total		5	41	55	3705

11.2. Supportive Courses

Course Code	Course Title	Lab	Credit Hours	Contact Hours
46 NUT 213	46.1.1 Nutrition	46.1.2	46.1.3 2	47 32
48 MIP 214	48.1.1 Microbiology and Parasitology	48.1.2	48.1.3 3	49 48
50 MIP 214 (Lab)	Microbiology **Lab session**	50.1.1 1	51	52 32
PMW 223	Psychology for midwives	52.1.1	2	32
SMW 224	Sociology for Midwives	52.1.2	2	32
COD 226	Communicable diseases	52.1.3	2	32
EPI 227	Epidemiology	52.1.4	2	32
COC 313	Communication and counselling: facilitating decision making and dealing with grief	52.1.5	2	32
BST 315	Biostatistics	52.1.6	2	32
RME 324	Research methodology	52.1.7	3	48
EMW 114	The law, Ethics and Communication for Midwives	52.1.8	2	32
EHM 411	Environmental health and the midwife	52.1.9	2	32
HSM 412	Health Service Management	52.1.1	3	48
MHM 413	Mental health care in Midwifery Practice	52.1.1	2	32
	Total	**1**	**29**	**496**

53

11.3.General Education Courses

53.1.1 53.1.2

Course Code	Course Title	Lab	Credit Hours	Contact Hours
IT 115	Information Technology I	53.1.3	2	32
ENG 116	Academic English I	53.1.4	3	48
ENG 123	Academic English II	53.1.5	3	48
IT 124	Information Technology II	53.1.6	1	16
CED 211	Civics and Ethical education	53.1.7	3	48
Total		**54**	**12**	**192**

12. Sequence of courses per Year (Theory and Practice)

Course no. 1st year	[55] Subject	[56] Lab	Credit hours	Contact hours
Year I, Semester I				
KMW111	Key concepts in midwifery practice	56.1.1	1	16
APH112	Anatomy and Physiology I	56.1.2	4	64
FMW113	Fundamental Midwifery Skills	56.1.3	2	32
FMW113	Fundamental Midwifery Skills (Lab session)	2	57	64
EMW114	The law, Ethics and Communication for Midwives	57.1.1	2	32
IT115	Information Technology I	57.1.2	2	32
ENG116	Academic English I	57.1.3	3	48
		Total theory credit	16	288
FMW117	Fundamental Midwifery skills (clinical practice)	57.1.4	4	260
		Total credits	**20**	**548**
Year I, Semester II				
NMW121	Normal midwifery	57.1.5	6	96
NMW121	Normal midwifery (Lab session)	1	58	32
APH122	Anatomy and physiology II	58.1.1	4	64

ENG123	Academic English II		3	48
IT124	Information Technology II	58.1.2	1	16
Total theory credits			15	256
NMW125	Normal Midwifery practice (clinical practice)	58.1.3	4	260
Total credits			19	516
Total credits 1st year			**39**	**1064**

Course no. 2nd year	[59] Subject	[60] Lab	Credit hours	Contact hours
Year II, Semester I				
CED211	Civics and Ethical education	60.1.1	3	48
PHA212	Pharmacology	60.1.2	3	48
NUT213	Nutrition	60.1.3	2	32
MIP214	Microbiology and Parasitology	60.1.4	3	48
MIP214	Microbiology and Parasitology (Lab session)	1	61	32
BMW215	Building Midwifery Skills inc First Aid	61.1.1	2	32
BMW215	Building Midwifery Skills inc First Aid	2	62	64
		Total theory credit	16	304
BMW216	Building Midwifery Skills (clinical practice)	62.1.1	4	260
		Total clinical credits	4	260
		Total credit	**20**	**564**
Year II, Semester II				
BF1221	Breast feeding and infant nutrition	62.1.2	2	32
NEO222	Neonatology	62.1.3	2	32
PMW223	Psychology for midwives	62.1.4	2	32
SMW224	Sociology for Midwives	62.1.5	2	32

PED225	Paediatrics I	62.1.6	2	32
COD226	Communicable diseases	62.1.7	2	32
EPI227	Epidemiology	62.1.8	2	32
		Total theory credits	14	224
BFN228	Breast feeding/neonates (clinical practice)	62.1.9	2	130
NEO229	Neonatology ICU/Paediatrics (clinical practice)	62.1.1	3	195
		Total clinical credits	5	325
		Total credits	19	549
		Total credits 1st year	**39**	**1113**

Course no. 3rd year	Subject[63]	Lab[64]	Credit hours	Contact hours
Year III, Semester I				
MPH314	Midwife and public health: health education and promotion	64.1.1	2	32
MDO312	Medical disorders	64.1.2	2	32
COC313	Communication and counselling: facilitating decision making and dealing with grief.	64.1.3	2	32
CMW314	Complications in childbirth and the role of the Midwife I	64.1.4	4	64
BST315	Biostatistics	64.1.5	2	32
PED316	Paediatrics II	64.1.6	2	32

Total theory credit			14	224
MDO317	Medical disorders (clinical practice)	64.1.7	1	65
CMW318	Complication in midwifery practice (clinical practice)	64.1.8	2	130
PED319	Paediatrics II (clinical practice)	64.1.9	2	130
Total clinical credits			5	325
Total credits			19	549
Year III, Semester II				
GYN321	Gynaecology	64.1.1	2	32
CMW322	Complications in childbirth and role of the Midwife II	64.1.1	4	64
FPL323	Family planning		2	32
RME324	Research methodology	64.1.1	3	48
Total theory credits			11	176
GYN325	Gynaecology (clinical practice)	64.1.1	2	130
CMW326	Complications in midwifery care (clinical practice)	64.1.1	2	130
FPL327	Family planning (clinical practice)	64.1.1	2	130
Total clinical credits			6	390
Total credits			17	566
Total credits 1st year			**36**	**1115**

65 66 68 69 70

67

Course no. 4th year	Subject [71]	Lab [72]	Credit hours	Contact hours
Year IV, Semester I				
EHM411	Environmental health and the Midwife	72.1.1	2	32
HSM412	Health Service Management	72.1.2	3	48
MHM413	Mental health care in Midwifery practice	72.1.3	2	32
EOC414	Emergency Obstetric care	72.1.4	2	32
ROR415	Individual research project I	72.1.5	3	48
		Total theory credit	12	192
EOC416	Emergency obstetric care (clinical practice)	72.1.6	2	130
MHM417	Mental Health in Midwifery (clinical practice)	72.1.7	1	65
		Total clinical credits	3	195
		Total credit	**15**	**387**
Year IV, Semester II				
DSC421	Advanced diagnostic skills: advanced clinical examination/ultra sound/pathology and laboratory	72.1.8	2	32
RPR422	Individual research project II	72.1.9	2	32
		Total theory credit	4	64

DSC423	Advanced diagnostic skills (clinical practice)	72.1.1	2	130
INT424	Internship (clinical practice)	72.1.1	8	520
Total clinical credits			10	650
Total credits			14	714
Total credits 1st year			**29**	**1101**

Four Year Bachelor of Midwifery Curriculum Summery

Overall Summary

Curriculum summary		Credit hours	Contact hour
73 Theory	11.1 Major courses	55	880
	11.2 Supportive courses	29	464
	11.3 Common courses	12	192
74 Practice	11.1 Practice (related to Major Courses)	41	2665
	Weekly clinical assignment	Included	-
	11.1 & 2 Lab session/demonstration	6	192
	Grand total	**143**	**4393**

*** Ratio: 1 credit hour in Theory = 16 contact hours**

1 credit hour in Practice = 65 contact hours

1 credit hour Lab session = 32 contact hours

Total hours in Theory: 1536 contact hours 35%

Total hours in Practice: 2857 contact hours 65%

Grand Total: 4393 contact hours 100%

Year	75 Theory total Credits / Hours	76 Theory total Contact /Hour	77 Clinical practice total Credits/Hour	78 Clinical practice total Contact / Hours	79 Lab hrs	80 Lab hrs
1st Year	28	28x16hrs = 448	8	8x65hrs = 520	3	3x32hrs = 96

2nd Year	27	27x16hrs = 432	9	9x65hrs = 585	3	3x32hrs = 96
3rd Year	25	25x16hrs = 400	11	11x65hrs = 715	-	-
4th Year	16	16x16hrs = 256	13	13x65hrs = 845	-	-
Total	**96**	**1536**	**41**	**2665**	**6**	**192**

Acknowledgements

The original curriculum for the Hamlin College of Midwives was written by Ato Solomon Abebe and Sr. Annette Bennett with supportive assistance of Professor Ann Thomson (University of Manchester) in 2007.

Early supportive documents were compiled by AtoWodinehBiru. Typing and arrangement assisted by YeteshaworkDemmisie and AtoMunirNursebo (2007)

The staff would like to thank the Ethiopian Ministry of Health, Dr.BarbaraKwast, AMDD, Dr.Jeffery Smith JHPIEGO (Midwifery curriculum for Aghanistan), the staff of Gondar University and Jimma University for their co-operation and allowing us to examine their respective curriculum's and for their valuable advice.

2010: Major revision and augmentation of the curriculum to a four year programme, was carried out by team work, by the academic staff of the Hamlin College, lead by Sr Rosemary King and arranged by Helen Girmay. Acknowledgement of contribution needs to be given to Sr Jacqueline Bernhard and Sr Annette Bennett.

2012, January: Minor revision and updating of the curriculum took place as a team work project. Contributions were made by Sr Jacqueline Bernhard, Sr. Annette Bennett, Ato Solomon Abebe, Sr.MaritLegesse, Sr.NegedeHailu, Sr.SerawitYilala, Sr.WudeFentahunSr.MuenaSiraj, AtoHabtamuAtnafu, AtoMelakuTedebebe, and Sandra Johansson with Hellen Girmay and AtoWondewassen G/meskeal.

The staff of the College would like to acknowledge the vision and commitment of Dr's Reginald and Catherine Hamlin who have given much of their life to serving women in Ethiopia, in particular women suffering with obstetric Fistula.

This College, which has been set up as a "prevention strategy" under the Addis Ababa Fistula Hospital is dedicated to the Hamlin's. Our vision is that every woman in Ethiopia would have access to a highly skilled Midwife and that the curse of Obstetric Fistula becomes a thing of the past.

80.1 Appendix II: Research Information Sheet

You are asked to participate in research conducted by Annette Bennett ( ) as part of her Masters in research in Midwifery, through the University of Technology, Sydney. Annette's principle supervisor is Professor Caroline Homer, carolinehomer@uts.com.au. The secondary supervisors are Professor Deborah Davis, Deborah.Davis@canberra.edu.au and Professor Nicky Leap Nicky.leap@uts.edu.au

The purpose of the study is to use story telling narratives to document the development of a bachelor programme in midwifery and a rural deployment strategy in Ethiopia. **The research is entitled: Toward a model for direct entry formation and deployment for midwives in sub-Saharan Africa: Ethiopia, a case study.**

Please read the following information carefully,

You are being asked to share your story. I will start with some very broad questions to get you talking, however the purpose of the interview time is to hear from you, from the time of your selection, your experiences in the College as a student and your experiences as a professional midwife.

All interviews may be carried out in English by the principle researcher, Annette Bennett or in Amharric by a research assistant.

- The actual place of interview can be decided in discussion between the researcher and you the participant.
- Your interview will be recorded on a digital recording device.
- Your recorded interview will be transcribed onto paper.
- All participants' names will be changed to protect confidentiality. Digital recordings and transcriptions will be locked in a secure place and/or password protected on a computer.
- You are free to choose not to participate in this research study and you are free to withdraw from the study at any time. Withdrawing participants may withdraw any data they have supplied up to analysis and publication.
- It is intended that findings from this research will be used in publications and conference papers. No participant will be identified in a publication or paper.
- There are no identifiable physical risks to the participants. If during the course of an interview you feel uncomfortable, you can ask for the interview to stop.
- This research can benefit the future of midwifery in Ethiopia by increasing our understanding of the experiences, challenges and successes of midwifery education and the work of midwives in rural areas.
- **If you have any questions or concerns, you are encouraged to ask the researcher before you sign or at any time before or after the interview.**

Please see the consent form if your wish to participate in this research.

80.2 Appendix III: Research Consent Form

Consent Form for participation in the collection of personal narratives for research.

Student Researcher:
Annette Bennett;
Student in Masters in Research in Midwifery, the University of Technology, Sydney, Australia.

Principle supervisor:
Professor Caroline Homer, University of Technology of Sydney,
Caroline.Homer@uts.edu.au

Secondary Supervisors:
Professor Deborah Davis,Deborah.davis@canberra.edu.au
Professor Nicky Leap, Nicky.Leap@uts.edu.au

I have been given information about the research entitled: **Toward a model for direct entryformation and deployment for midwives in sub-Saharan Africa: Ethiopia, a case study.**
I have been offered the opportunity to discuss the research project with Annette Bennett who is conducting this research.

I have been advised of the potential risks and burdens associated with this research, which include taking time to participate in one to two unstructured interviews of approximately 90 minutes duration, and have had an opportunity to ask Annette Bennett any questions I may have about the research and my participation.

I understand that my participation in this research is voluntary, I am free to refuse to participate in any interview and I am free to withdraw from the research at any time up to the point of transcription and analysis. My refusal to participate or withdrawal of consent will not affect my relationship with the Addis Abebe Fistula or the Hamlin College of Midwives in any way.

By signing below I am indicating my consent to one or possibly two unstructured interviews. I understand that my personal details will remain confidential.

I understand that the data collected from my participation will be used in writing a research thesis by Annette Bennett and may be submitted for professional journal publications and conference presentations and I consent for it to be used in that manner.

Signed **Date**

……………………………………………………………… ……./……/……

Name, printed in full: ……………………………………………………………………………

80.3 Appendix IV: UTS Ethics approval letter

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UTS CRICOS PROVIDER CODE 00099F

18 September 2014

Dr Angela Dawson
Faculty of Health
CB10.07.240
UNIVERSITY OF TECHNOLOGY, SYDNEY

Dear Angela,

[External Ratification: Hamlin Fistula Addis Ababa Fistula Hospital Human Research Ethics Committee HREC approval HFE/0282/1012, March 2012 to March 2017]

The UTS Human Research Ethics Expedited Review Committee reviewed your application titled, "Toward a model for direct entry formation and deployment for midwives in sub-Saharan Africa: Ethiopia, a case study.", and agreed that the application meets the requirements of the NHMRC National Statement on Ethical Conduct In Human Research (2007). I am pleased to inform you that your external ethics approval has been ratified.

Your UTS approval number is UTS HREC REF NO. 2013000405

Please note that the ethical conduct of research is an on-going process. The National Statement on Ethical Conduct in Research Involving Humans requires us to obtain a report about the progress of the research, and in particular about any changes to the research which may have ethical implications. This report form must be completed at least annually, and at the end of the project (if it takes more than a year). The Ethics Secretariat will contact you when it is time to complete your first report. You must also provide evidence of continued approval from the Human Research Ethics Committee you originally received approval from.

I also refer you to the AVCC guidelines relating to the storage of data, which require that data be kept for a minimum of 5 years after publication of research. However, in NSW, longer retention requirements are required for research on human subjects with potential long-term effects, research with long-term environmental effects, or research considered of national or international significance, importance, or controversy. If the data from this research project falls into one of these categories, contact University Records for advice on long-term retention.

If you have any queries about your ethics approval, or require any amendments to your research in the future, please do not hesitate to contact the Ethics Secretariat at the Research and Innovation Office, on 02 9514 9772.

Yours sincerely,

M R Haas

Professor Marion Haas
Chairperson
UTS Human Research Ethics Committee

THINK.CHANGE.DO

80.4 Appendix V:Table of Key articles for the literature review

	Primary research in midwifery education in Ethiopia/Africa					
	Author/s	Title/ Context	Research Methods	Participants	Study Aims/questions	Findings
1	(Adegoke et al. 2012)	Capacity building of skilled birth attendants: A review of pre-service education curricula. Nigeria *J - Midwifery*	A review by comparison of pre-service curricula for all cadres involved with Maternal health care with international standards	The training institutions, the curricula for all cadres involved with maternal health care 4 types of curricula	To assess the level, type and content of pre-service curricula for health workers providing maternal health care against ICM standards	8 cadres. None of the 4 curricula reviewed met all the ICM standards, the basic MW curriculum best met ICM standards and the Nurse/MW currently focused too much on Nursing *This reflects the Gayem et al WHO findings for Ethiopia regarding Nurse MW curriculum*
2	(Adegoke et al. 2012)	Skilled Birth Attendants: Who is Who? A Descriptive Study of Definitions and Roles from Nine Sub-Saharan African Countries. Nigeria, Ghana Sierra Leone Gambia, Kenya Tanzania, Malawi Zimbabwe, Somaliland *J - PLoS ONE* *Online journal*	A cross sectional descriptive study using a structured self-administered Questionnaire	MOH-Mat health staff, Senior education staff for Medical, nursing and midwifery. Referral Hospital staff and NGO technical staff	1.Which cadres of Health care providers are considered to be SBAs 2. Which of the (9) EMoC signal functions is each cadre of staff reported to perform. 3. Which of the EMoC signal functions is each cadre legislated to perform	Cadres reported as SBA differed greatly. i.e. 6 – 11 cadres reported and lack of consensus about titles. -A range of skill and performance of signal functions *Mostly about skills but does touch on education and training.* *Midwives from the*
3	(Barako et al. 2012)	Factors influencing application of evidence based practice among nurses. Kenya's *J - Africa Journal of midwifery and women's health*	Mixed methods, Cross sectional descriptive study – using questionnaires and interviews.	156 Nurses from medical and surgical wards	Determine the application of EBP by the nurses at KNH Establish the relationship between EBP application and the nurses' characteristics Establish relationship between resource availability and EBP application	Ns' with negative attitudes to EBP –less likely to practice it. Poor confidence to critically review material – less likely. Degree –more likely Perceived Lack of time – less likely Poor management understanding Lack of supplies Decrease EBP without an enabling environment *Important for Degree level Ed* *To access and practice EBP.* *Ensure supplies – EBP*

	Author/s	Title	Research Methods	Participants	Study Aims/questions	Findings
4	(Dolamo & Olubiyi 2013)	Nursing education in Africa: South Africa, Nigeria and Ethiopia experiences *J- International Journal of nursing and midwifery*	Case study	Historical documents,	To study and document the development of nursing education in 3 African countries. To assist modern states in Africa to learn from the past in order to make good decisions for the present.	Influenced by the colonial period and periods of war and political upheaval. The development of registration and regulation and minimum curricula requirements. *Not a very well written study but has some good historical back ground and insights.* *Nursing in this article also covers midwifery*
5	(Cragin et al. 2007)	Educating Skilled Birth Attendants in Mexico: Do the Curricula Meet InternationalConfederati on of Midwives Standards? *Reproductive Health Matters*	Interviews with faculty and Deans of each school Review of curricula – against the ICM core competencies	Three representative education programmes,	Discusses the respective strengths and weaknesses of the educational programmes for three types of providers of obstetric care in Mexico – Professional Midwives, obstetric nurses and physicians	Some innovative models of learning but weakness for the nurses and the physicians in meeting core competencies and clinical hours for skill acquisition. MW course -strong for skills, MW focus but may have issues with EOC, multi disc approaches and small class size. *MW focus best for core competencies* *Small class size good for skills but bad for workforce demand.*
6	(Fullerton et al. 2011)	Quality considerations in midwifery pre-service education: Exemplars from Africa' Ethiopia Ghana and Malawi *J -Midwifery*	Qualitative and Quantitative. Individual interviews, focus groups Quant – survey	Donors, Government, Policy makers, NGOs, Faculty, Midwives and students	Assess and gather information about success and challenges encountered by the 3 countries as they designed, expanded or their pre-service midwifery programme	Various pathways. Various admission routes G and M high test scores and an interest. E lowest – without interest. Curriculum development – E –non MWs, G+M – Ns MW council Competency – better integration in curriculum for M+G. E – poor. – Actual achievement poor for all. Demand, staff and preceptor shortages/and skills. Graduate w/o skills and numbers Standardisation of curriculum Faculty prep – curriculum dissemination/teaching/learning Accreditation Qualification for entry to profession Notes: Seen as traditional and professional Recruit Curriculumdevelop

	Author/s	Title	Research Methods	Participants	Study Aims/questions	Findings
7	(Harvey et al. 2004) Same study as below +Nicaragua	Skilled birth attendant competence: an initial assessment in four countries, and implications for the Safe Motherhood movement. Benin, Ecuador, Jamaica and Rwanda	Measured Competence against WHO guidelines, Multiple choice questions and skill assess	166 health care providers – doctors and midwives. 21 facilities	PHASE I Evaluate competence of health professionals in the 4 countries	55.9% correct for knowledge test, 90 mins to 4 hours to complete 48.2% correct performance of skills Wide gaps between evidence based standards and current levels of provider confidence
8	(Harvey et al. 2007)	Are skilled birth attendants really skilled, some disturbing results and a potential way forward Benin, Ecuador, Jamaica and Rwanda & Nicaragua*	Measured Competence against WHO guidelines, Multiple choice questions and skill assess	1358 Nicaraguan SBAs	PHASE II Evaluate SBA competence in 5 countries with high MMR	In Nicaragua knowledge scored better than skill e.g. 74% means knowledge test and 46% mean for skill In N – MWs not being trained any more – In both phase I and II doctors scored better than nurses and MWs
9	(Dennis-Antwi 2011)	Precentorship for midwifery practice in Africa: challenges and Opportunities. Ethiopia Ghana Uganda and Zambia	Qualitative study design. In-depth Interviews and structured interviews – interview guides, Focus	Midwifery tutors(25) Preceptors &policy leaders (25) Retired MWs (20) Young MWs (15) Stake holders (15)	To document the state preceptorship in selecte3d program countries to serve as a body of knowledge that will inform the design of effective preceptorship guidelines as a contribution to quality midwifery pre-service	Z – P/C guidelines. – other countries none. Not willing, don't share knowledge, not faculty, Young and inexperienced P/Cs perceived students don't want to be midwives don't love their work. Problems with large students numbers, poor pay, heavy workload. Limited competent tutors.
10	(Armstrong 2010)	Clinical mentors' influence on student midwives' clinical practice. UK	Survey –semi structured questionnaire	125 midwifery students in 5 universities' in the UK	Whether students are influenced by the traditional practices of their clinical mentors and if so to what extent	92% felt what was taught in HEI – not in reality 73% taught different way by mentor that HEI. Too busy. 50% Protocols not EBP. Fitting in. Set in their ways Challenging for staff different assessment affected Most Students felt their HEI gave better EBP than the clinical site.
	GilmoreCarole McIntyre, Meredith McLelland, Gayle Hall, Helen Miles, Maureen	Exploring the impact of clinical placement models on undergraduate midwifery students	Focus groups and survey			Good midwives and bad midwives, being part of the team important – Encouraged when staff remembered their name, facilitated clinical practise, did not humiliate them respected them. Good to work with MWs who enjoyed their work Band midwife, negative towards students, did not help them to get experience. Less 'woman centred' – ready to retire!

11	(Licqurish & Seibold 2008)	Bachelor of Midwifery students' experiences of achieving competencies: The role of the midwife preceptor. UK	Grounded theory using in-depth interview	8 BSc midwifery students completing their final clinical placement	Describe BSc midwifery students experiences, specifically the role of the MW preceptor in learning and development	Good role model, enjoyed teaching, motivated, positive philosophy, encouraging even when mistakes, gave responsibility, Poor preceptor, poor role model/communicator, does not allow hands-on, critical of direct entry, crush confidence
12	(Gaym et al. 2008) Not peer reviewer or published	The national situational analysis of pre - service midwifery training in Ethiopia,	Evaluation Semi structured interviews and survey	Midwifery educational training programmes in Ethiopia	Situational analysis of all midwifery programmes in Ethiopia	Poor quality curriculum– non MW centred, little autonomy Poor facilities, poor library, no models, poor clinical experience Inexperienced tutors and preceptors, Graduating without skills
13	(Tomedi, Tucker & Mwanthi 2013) This may be more suited to the discussion	A strategy to increase the number of deliveries with skilled birth attendants in Kenya	Action research?	2 MOPHS – Intervention facilities 2 – control	Will compensating TBAs to bring women to give birth in the HC increase the number of births carried out by a SBA?	YES it will Before intervention facilities = 524 Prenatal care patients 102 Births (19.5% of ANC gave birth in facility) – after 49.3% Control: 2172 and 413 (20% gave birth in facility) After intervention - 20.8% Issues with data collection and accuracy and variables – other demographics of the population

	Motivation, Retention and Attrition of MWs in Africa					
13	(Abimbola et al. 2012)	Midwives services scheme in Nigeria	Nationwide survey of all the Health facilities involved. Measuring against baseline indicators.	2488 midwives, 6 zones, 815 health facilities total, 652PHC, 163 RHs	To improve the retention of Mws in rural areas and improve MCH activity including MMR and NMR	Using newly graduated, unemployed and retired Mws – posted for 1 yr. to a rural PHC. X4PHC –Ref Hosp. , x4 MWs /HC Only one area decrease in MMR & NMR – maybe due to more high risk del Increase FP, ANC x1 and x4. And TT Retention difficult for new grads – young – tend to go home.
14	(Adzei & Atinga 2012)	Motivation and retention of Health workers in Ghana's district hospitals	Quantitative design – questionnaire (71% response rate) Factor analysis with varimax rotation and a stepwise regression	285 health workers in district hospital in 4 regions of Ghana Analysed using a stepwise regression model	Consolidate existing empirical evidence on the impact of financial and non- financial incentives on motivation and retention of health workers in Ghana 's district hospitals	6 factors. Financial incentives significant influence Salary supplement, remuneration, compensation for rural post and professional development strong significant motivation for retention in rural area. Also non-financial can motivate and retain such as continual professional develop, infrastructure and resources,
15	(Bakibinga , Forbech Vinje & Mittelmar k 2012)	Factors contributing to job engagement in Uganda	Exploratory qualitative descriptive - Phenomenology and hermeneutics	15 midwives. 2 districts Snowball sampling In-depth individual interviews,	Identify factor contributing to job engagement of midwives and nurses in Uganda – informed by a similar Norwegian study	Findings similar to Nors study Search for meaningfulness, service to others. High moral and ethical standards. Sense of calling
17	(Blaauw et al. 2010)	Policy interventions that attract nurses to rural areas: a multicounty discrete choice experiment. Kenya, SA Thailand	Discrete choice experiment.	1064 Final year nursing students, 345 K 377 TH 342 SA	Measure the effectiveness of financial and non-financial strategies designed to attract nurses to rural areas in three different countries.	Need to be tailored to local conditions, what works in one place may not work elsewhere. Rural origin showed statistical significance in all countries Kenya/SA– increase pay and specialist training 30% to 75% Thai- insurance package

	Motivation, Retention and Attrition of MWs in Africa					
18	(Ensor et al. 2009)	Level and determinants of incentives for village midwives in Indonesia	Survey – structured questionnaire Multivariate models developed	Two districts chosen by the MOH Due to poor health stats 207 MWs providing a service for 227 villages	Not stated To determine the attributes that act as incentives for midwives to stay in their work in Indonesia	Asking questions on income private, main salary and training per diems Results – public income = basic salary +top ups, performance and festival + most ear private income – most coveted position is permanent public civil servant with a pension, many ear from private, gifts, farming, the top earners can ear almost x3 times their salary through private sources page 29, Experience – MW with 15 years earns more than x2 MW with 5 years Why become a MW – career, family convenience, proximity to relatives, husband's work place, children's school and service to community (less important). – Parental wishes or advice. – To stay in public – career protection, advancement, good salary, guaranteed pension, good promotion, 71% - main motivator.
19	(Kadam et al. 2012)	Assessment of factors influencing health workers retention in rural and remote areas of Odisha	Mixed method approach Semi structured interviews (SSI)	6 districts 226 SSI Doctors, Ns, pharmacists, multipurpose health workers, lab techs	Explored the factors influencing health workers retention in rural and remote areas of Odisha	Strong personal will to serve people Infrastructure Training opportunities Support by seniors School for kids Promotion after certain years of service Dissatisfaction – lack of promotion after years of service, poor infrastructure, lack of school opportunity for children, Top 5 reasons to stay in service – permanent government service, pension, social service source of regular income and job satisfaction.
20	(Kinfu et al. 2009)	The health worker shortage in Africa: are enough physicians and nurses being trained *Bulletin WHO*	Analysis of the 'stock' of health workers - A survey of annual inflows and outflows	12 African Countries CAR, Cote d'Ivoire, DRC, Ethiopia Kenya, Liberia Madagascar, Rwanda, Sierra Leone, Uganda Tanzania, Zambia	Are enough physicians, nurses and midwives being trained?	The current numbers of pre-service students is not enough to meet unmet demand Alarming shortages particularly taking into consideration population growth and normal loss through retirement, ill health, death and dismissal.

	Motivation, Retention and Attrition of MWs in Africa					
21	(Kruk et al. 2010)	Rural practice preference among medical students in Ghana: a discrete choice experiment *Bulletin WHO*	Discrete choice experiment – based on discussion and focus groups ./C students, physicians and MOH	302 medical students Mean age 22.9 yrs., Single, no kids, Educated families Most had done a rural clinical placement Few rural and few bonded, ¼ had lived abroad, 40 were Nigerian	To determine how specific job attributes influenced 4th yr. med students 'stated preference for hypothetical rural job postings in Ghana. *defines remote posting	Influenced by - Higher salary, free superior housing, educational allowance for kids, improved equipment, supportive management, shorted contracts before study leave and a car. Findings: improved equip and sup management =highest. Than shorted contracts and salary bonus Discontinuing free housing had a negative effect. When gender looked at - women = support management and men = superior housing The students wanted to perform their job well with good equip and sup management as much as doubling their salary Feared being forgotten in rural posts for promotion or training Students may be willing to forgo salary to gain experience and serve rural community for 2 to 3 years before return to private practice. page 338
22	(Lavender et al. 2009)	Capacity building to reduce maternal and neonatal morbidity and mortality. Tanzania, Kenya Namibia,, Zambia UK, Zimbabwe Seychelles, Mauritius, Swaziland Malawi, S A	Mixed methods Quant – one page evaluation Qualitative inquiry – interviews either face to face=3 or telephone =5	29 participants in workshops completed the survey 8 participants completed interviews	Develop distance learning mats to strengthen capacity of midwives to meet local needs Consensus of MSc MW and MSc woman's health Curriculum To validate distance learning materials Assess views and experiences of the project	A unique user lead dis ted program developed Sharing ideas, valuing each other's contribution Coming together as a team Good interaction Inclusiveness Stimulating content Positivity Quality end product Good time keeping Mutuality in effort Transparency NEGATIVE: most =none. Some poor facilities, two members with materials not willing to share. Interview findings – everyone participate, non - judgemental Very relevant content , some facility problems -best thing – sharing, respect,

	Motivation, Retention and Attrition of MWs in Africa					
23	(Lori et al. 2012) used Same study as below	Perceived barriers and motivating factors influencing student midwives' acceptance of rural postings in Ghana.	Exploratory qualitative study. Focus group interviews	49 final year midwifery students 6 focus groups	Determine the perceived barriers and motivators influencing final year students' accepting a rural posting in Ghana, West Africa	3 themes Social amenities, professional life and further education/career advancement. Social-Poor housing, no water, impassable roads, no transport, no entertainment, poor or non- existent school for future children, insufficient lighting -' ignorant local people' – difficult patients and no suitable husbands Professionally- the rural area lacked support, could not wok in a way that they were used to. Too much referral to better facilities , lack of staff – work 24/7, old MWs old ways , no training and further study opportunity – old fashion practises Would be attracted if post grad study scholarship incentives Meet a husband diff Close to family
24	(Lori et al. 2012)	Factors influencing Ghanaian midwifery students' willingness to work in rural areas: A computerized survey'	Focus group discussion and computerized survey Discrete choice experiment		To understand the factors influencing third year Ghanaian students willingness to work in a rural area	No 1 was educational opportunity 72%, Poor facilities 26%, poor educational for kids19%, lack of social amenities 17%, Top reason to work in rural area – to serve humanity 74%, better clinical experience 62% The more experience in a rural comm. the more likely to work in one Being born or living in a rural area from age 5 for I year increased likelihood but short term placement 6weeks in a rural area decreased chance of work in rural area.
25	(Manafa et al. 2009)	Retention of health workers in Melawi: perspectives of health workers and district management	Quantitative measure of job Satisfaction, perception of work environ and sense of justice.	Focus group discussions, interviews with managers. Convenience sampling for focus groups.	Explores how health workers are managed and motivated and what effect does this have on their performance	Demotivated by what is perceived as poor continuous ed and career progression Nil performance appraisals and Inadequate supervision, no feedback Managers did not perceive any of these HRM deficiencies as demotivating job descriptions – clear expectation of role don't want to work in rural clinics with poor facilities increase risks due to poor staff levels greater autonomy , lower cost of living

	Motivation, Retention and Attrition of MWs in Africa					
26	(Mangham & Hanson 2008)	Employment preferences of public sector nurses in Malawi: results from a discrete choice experiment,	A discrete choice experiment Developed after 20 in-depth interviews '/c 20 RNs, Working in 3 geographically diverse locations. Primary, secondary and tertiary facilities.	107 complete questionnaires 50 (47%) urban and 57 (53%) Rural	To understand the employment incentives of Malawian public sector registered nurses, and to ascertain whether salary increases significantly affect how nurses regard their employment.	Willing to trade salary on other attributes in the work place. Up-grade professional qualification, housing and increase monthly salary – best results City inferior to rural City preferred by urban background rural by rural BG – not stat sig.
27	(Mathauer & Imhoff 2006)	Health worker motivation in Africa: the role of non-financial incentives and human resource management tools Benin and Kenya	Mixed Methods Semi structured qual interviews 37 in Kenya and 62 in Benin - coded Quant material analysed with SPSS	Random sampling. Doctors and Nurses Public, private and NGO	To assess the role of non-financial incentives for motivation in two cases, Benin and Kenya	Private and NGO more motivated than public. K and B Mot – vocation +to help others. Strong prof ethos, prof satisfaction and recognition. Boost spirits to work well - Materials and means to work higher in Benin than salary but Salary 2nd More conducive work environ, recognition, feedback, better leadership, management participation increase self-efficacy – feeling they did a good job. Small benefits such as free coffee and tea and unpaid holidays Improved performance with a more enabling environ and communications Supervisor instead of supportive was seen as negative, no good feedback, not encouraging. Feeling neglected and poor feedback – demotivating. When done well – motivating and supportive
28	(Michael et al. 2010)	Health workforce deployment, attrition and density in East Wollega Zone, Western Ethiopia Ethiopian Journal of Health Science – not peer reviewed	Mixed methods – Data – 6 year retrospective record review of deployment, Attrition Interviews with 13 respondents	11 districts and one zonal office 926 health workers records reviewed 16 interviews with managers and health workers	To assess the situation of health workforce deployment, Attrition and density in the East Wallega Zone of Ethiopia	Increase in attrition rates following decentralisation More males 128 left their job than females 42 Many more health workers left their job following decentralisation 55 to 115 after. Main reasons 13/16 Poor salary, 10/16 rigid civil service recruitment procedures, 11/16 poor attention for the Woreda office and 12/16 – lack of interest to work in a rural area. 13/16 external environment interfering with their job. 12/16 Poor prof development.

	Motivation, Retention and Attrition of MWs in Africa					
29	(Mullei et al. 2010)	Attracting and retaining health workers in rural areas: investigating nurses' views on rural posts and policy interventions Kenya	Mixed methods FGD	Nursing students 166 pre service 179 up grading Most female, 2/3 from rural area.	Reasons for poor recruitment of nurses in rural areas and possible policy interventions	Older more positive to rural area and studying at a college far from the capital Negative if an under grad Positive - Lower cost of living – food, rent school fees/more autonomy Negative-poor infrastructure, poor education opportunities for the staff and the kids. Higher work load, poor supplies, equip and supervision, Tribal concerns – violence – when working in another tribal group
30	(Muula, Panulo & Maseko 2006)	The financial losses from migration of nurses from Malawi	Adding up all costs for education primary through to tertiary	Post basic nurses 2years +2 years and degree direct entry nurses 4 years Midwives – one year midwifery + 2 years to get degree	To estimate the financial cost of educating a nurse and the estimated loss through migration	Loss of investment Loss rates to banks Cost of teaching in primary school +secondary school + training at diploma level+ or education at degree level Many other losses other than financial – societal losses higher workload for Health workers staying behind, lower quaityl care, tasks delegated to lower cadres,
	Author/s	Title	Research Methods	Participants	Study Aims/questions	Findings
31	(Prytherch et al. 2012)	Maternal and newborn health providers in rural Tanzania: in-depth interviews exploring influences on motivation, performance and job satisfaction.				
32	Rockers	Preference for working in rural clinics among trainee health professionals in Uganda: a discrete choice experiment	Job preference – a cadre specific discrete choice experiment Mixed logic models were used to estimate stated preference s	246Med students 132 nursing students 50 pharmacy 57 lab assistants	To identify job characteristic s that influence work place preference by final year students Attributes of potential work post such as salary, facility, housing, length of stay, manager support, training tuition, duel practise opportunities,	For all students - influenced by – salary, facility quality and manager support. Medical and lab students – tuition to do further study also important Pharmacy – opportunity to work in duel practise influential. Mostly male except nurses mostly female. Nurses worked 4.2yrs before their study others less, Most respondents –would consider work in rural area after grad

	Author/s	Title	Research Methods	Participants	Study Aims/questions	Findings
33	(Serneels et al. 2010) Sister study to the one below	Who wants to work in a rural health post? The role of intrinsic motivation, rural background and faith-based institutions in Ethiopia and Rwanda.	A cohort survey Regression analysis	412 Nursing and medical students in Rwanda	To understand the factors influencing health workers' choice to work in rural areas as a basis for designing policies to redress geographic imbalances in health worker distribution	Intrinsic motivation = lower reservation salary = stat sig Wealthier students = higher res salary Students who grew in rural area (time it took to walk to school age 6) = lower reservation salary Adventist = lower reservation salary Medical students higher reservation than nurses When the two studies put together Rural area of origin – not sig Adventist still sig, catholic mildly sig, Coming from AA =sig
34	(Serneels et al. 2007)	For Public Service or Money: understanding geographical imbalances in the health workforce *(Ethiopia*)	A cohort survey Self -administered supervised questionnaire + a medical knowledge test Try to measure the wiliness to work in a rural area and measure individual motivation	219 nursing students _ 2 years of training (represent 16% of 2003/4 cohort) 90 medical students (represent 49% of the 2003/4 cohort) 8 Ns schools and 3 medical schools 2 stage stratified sampling	Not stated To identify motivational factors for working in a rural area for nursing and medical students	26% have high intrinsic motivation to help the poor. The reservation wage is lower the older the person and for those with a high intrinsic motivation. Doctor's significantly higher reservation wage to nurses. Coming for AA =higher reservation wage Students from wealthier families less likely to work in rural area Students with higher intrinsic motivation - more likely to work in rural area 2/3ns and 90% med students want to live in Urban are WHY – Ed of children, promotion and training

35	(Zurn et al. 2010)	How to recruit and retain health workers in underserved areas: the Senegalese experience	Approach -	122 HP re-opened 365 contracts 2006 to 2008 59 physicians 155 nurses 151 midwives One yr. contracts	Not stated Assess the efficacy of a new special contracting system to recruit health workers to rural areas	The results are not very clear – general - no clear comparison with prior to the study Plan Cobra – new contracting system - reopen Health posts Specific post – specific location– specific length of time – Housing to Ns if head of HP Motivation and hardship allowances Results Not all regions benefited to the same degree but offering contracts had a positive result in attracting staff to rural areas and redress the imbalance in workforce density and distribution
36	(Huicho et al. 2012)	Job Preferences of Nurses and Midwives for Taking Up a Rural Job in Peru: A Discrete Choice Experiment	Discrete choice experiment Job attributes based on Lit Rev + Qualitative interviews and focus groups	205 Nurses and midwives	Evaluate job preferences of nurses and midwives currently working on a short term contract in the public sector.	8 attributes identified - Type of facility, salary, number of years they have to work there, bonus points to get further study, a scholarship for specialisation/further study, free housing, expected work schedule, certificate of recognition The ones that were stat sig = salary increase, HC vs. HP, Scholarship Vs. no scholarship, years to get perm position. Increased choosing a rural post = male, rural place of birth, salary within or above offered range, chance of longer contract, Disincentive – not live /C partner, 5-7yrs or 8-14 yrs. work experience, MW rather than NS and if they presently worked in a hospital rather than a health professional or health centre - decreased likelihood. The odds of choosing an urban post was 14.47 times than choosing a rural one Salary increase, HC type of facility and scholarship for specialisation all preferred attributes for choosing a rural job. A disincentive =increase yrs. to get perm contract Best package on simulation = 75% increase salary +scholarship for specialisation – would increase % of H/workers in rural post from 36.4% to 60%

80.5 Appendix V: Family Planning activityfrom 2009-2010 and 2010-2011

HC	Catchment population	Annual total for pre-deployment 2009-2010	December 2010 to end November 2011 number of consultations by month												Annual total for post deployment 2010-2011	Mean for pre-deployment per month 2009-2010	Mean post – deployment per month 2010-2011	% change
			Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov				
A	58,000	1236	240	209	170	168	250	176	159	150	172	207	190	176	2267	103	189	+83
B	56,000	1261	192	320	334	296	226	307	234	232	272	394	294	276	3377	105	281	+168
C	28,000	3926	450	503	390	472	377	495	495	444	503	417	418	354	5318	327.1	443	+35
D	14,000	1664	100	66	135	128	147	173	129	142	110	143	142	141	1556	138.6	130	-7
E	32,000	475	163	194	211	254	173	246	295	284	251	382	290	257	3000	39.5	250	+532

HC: Health Centre

80.6 Appendix VII: Health Centre Antenatal activity from 2009-2010 and 2010-2011

HC	Eligible AN women in each HC *4% of the pop	Annual total for pre-deployment 2009-2010	December 2010 to end November 2011 number of antenatal care (ANC) by month												Annual total post deployment 2010-2011	Mean pre-deployment per month 2009-2010	Mean post-deployment per month 2010-2011	% change
			Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov				
A	2320	284	150	128	104	103	72	94	90	82	54	59	98	70	1104	24	92	+289 %
B	2240	406	59	148	152	155	106	111	112	100	60	85	84	70	1242	34	104	+206 %
C	1120	1197	111	107	235	169	145	176	170	129	103	101	156	150	1752	100	146	+46%
D	560	608	84	75	70	55	48	69	72	66	62	83	62	72	818	51	68	+35%
E	1280	20	14	22	22	18	30	18	32	18	15	14	36	25	264	14	22	+1220 %

Appendix VIII: The labour and birth activity data pre and post deployment of the Hamlin Midwives

The labour and birth activity data pre and post deployment of the Hamlin Midwives

Health Centre	Annual total for Pre -deployment 2009-2010	December 2010 to end November 2011 number of births attended by the HCM midwives by month Dec	Jan	Feb	Mar	Apr	may	Jun	Jul	Aug	Sep	Oct	Nov	Annual Total post-deployment	Mean per month pre MW deploy	Mean per month post MW deploy	%change	% SVD + Comp
HC A SVD		12	7	5	13	10	13	15	5	11	7	10	11	119			↑ 198%	
Comp births		5	2	4	7	2	1	2	6	5	2	2	2	40				
Total births	Previously 40	17	9	9	20	12	14	17	11	16	9	12	13	159	3.3	13.2		↑ 296%
referrals		5	2	0	7	2	1	2	1	1	2	1	2	26				
HC B SVD		5	18	11	14	15	15	12	8	10	11	6	12	137			↑ 1612%	
Comp births		8	14	12	2	6	5	7	2	5	4	3	4	72				
Total births	Previously 8	13	32	23	16	21	20	19	10	15	15	9	16	209	0.6	17.4		↑ 2512 %
referrals		7	14	12	2	6	5	7	2	2	8	2	2					
HC C SVD		8	18	4	11	9	16	6	5	9	8	16	18	128			↑ 106%	
Comp births		5	7	11	7	2	3	4	2	4	2	6	3					
Total births	Previously 62	13	25	16	18	11	19	10	7	13	10	22	21	184	5.1	15.4		↑ 198%
referrals		5	7	11	7	2	3	4	2	4	2	3	2					
HC D SVD		4	1	4	6	6	9	5	7	7	12	8	12	81			↑ 179%	
Comp births		2	3	2	4	6	7	1	5	1	5	3	2					
Total births	Previously 29	6	4	6	10	12	16	6	12	8	17	11	14	122	2.4	10.4		↑ 321%
referrals		0	1	1	3	1	0	1	0		4	3	1					
HC E SVD		2	1	3	3	1	4	3	6	9	12	6	1	51				
Comp del		0	1	0	0	0	0	0	0	1	2	3	0	7				
Total births	Previously 1	2	2	3	3	1	4	3	8	10	14	9	1	58	0.08	4.8	↑ 5000	↑ 5700
Ref		2	1	2	1	1	3	1	2	3	2	1	2	21				