KAROLINSKA INSTITUTET
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Enheten för reproduktiv hälsa
Kurs: Sexuell, reproduktiv och perinatal hälsa, 15 hp.

Estimated fulfilment of effective practices within the scope of midwifery in national midwifery regulation in Sweden and Malawi.

A scoping review

Magisteruppsats i sexuell, reproduktiv och perinatal hälsa, 15 hp
(Avancerad nivå), 2017

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Abstract

Background The competencies of a midwife are of importance for maternal and neonatal health worldwide. Integrating educated, trained, regulated and licenced midwifes into the Lancet health-care system is associated with a substantial decrease in maternal and new-born morbidity, mortality and improved quality of care (UNFPA,2014). There is a range of different policy documents on national levels regulating midwifery competence and practice. Evidence reveals the importance of a national midwifery regulation in concordance to international outlines. Nevertheless, little research exists in comparing national midwifery regulation to international competence frameworks or evidence based effective practises within the scope of midwifery.

Aim The aim of the project was to estimate the extent national midwifery regulation in Sweden and Malawi fulfil effective practices statements within the scope of midwifery.

Method A scoping review was conducted. The data, comprised national regulating documents outlining midwifery competences in Malawi and Sweden. The data was charted by extracting statements describing required midwifery competences. These
competence units were systematically mapped to the 70 effective practice statements, presented in the Lancet framework for quality midwifery care. The fulfilment of practice statements was evaluated using both an objective and subjective approach.

Result The subjective opinions of concordance differed, which granted an understanding on the subjective interpretation-gap in national regulation. The result also emphasized that Swedish midwifery regulation is fulfilling less effective practices within the scope of midwifery than Malawian regulation.

Conclusion The regulation of competencies differed, and the Malawian regulation had higher range of fulfilment than the Swedish. Therefore, the national regulated documents might not have an actual impact on the outcome. Swedish regulation documents were considered to have more salutogenic perspective and Malawian emergency care angle

Svensk Sammanfattning

Bakgrund Kompetensen hos en barnmorska är av betydelse för maternell- och neonatal hälsa världen över. Integrering av utbildade, reglerade och licensierade barnmorskor i hälsovårdssystem är förknippat med en betydande minskning av maternell- och nyföddhets sjuklighet, dödlighet samt en förbättrad vårdkvalitet (UNFPA, 2014). Det finns en rad olika riktlinjer på nationell nivå som reglerar barnmorskans kompetens och praktik. Evidensen understryker vikten av en nationell barnmorskreglering som överensstämmer med den internationella regleringen. Det saknas dock forskning som jämför nationell barnmorskreglering med internationella kompetensramar eller evidens baserade effektiva praktiker inom barnmorskans kompetensområde.

Syfte Syftet med projektet var att bedöma i vilken utsträckning nationell barnmorskereglering i Sverige och Malawi uppfyller de 70 evidens baserade effektiva praktikerna inom barnmorskans referensram som presenterades i tidskriften Lancets ramverk för barnmorskans kvalitetsvård.

Metod En Scoping review genomfördes. Data bestod av nationella regleringsdokument för barnmorskor i Malawi och Sverige. De delar i regleringsdokumenten som beskrev barnmorskompetenser extraherades och benämndes kompetensenheter. Kompetensenheterna länkades systematiskt till de 70 effektiva praktikerna från Lancets ramverk. Vi analyserade hur väl de effektiva praktikerna uppfylldes av de länkade kompetensenheterna. Analysen gjordes utifrån både ett objektivt och subjektivt tillvägagångssätt.

Resultat Tolkningarna av i vilken utsträckning barnmorskeregleringen uppfyller de effektiva praktikerna skiljde sig från varandra. Vilket gav en förståelse för det subjektiva tolkningsgapet i nationell reglering. Resultatet betonade också att svensk barnmorskereglering uppfyller färre effektiva praktiker inom ramen för barnmorska än malawisk reglering.

Slutsats Den nationella barnmorskeregleringen I Malawi och Sverige skiljer sig. Malawiska dokument uppfyller de effektiva praktikerna i större utsträckning än svenska dokument. Utsträckningen av hur de effektiva praktikerna uppfylls av nationell kompetensreglering bedöms eventuellt inte någon betydelse i praktiskt arbete. De svenska dokumenten anses ha ett salutogent perspektiv och Malawiska dokumenten har mer focus på akutvård.

Contents

Introduction

Globally there is an estimated number of 289 000 maternal deaths a year. A big gap in maternal mortality exists and is found between high and low income countries. The sub-Saharan Africa region alone accounted for 62% of the maternal deaths in 2013 (WHO, 2014). Malawi, one of the poorest countries in Sub Saharan Africa, is facing a daunting maternal mortality ratio [MMR] which currently stands at 460 per 100000 livebirths (UNFPA, 2014). Additionally, the infant and childhood mortality is 420, one of the highest in the world. In contrast Sweden is one of the leading countries in the world when it comes to high quality maternal care. In 2015 the MMR was 4 per 100000 and the childhood mortality was 3 per 1,00000 (UNFPA, 2014) Historically Sweden has made great progress in increasing quality of maternal health care and lowering the MMR. The increased enrolment of a competent midwifery workforce is described as a contributing factor for the improvement (Högberg, 2004).

Background

Reducing inequalities and increasing maternal health

The world health organization [WHO] implies the need for evidence explaining why some low- and middle-income countries (LMICs) do better than others- and which strategies accelerate progress within the maternal health sector (WHO, 2014). The following section presents existing research on strategies to improve maternal health.

The millennium Development goals (MDGs) were created in the beginning of the millennium by the world leaders gathered in United Nations to form broad vison to fight poverty. The fifth goal was to improve maternal health. One of the evidence based solutions was stated to be birth assistance by skill health care personnel. In 2014 more than 71 percent of the births globally were assisted by skilled birth assistance. The global MMR has fallen by nearly half short of the two-thirds reduction the MDGs aimed for (UN,2016).

WHO have formed "*Success factors for reducing maternal and child mortality*". This analytical framework builds on consensus from evidence based cost-effective investments and interventions. Some the factors presented to reduce mother mortality is investment in health system focusing on "Access to health services". This framework also proposes skilled birth attendance as one key factor that can contribute to the reduction in MMR (Kiuruvilla et al.,2014). Reassuring that women deliver in health facilities and increasing the numbers of

deliveries with skilled attendance is described as important indicators to reduce the inequality gap in MMR (Campbell & Graham ,2006).

The global trends in assistance at childbirth has shown a slow but unmistakable movement towards a higher number of births assisted by skilled personnel. But there still exists huge disparities across the world and within countries. The maternal health community has focused on strategies and approaches to reduce MMR in low- and middle-income countries (LMICs), by addressing the direct causes of pregnancy-related deaths. Some of these strategies have been partly effective e.g. the assurance of universal access to basic maternal care, increasing SBA and promoting birth in health facilities (Miller, et al, 2016)

A skilled birth attendant (SBA) is defined by ICM, WHO and Figo in 2004 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" (UNFPA, 2011; SoMy,2011)

Evidence emphasizes that reassuring skilled birth attendance may indirect reduce of the inequalities in maternal health care. Nevertheless, conclusions from a descriptive study on skilled birth attendants in sub Saharan Africa implies that the lack of standardization in the SBA's functions, trainings and names, makes it difficult to clearly define the remits of a SBA. Indicating the need to develop clear guidelines defining who is a SBA. (Adegoke, Utz,, Msuya, van den Broek, 2012).

The previously described WHO backed framework for increased maternal health also describe the implementation of regulated midwives as a health sector investment for increasing quality maternal health (Kuruvilla et al., 2014). For the achievement of this investment the midwifery regulation is considered an essential component. Estimating the national concordance to internationally outlined midwifery competences might contribute to the assurance of a competence, which is essential to empower birth attendants to provide high quality care (Sharma, 2014).

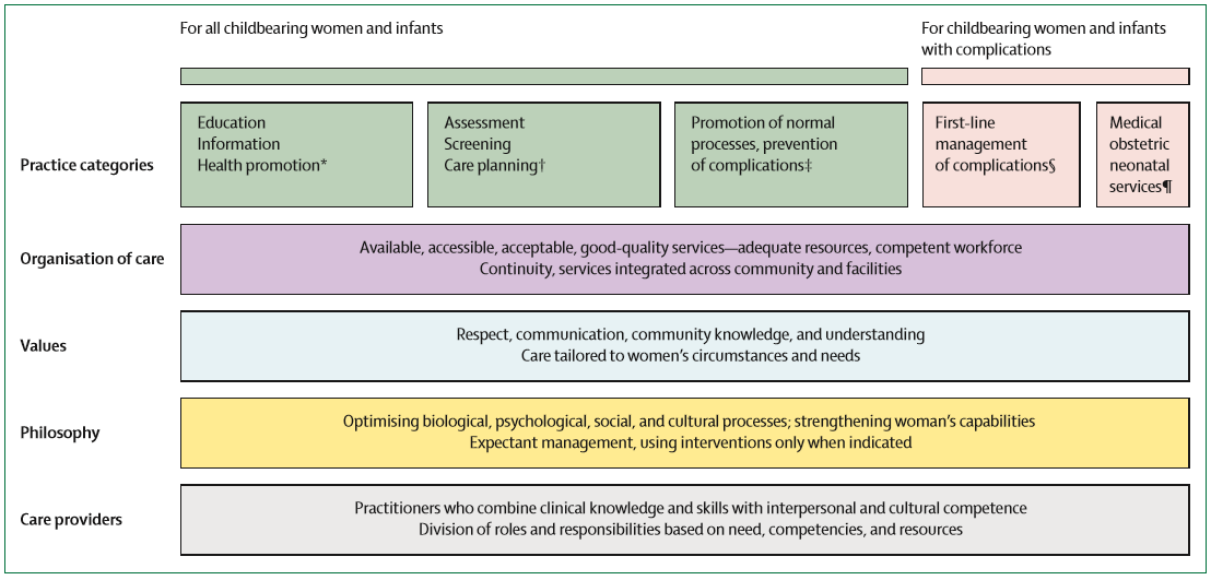
Although comprehensive research exists, there is no definite evidence regarding a general implementation strategy on reducing the inequalities in maternal health or increasing the quality of care (Hoope-Bender et al., 2014; Kuruvilla et al., 2014; WHO, 2014). However, the existing research on improving maternal health have resulted in policies, establishing goals

and development of evidence based frameworks. One of the global frameworks for high quality maternal health care is published in the Lancet Midwifery series. Within the framework the researchers conclude 70 practices, within the scope of midwifery, that can improve several maternal- and neonatal outcomes. Bellow follows an introduction to the Lancet series on midwifery and a resume of the conclusions from the first paper.

Effective practices within the scope of midwifery

Since June 2014, the Lancet has published a 6-papers series examining midwifery today. The first paper, is a three-paper review, presents a framework for quality maternal and new-born care intended to be relevant to any setting, and to all who need, or provide, maternal and new-born care. The framework identified both what a health system needs to provide high-quality care and how it delivers its functions and meets its goals within any context. The framework was developed using a mixed methods approach; conducting and using findings from three systematic reviews, including: Women's views and experiences, Practices within the scope of midwifery and Maternal and new-born care providers. The result was then completed through an interpretative synthesis, with opinions from 35 experts. The findings from the first paper support a system-level shift from maternal and new-born care focused on identification and treatment of pathology for the minority to skilled care for all.

Table 1. *The Lancet framework for maternal and new born care*



The first review examined women's views and experiences of maternal and new-born care. By reviewing 13 meta-syntheses of qualitative studies of women's views and experiences. The findings are suggested to be crucial components in identifying quality of care. The

findings supported midwives who:

- *Engendered trust and provided services in a respectful way*
- *Were empathic, kind and not acted abusive or cruel.*
- *Provided personalized care to individual needs.*
- *Gave women information and education for them to learn for themselves.*
- *Provided knowledge and understanding of the organization of services so the women can access maternal care in a timely way.*

The second review in the first paper examined the effectiveness of specific practises conducted within the scope of midwifery. By examining a total of 461 Cochrane reviews, (including 173 and excluding 287) the authors studied the efficiency of the practices. Data was retrieved from high-, middle- and low income countries. 70 practices were labelled effective; 2 practices were labelled as effective with a trade of between benefits and harm and 14 practices were marked as ineffective or harmful. The 72 effective practices were shown to increase 56 short-term, medium-term, and long-term outcomes; including reduced maternal and neonatal mortality and morbidity, reduced stillbirth and preterm birth, decreased number of unnecessary interventions, and improved psychosocial and public health outcomes.

The practices were then mapped into the framework for maternal and new-born care. Divided under following headlines: *Organisation of care, Education, information, health promotion, and public health, Assessment, screening, and care planning*, *Promotion of normal processes and prevention of complications or First-line management of complication.*

All the Effective practices described in the Lancet framework are shown in appendix 1.

Midwifery in Malawi

Malawi is one of the poorer countries in the world and the maternal health sector struggles with several problems. The quality of maternal health in Malawi is affected by the overall shortage of midwifes, their poor working conditions and status. The working hours for a Malawian midwife usually exceeds the stipulated upper limits;160h/month (WRAM, 2014). The midwifery workforce in Malawi 2014 was estimated to 1 registered midwife for every 10 women in reproductive age, which is haft of the recommended ratio, stated by the Nursing and Midwifery Council Malawi (WRAM, 2014). These estimations were based on registered midwifes and might differ from the actual number of practicing midwifes.

Three of the mayor challenges for the maternal health sector in Malawi were stated to be the high fertility rate, the low contraceptive rate and teenage pregnancies. In 2016, 29 percent of

adolescents (in the age of 16-19) had begun childbearing and 22 percent had already given birth. The issue of high adolescent fertility is of importance in both social and health grounds. Since teenage mothers are more likely to experience adverse pregnancy outcomes and encounter difficulties to conclude education than women who delay childbearing (MDHS, 2016).

The overall fertility rate in Malawi is high. In 2016 a Malawian woman was estimated to bear 4.4 children during her lifetime. (Since 1992 it has decreased from 6.7). The fertility is significantly higher among rural women then among the urban. On an average rural woman, will give birth to almost two more children than urban women (in their reproductive years) (MDHS, 2016). Estimations from the World Bank and the Malawi Demographic and Health Survey, shows that the CPR has increased, but is remaining comparatively low. Increasing from 30 percent, in 2000 to 44,4 percent in 2016. This percentage differ among women in the rural areas and urban areas ((MDHS, 2016; World bank, 2017)

The total population in Malawi 2012 was estimated to almost 15milion. Like several Sub-Saharan countries Malawi is facing a major demographic growth. According to The State of Midwifery Report; Malawi's population is projected to increase to 26 million by 2030. (UNFPA, 2014). This will increase the need for accessible, available and acceptable midwifery care.

Expanded research and investments in Malawi is needed to meet the universal need for sexual reproductive health, as defined by the SoMy2014 report (UNFPA, 2014). The report calculates workforce availability based on estimations of the time available for healthcare workforce and on time needed to reach the expected needs in sexual, reproductive, maternal and new-born health care (pre-pregnancy, antenatal, labour, postpartum and postnatal). Calculations from 2012 approximated that 20% of the need was met. To advance towards meeting the estimated needs for 2030 the report predicts that both the workforce and efficiency must increase. Per hypothetical estimations would a 2% efficiency increase per year result in 98% of the met need by 2030. Approximations to the met need would rise to 93% in 2030 if the number of enrolled students would double by 2020.

Midwifery in Sweden

Sweden has a leading role in the midwifery health sector. Great improvements in the Swedish maternal health sector has been made since the 18th century. The MMR has decreased and ICM newspaper recently stated Sweden to be the second best country to become a mother in (ICM, 2013). One of the reasons is predicted to be the well-established midwifery education. The decline in Sweden's maternal mortality rate parallels the professionalization of birth assistance and assisted births (Högberg, 2004).

Sweden was one of the first countries to announce a degree of authorization for midwifes, in 1711. The Swedish Collegium Medicum propsed a national training for midwives in 1757. It is suggested that the founding of Stockholm's Karolinska Institute in 1810 to have led to further improvements in obstetric care at a national level. The rate of educated and trained midwifes increased when the education was opened up for additional aspirants, via a government decree 1819. The implementation of regulated midwifes in rural areas in Sweden, increased rate of assisted births. The increase in assisted home births between 1861-1894 is in correlation with a decrease in MMR

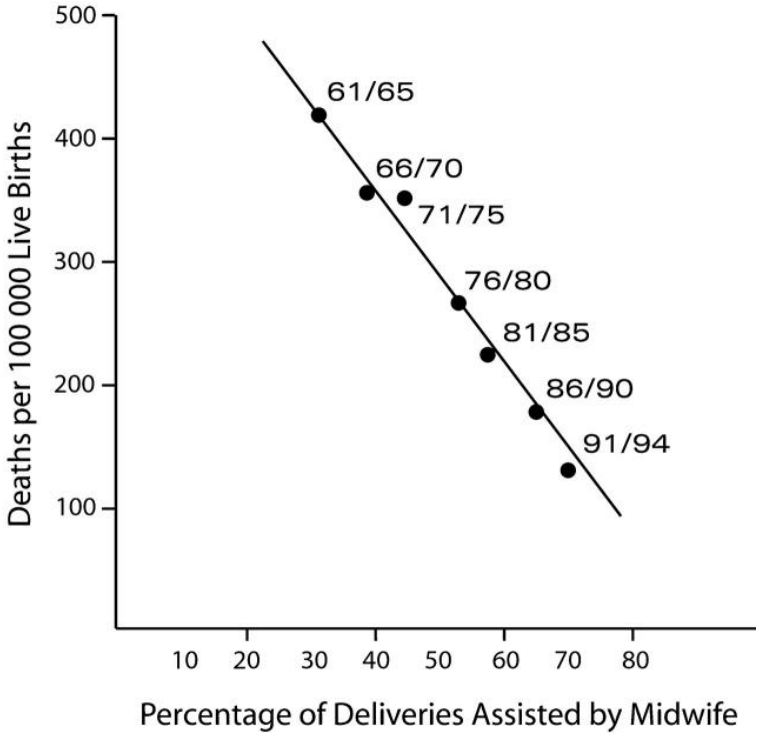


Figure 1. Midwifery service in rural areas in Sweden and maternal mortality (septic deaths excluded) for the years 1861 through 1894, (Högberg, 2004).

Access to contraceptive methods and legal access to pregnancy termination is linked to low rates of unintended pregnancy. In Sweden, there is easy access to contraceptive counselling and effective contraception. However, Sweden have one of the highest rate of abortion in

western Europe (socialstyrelsen, 2014; Kopp Kallner, Thunell, Brynhildsen, Lindeberg, Gemzell Danielsson, 2015). It is most likely that women in Sweden deliver their firstborn at the age of 28,6 (Socialstyrelsen,2016). A report by Socialstyrelsen (2013) suggests that the average age of the mother when having her first baby has increased due to the women's role in society (Kunskapsstödet, 2015).

National regulatory bodies for midwifery practice

Both Sweden and Malawi have official regulatory authorities for midwifery practice: The National broad of Health and Welfare in Sweden and The Nurses and Midwives Council of Malawi [NMCM]

National regulatory authority in Malawi

The Nurses and Midwives Council of Malawi [NMCM] is the regulatory body of nursing and midwifery education, training, practice and professional conduct in Malawi. It was established in 1966 (under an Act of Parliament Chapter 36: 02 and revised as No 16 of 1995) as a non - profit making statutory organisation. Since 1995 the council holds the legislated mandate to develop maintain and administer professional nursing and midwifery standards. NMCM is the only authority in Malawi to hold the regulatory responsibility to register midwife practitioners. The described goal of NMCM is defined as *"*ensuring the provision of quality nursing and midwifery service to the public". By implementing following strategic objectives NMCM strives to achieve the goal:

- Enhance quality nursing and midwifery education and training.
- Promote safe practice for nurses and midwives according to standards
- Promote evidence based quality nursing and midwifery care
- Strengthen management systems.

(NMCM, 2016; NMCM, 2013; NMCM, 2007)

National regulatory authority in Sweden

The Swedish National broad of Health and Welfare is a government agency in Sweden under the Ministry of Health and Social affairs. The National broad of Health and Welfare is the regulating authority for midwifery practice in Sweden. It is the only authority in Sweden that holds the mandate to conduct midwifery registration and license to practice. The organization develops national standards for medical care with the goal to contribute towards patients receiving high standards of medical care based on current research, health statistics and

Swedish laws (Socialstyrelsen, 2017)

Midwifery education in Malawi

It is possible to become a registered midwifery practitioner in Malawi by concluding different educational programs. Previously all students had to train as nurses first and then choose midwifery; In 2014 Malawi initiated a direct entry program for aspiring midwives. Nevertheless, the enrolment of registered midwives is still included in the educational program for reg. nurses. The first three years of the diploma programme consists of nursing training-, and the last year midwifery.

Today it exists four different cadres (i.e. classifications) of midwifery practitioners in Malawi, which are structured into two academic levels. A midwife's cadre is determined by her/his qualification and educational preparation; e.g. additional education and practice leads to a higher level.

Table 1, Academic levels and midwifery cadres in Malawi.

Level	**Cadre**
Level 1	Advanced midwife
	Professional midwife
	Registered midwife
Level 2	Nursing and midwifery technician (enrolled midwife)

Lever one include practitioners specified within midwifery i.e.: Registered midwife, Professional midwife and Advanced midwife. Level two includes registered midwifery practitioners, not specified within midwifery, i.e.: Nursing and midwifery technician (also called enrolled midwife). Registration of all midwife practitioners is conducted by NMCM.

The first, (most basic) cadre of midwife is Nursing and Midwifery technician; defined as a person who has completed a nursing and midwifery technician diploma or certificate and is qualified and authorized by NMCM to practice as a Nursing and midwifery technician.

(level one) The second midwife cadre is Registered midwife; defined as a person who successfully completed Diploma program of basic midwifery education from an accredited institution and is qualified and authorized by NMCM to practice as a Registered midwife

The third cadre is professional midwife: a person who has successfully completed a Degree program of midwifery education from an accredited institution and is qualified and authorised by the NMCM to practice as a Professional Midwife.

The forth cadre is Advanced midwife, qualified as a person who uses comprehensive skills, experience, and knowledge in midwifery care and has successfully completed a Master's Degree or PhD program of advanced midwifery education from an accredited institution and is qualified and authorised by the NMCM to practice as an Advanced Midwife (NMCM, 2013).

Midwifery education in Sweden

In the European Union, the midwifery education is regulated by the International Ethical Codes. In Sweden, the ethical codes are bodied by The Swedish Association of Midwives.

There are two different midwifery educations in Sweden. Both educations are based on the three years of a Bachelor of Nursing degree in Healthcare Science. The recommendation is to have at least two-year practical experience on nursing thereafter apply for a further education. All the higher education institutions except one have a one and a half year of Midwifery Science education that leads to an academic professional and a qualification *of a* registered midwife. Gothenburg's university have a two years' program that leads to a Master's degree in Midwifery Science. All programs are established on the Swedish Högskoleförordningen.

Midwifery regulation

There exists a range of different policy documents on national levels regulating midwifery competence and practice. A competence regulating document is based on a consensus process at national level and expresses recommendations regarding professional skills, skills, approach and experience. The competence description is used as a basis for institutions, activities and individual midwives. A national competence regulation for registered midwifes is a way to ensure midwifery skills and professionalism.

International midwifery regulation

Several authorities have made guidelines or regulations for the midwifery profession. WHO and the International federation of Gynecology and Obstetrics [FIGO] are together with the ICM guidelines cited in national documents. The adopted definition of a midwife, describe the profession to be based on the ICM essential competences for basic midwifery practice. Therefore, we use this document as an outline for global midwifery regulation. Presented

below is a description of the ICM, and the ICM issued “Essential competences for basic midwifery practice”.

ICM The International Confederation of Midwives

The International Confederation of Midwives (ICM) is a confederation of midwifery associations representing countries around the globe. The ICM develop and promote guidelines and standards that describe the expected context and structure of midwifery education programs. ICM also provide assistance for development of regulations for midwifery practice and support countries to strengthen and develop leaders of midwifery profession. The ICM collaborate with governments in support of safe motherhood and primary health strategies for families worldwide. ICM works closely with the World Health Organization and all United Nation agencies. The ICM takes a leadership role in the development of the definitions delineating of midwifery practice.

The ICM essential competences for basic midwifery practice.

This ICM regulating document describe what is expected of a midwife to know and what does a midwife do. The competencies are considered basic or core and are an expected outcome of midwifery pre-service education.

The competence statements are constructed of both broad statement, heading each section, and piled specified competence statements, defined as knowledge, skills and behaviours required of the midwife for safe practice in any setting. Additional knowledge and skill statements are included, defined as those that can be learned or performed by midwife who engage in a broader practice. The competencies are divided to seven Competence areas:

Competency in social, epidemiologic and cultural context of maternal and newborn care
Competency in pre-pregnancy care and family planning
Competency in provision of care during pregnancy
Competency in provision of care during labour and birth
Competency in provision of care for women during postpartum period
Competency in postnatal care of the newborn
Competency in facilitation of abortion-related care (ICM, 2010).

The ICM Essential competencies for basic midwifery practice is an International evidence-based, regulating document stating midwifery competences. The competencies are created in recognition that midwife receive their skills and knowledge through different educational

programs. This allow variation in the midwifery practice worldwide depending on the need of their local and nation (ICM, 2010).

The midwifery core competencies are written as a global reference for midwifery competencies. (International Confederation of Midwives, 2013). However, the remits of midwifes on global, national and sub national levels varies significantly. Consequently, some competencies described might be more accurate (or "improper") depending on the context.

Low income countries have the tendency to emulate high income countries educational standards and desired health care outcomes. Which can result in local education standards and desire to fit into a framework that are in place elsewhere. Many of the competency domains for midwifes are universal. However, more specific competencies in high income countries are presumed in a particular health care system, were those competencies can be developed and valued. This may not be the circumstance in low income countries even though the universal domains are the same. Competencies varies between countries -it is sensitive to the context of the culture and the individual (Gruppen, Mangrulkar & Kolars, 2012).

Another crucial issue that arise within this topic is that having competence might not be the same as performing it. As described by Grimshaw and Russell (1994) a successful fulfilment of guidelines is dependent on many factors, including clinical context and psychological aspects.

Competence

Competence is defined in the oxford dictionary as the ability to do something effective ly and successfully. (Oxford dictionary, 2016). Bäck, Hildingsson, Sjöqvist and Karlström (2016) describes midwifes competence as a learning process accomplished through experience over time not necessarily through education and training, it is a combination between different factors. Some work place conditions can contribute to enhancing midwifes confidence; Such as the feeling of safety and security in a professional role, positive feedback and influence of colleagues. There is also a link between the amount of hands on intrapartum experience, assisting many births and confidence. Midwives confidence is related to increasing professional competence in the everyday practice of hands on skills.

Competencies may reflect specific goals of education, express institutional, disciplinary or national priorities. Different institutes may define competencies differently or use different terminology for similar domains or even have different conceptions of what constitutes a 'competent' professional. To make competencies relevant to education, they must be

translated into more specific statements that include the context. It is easier to develop educational activities and assessment tools for more specific detailed competency statements then for broader domains (Gruppen, Mangrulkar & Kolars, 2012).

Motivation and purpose

There is a range of different policy documents regulating midwifery competence and practice. Ensuring an internationally regulated midwifery workforce enables midwifes to provide high quality care that contributes to ending preventable mother and neonatal mortality and morbidity (UNFPA, 2014) The evidence reveal the importance of a national midwifery regulation in concordance to the international outlines. Nevertheless, little research exists in comparing national midwifery regulation to international competence statements or to effective practices in frameworks for quality midwifery care.

There also exists a research gap on differences and similarities of midwifery regulations in low- and high-income settings. Therefore, could a comparison on Sweden and Malawi, be appropriate.

The prospect of reviewing national regulation addressing midwives' competencies is illuminate if national regulation is compatible with an international outline and up to date in evidence based effective practices within the scope of midwifery.

The aim

The aim of the project was to estimate the extent national midwifery regulation in Sweden and Malawi fulfil effective practices statements within the scope of midwifery.

Method

As our aim comprised scrutinizing national regulation documents (such as standards and guidelines) outlining midwives' competences in Malawi and Sweden, a scoping review was considered the most suitable method. Since scoping reviews allow researchers to examine all types of research literature and grey literature within their chosen area and apply a systematic approach to mapping the literature, methods, evidence, theories and research gaps within a specified area (The Joanna Briggs Institute, 2015). Identifying differences and similarities between the guidelines can be done by mapping midwives' competencies as described in the

different guidelines. Conducting a scoping review also generate access to consult stakeholders. In this project stakeholders enabled a subjective validation of our mapping.

Definitions
This project adapted following definitions from ICM.

Guideline(s) "A detailed plan or explanation with illustrative examples of actions; a series of steps to implement a standard. A guideline is never mandatory in contrast to a 'standard' that is expected to be met."

Midwifery regulation "The set of criteria and processes arising from the legislation and prescribed by the Midwifery Regulatory Authority that controls the practice of midwifery in a jurisdiction including identifying who can hold the title 'midwife' and practise midwifery.
Regulation includes registration/licensure, approval and accreditation of midwifery education programmes, setting standards for practice and conduct and processes for holding midwives to account in relation to professional standards."

Midwifery registration/licensure "The legal right to practise and to use the title of midwife. It also acts as a means of entry to the profession within a given jurisdiction."
(ICM, 2010).

The definition of midwifery is borrowed from in lancet series on midwifery

Midwifery "Skilled, knowledgeable, and compassionate care for childbearing women, newborn infants, and families across the continuum throughout pre-pregnancy, pregnancy, birth, post-partum, and the early weeks of life. Core characteristics include optimizing normal biological, psychological, social, and cultural processes of reproduction and early life; timely prevention and management of complications; consultation with and referral to other services; respect for women's individual circumstances and views; and working in partnership with women to strengthen women's own capabilities to care for themselves and their families".
(Renfrew, McFadden, Bastos, Campbell et al, 2014)

Framework for the scoping review
This scoping review has been guided by the six-stage framework described by Arksey and O'Malley (2005) and The Joanna Briggs Institute (2015). The description- and implementation of the methodology for the scoping review is explained within following six stages.

Stage 1
The first stage in a scoping review consists of identifying the research questions. This is completed by the previously defined aim of the project.

Stage 2 and 3
Identifying relevant data (sample and data collection). The search strategy included national regulating documents from Sweden and Malawi, outlining competences for registered midwives: e.g. standards, practice statements, scope of practice. The data collection in Sweden and Malawi differed and is therefore described separately.

Data collection Malawi

NMCM, the national regulatory authority for nurses and midwife practice in Malawi; was consulted for the data collection. The head of department provided us with five regulatory documents that were in use by the time of the data collection. By additional research on the NMCM website another accurate document regulating midwifery practice in Malawi was added to the data.

Data collection Sweden

Regulating documents were retrieved from two different websites: The national board of health and welfare (Socialstyrelsen) and the Swedish Association of Midwives (Barnmorskeförbundet). The knowledge support (Kunskapsstödet för mödrahälsovården) was fund in the national board of health and welfare website and the Description for registered midwifes (Kompetensbeskrivning för legitimearde barnmorskor) was fund in the Swedish Association of Midwives website.

Inclusion and exclusion

National regulating documents outlining competences for registered midwifes that where "in use" at the time for data collection and published by the national regulatory authorities for midwifery practice where included. Documents concerning midwifery education and local standards were excluded.

In Sweden one of the three collected documents were excluded since it was a regional guideline. The competence description for registered midwifes (kompetensbeskrivning för legitimerad barnmorska), published by Socialstyrelsen 2006, was under review by the time of the data collection. Nevertheless, this document was used, since it applies until further notice (barnmorskeförbundet, 2016).

From the Malawian regulation, one document focused on midwifery education, and where therefore excluded. The Scope of Practice for all cadres of Midwifery Malawi was partly excluded from the review. The parts excluded described competencies for a higher academic level of midwifery than registered midwife.

International competence regulation

For the comparison with an international outline of midwifery competences the ICM Essential competences for basic midwifery practice was used. The document was considered accurate for the comparison since it's a global document outlining the essential competences for midwives. It is acknowledged by midwifery organizations around the world, and used as a base for midwifery education and practice in various countries. The restriction of the

international documents (to only the ICM Essential Competences), were due to the limited time and size of the project. The possible risk of bias, not including other international regulating documents is acknowledged by the authors.

Formal assessment of the quality of the collected data was not performed as the aim of the scoping review was to present a map of existing guidelines.

Stage 4

In scoping reviews, the data extraction process is called charting the data. All included data is carted to fit with the aim for the study.

Extracting competence units

Statements describing required competence achievements of midwifery practitioners where named "Competence Units". Most of the Competence Units where structured in a piled format and easy to detect. All Competence Units were extracted, counted, coded and pasted into separate documents.

The competence units varied in length, e.g. number of words in each unit. Including only the number of competence units would not reflect the dimension or the content of the competence units. Therefore, also the number of pages in each document were counted.

Table 2, Collected and included data.

Document	Developed by	Year	Provided by / Retrieved from	Competence Units /Pages
Essential Midwifery competencies for Malawi	NMCM & WHO	2012	NMCM	290 / 17
Professional Practice Standards for Registered Midwife	NMCM, WHO Africa	2012	NMCM http://www.nmcm.org.mw/	409 / 39
Standards for midwifery practice	UNFPA, NMCM, WHO	2007	NMCM	985 / 84
Scope of Practice for all cadres of Midwifery	NMCM, UNFPA, I-TECH	2016	NMCM	124 / 35
Standards for nursing and midwifery education	NMCM, ICAP	2013	NMCM	Excluded
Knowledge support Kunskapsstöd för mödrahälsovården	The national board of health and welfare	2015	The national board of health and welfare http://www.sosialstyrelsen.se	76 / 19
Basprogram för vård under graviditet	Stockholms läns landsting	2016	Health giving guide http://www.vardgivarguiden.se	Excluded
Kompetensbeskrivning för leg barnmorska	The national board of health and welfare	2006	The Swedish midwife association http://www.barnmorskeforbundet.se	303 /80

Documents marked in *gray* were excluded, or partly excluded from the review.

Classification of competence units
A structural pattern separating the competence units was found within all documents. This structure enabled a classification of the competence units. The units were classified as ether broad or specified units.

Broad Competence Units were broader statements, often presenting a new section and/or a headline. Specified Units were piled under Broad Competence Units, and often comprehended a more specific statement or task. This can be illustrated with an example from the ICM essential competencies for basic midwifery practice:

Ex: Broad Competence Unit

> *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*

Ex: Specific Competence Unit

> *The midwife has the skill/ability to take a comprehensive health and obstetric, gynaecologic and reproductive health history*

Stage 5
The fifth stage in a scoping review is collating, summarising and reporting the results. This stage was conducted by mapping all competence units to the efficient practices within the scope of midwifery (*Appendix 1*).

The specified competence Units were systematically mapped to the 70 effective practices (within the scope of midwifery) presented in the Lancet framework. We excluded the broad Competence units from the mapping, since they were considered too extensive to be mapped to the narrow descriptions of the effective practices. The mapping process was done separately for Sweden and Malawi, the method remained the same.

Both authors read the practices one by one to establish a univocal definition of every practice. We focused on one practice at the time and scanned the first document with Competence Units. The Competence Units considered linked to a practice were pasted into a table. A reversed scanning was then conducted; Starting by reading the competence units one by one, and adding competence units, that were considered linked to practices, to the table. This resulted in a table with the 70 effective practices in one column, and corresponding mapped competence units in the next column.

Modification of the mapped competence units

Several mapped competence units where recognized as similar in content, and where therefore modified. In this process, we tried to keep the essence of the competence units and still abbreviate the amount of text.

This process is illustrated by following example from the Essential midwifery competencies for Malawi:

Practice	Competence Units	Modified Competence Units
Exclusive breastfeeding for at least 6 months for optimal health benefits	70. How to explain and support breastfeeding 112. Ways to support and promote uninterrupted [exclusive] breastfeeding. 151. Initiate breastfeeding as soon as possible after birth and support exclusive breastfeeding. 182. Initiate and support uninterrupted [exclusive] breastfeeding/safe infant feeding practice.	*The midwife has the knowledge and/or skill to:* *Support, initiate, explain and promote breastfeeding and uninterrupted [exclusive] breastfeeding. (1:1, 1:2)*

Table 3, Example of abbreviated competence units

Several mapped competence units included "statements" that were not linked to practice. By extracting the "non-linked" segments from the Competence Units, these competence units were also modified. In this condensation process, we tried to keep the essential parts of each competence unit intact. Bellow follows an example, using competence units from the essential midwifery competence for Malawi:

Table 4; Example of condensed Competence Units

Practice	Competence Units	Modified Competence Unit
Screening for and treatment of antenatal lower genital tract infection for prevention of preterm delivery	94. Identify and refer variations from normal during the course of the pregnancy suspected polyhydramnios, diabetes, fetal anomaly (e.g. oliguria) abnormal laboratory results, sexually transmitted infections (STIs), vaginitis, urinary tract, upper respiratory, fetal assessment in the post-term pregnancy. 95. Treat and/or collaboratively manage above variations from normal based upon local standards and available resources	*Identify and refer variations from normal during the course of the pregnancy i.e. sexually transmitted infections (STIs), vaginitis, urinary tract infections; Treat and/or collaboratively manage above variations from normal based upon local standards and available resources (1:2)*

Establishing a Concordance rate between national regulation and The ICM document

Establishing an objective range of the concordance was conducted by detecting whether the mapped competence units included specific-, unspecific or no requirements linked to practice.

We scanned the competences, and marked the practices with either “Unspecific requirements linked to practice”; “Specific requirements linked to practice” or “No requirements linked to practice”.

Effective practice	ICM Competence Units	Malawian Competence Units	Swedish Competence Units
Insecticide-treated nets for prevention of malaria in pregnancy	*Prevention of malaria in pregnancy and promotion of insect treated bed nets (ITN)*	*Screening for malaria; Use of disease prevention strategies and elements of health promotion*	*Disease prevention strategies; Health promotion.*
Mapped Competence Units include	Specific requirement linked to practice	Unspecific requirements linked to practice	No requirements linked to practice
Explanation	The competence units address both malaria prevention and specifies ITN	The competence units address malaria and disease prevention, but do not specify ITN	The competence units address general disease prevention, but don’t specify neither Malaria or ITN.

Table 5. Process of detecting the objective concordance

Since regulation documents are subjects for subjective interpretation it is also of importance to evaluate the subjective fulfilment. This evaluation was done by estimating how well the linked competence units could fulfil the effective practice statements. To minimize an unambiguous interpretation, we formed and used an “Instruction guide” for the interpretation.

Instruction guide

Fulfilled If practice in can be fulfilled by the linked statements. Competence unit contains requirements to fulfill practice.

Partly fulfilled If practice in some way/implicit can be fulfilled by the linked statements. Competence unit contains requirement to partly fulfill practice.

Not fulfilled If practice not can be fulfilled by the linked statements / absence of statements. Competence unit don’t contain requirement to fulfill/ partly fulfill practice.

Not applicable If practice indistinct/indefinite/vague or if practice to not fit in to the context.

The Competence Units extracted from the ICM Essential competences for basic midwifery practice were used to determine the concordance between international-, national regulation and effective practices.

Stage 6

The consultancy of stakeholders is an optional step in scoping reviews that can provide useful insights beyond literature. The summary of the Practice-Competence Unit -mapping served as base for consulting stakeholders.

The stakeholders were provided a table with the practice statements and linked modified Competence Units. A scale of fulfilment followed each practice. The stakeholders were asked to rate the fulfilment between effective practices and linked competence units using the (previously used) attached instruction guide.

Practice	*Linked Competence units*
Continuous labour support	*Emotional and psychological support during labour; Facilitate the presence of support person during labour (the continuous support is not specified) (1:1, 1:2)* *Identifies strategies to meet the client's need for physical, psychosocial and emotional comfort; Demonstrates warm welcoming attitude, comfort and psychological support to a woman and significant others (2:3:2)* *Provides a safe and therapeutic environment for clients/patients to promote their physical and mental well-being (4:1)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable

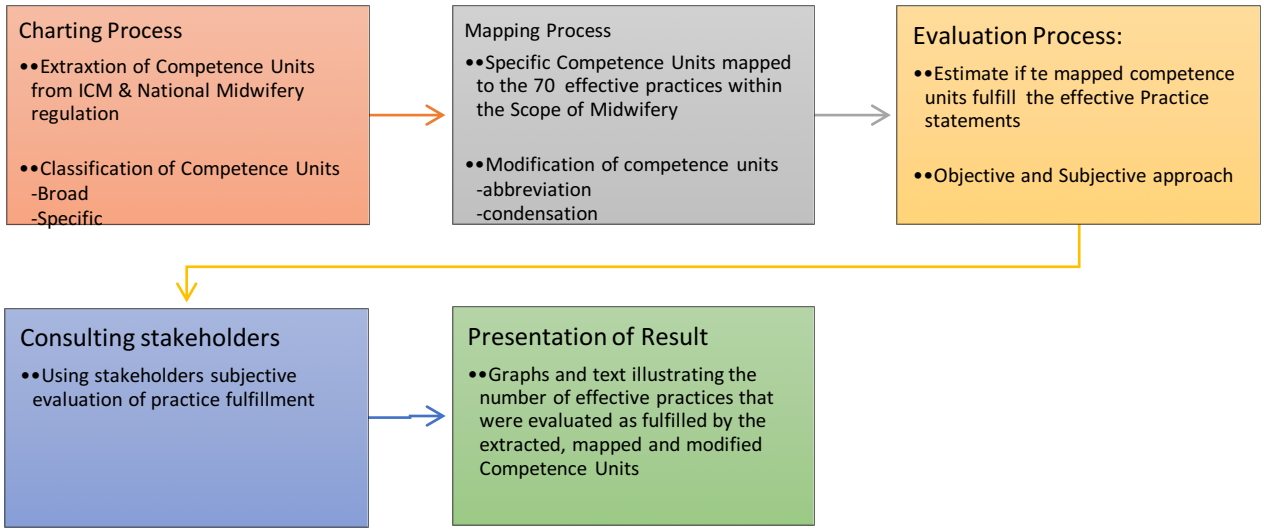
Table 6. An illustration of the practice- competence unit mapping including the fulfilment scale

A convenience sample of stakeholders were used. Two registered midwifes were consulted, and approved the participation in the review. One stakeholder was the head of department at a midwifery collage of nursing and midwifery in Malawi and the other stakeholder was a practicing midwife at a delivery department in Sweden.

The Swedish stakeholder valued the fulfilment between the effective practices and the Swedish regulation and the Malawian stakeholder valued the Malawian regulation. Both stakeholders got the same instructions and compiled the form alone.

We referred the stakeholders to use their own opinion in the interpretation process. The stakeholders had no questions about the instructions.

Figure 2 An overview of collecting, summarizing and reporting the results



Ethic

Ethical consent were not needed for the project since the reviewing was done with already published- and official documents. The consulted stakeholders approved their participation in the study. To obtain confidentiality the stakeholders were not mentioned by name.

Result

The purpose of a scoping review is to summarise and describe results across literature, and not to synthesise specific results (The Joanna Briggs Institute. 2015; Arksey & O'Malley, 2005; Levac, Colquhoun & O'Brien, 2010).

Characteristics of the national midwifery regulation in Sweden and Malawi

An incidental finding while accessing the national regulation was the diverse characteristics of the documents. The regulating documents varied significantly in structure; number of Competence Units, pages, content and terminology, e.g. terms used to describe the competence units. The differences were found within national regulation in Malawi and Sweden, and between the nations. These characteristics are briefly descried bellow.

Competence Units

The Malawian regulation had a total of 1808 competence units presented, of which 1690 where specific- and 118 broad units. 31 different terms were used to describe the statements we classified as competence units (ex: domains, competence areas, statements, indicators, midwifery roles). The documents had a total of 292 pages, 146 pages included competence units.

In the Swedish regulation, the number of competence units were less, 379. Also, the number of terms used to describe competence units were less, counted to be 17. (14 terms described broad competence units and 3 term described specified units. The knowledge support had not a defined term to describe the specific units. In this document the specific competence units were, described directly in "body" text, and not piled separately. (The knowledge support was the only document that did not piled the competence units). The Swedish regulation had a total of 99 pages, of which 67 pages included competence units.

The terminology of the competence units was somewhat synonymous. Two terms reoccurred, more than one time. The term "competence area" occurred in one of the Swedish documents (1) and in two Malawian documents (1,2). The term "indicator" was used in two Malawian documents (2,3).

All regulating documents were directed to individual midwife practitioners. Most analyzed documents were also designated to regulatory elements within the health facility. Three of the Malawian documents (1,2,3) presented competence units specifically directed to regulatory elements within the health facility. The Swedish regulating documents were directed to both regulatory elements and all practitioners within the maternal health sector.

The content of competence units

Most of the competence units, in both Swedish and Malawian regulation, focused mainly on normal processes during pregnancy, labour and postpartum periods. A part from normal processes, the Swedish competence units focused predominantly on psychosocial-, sexual- and reproductive wellbeing. While the Malawian competence units focused mainly on management of obstetrical complications.

A contrast between the described capacity for emergency midwifery practice, can be illustrated by following competence units concerning emergency management:

The Malawian regulation state that the "*The midwife has the ability and skill to resuscitate the distressed mother or asphyxiated newborn (Help Baby Breathe) and give appropriate care*

before referral." Swedish regulation only includes the midwifes ability to "*in emergency situations start life-saving treatments of mother and baby*".

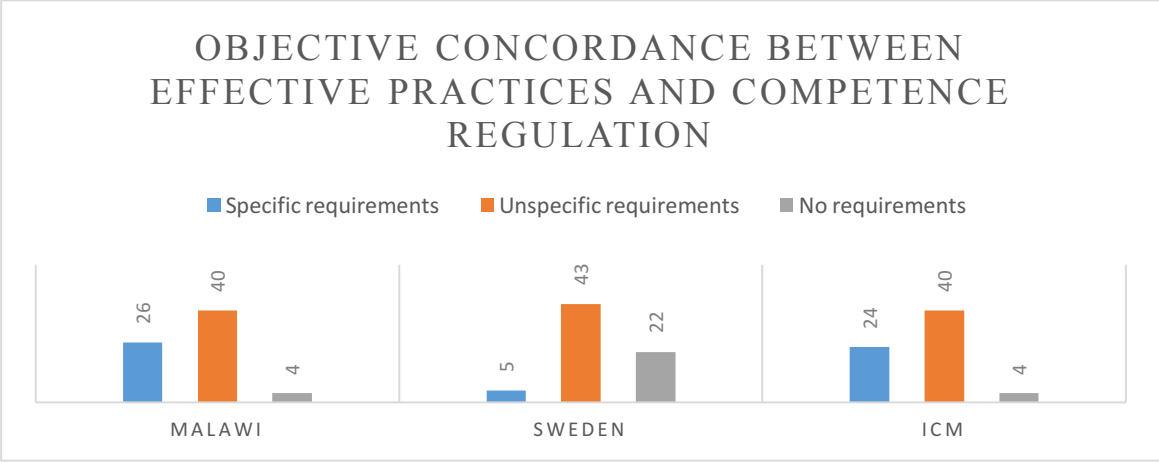
Two documents from the Malawian regulation (1, 2) were based- or partially based on ICM documents for basic midwifery practice. The essential Midwifery competences for Malawi, were adapted and modified ICM essential competences for basic midwifery practice. This Malawian document had additionally two competence areas/broad statements focusing on the management of obstetrical complications and leadership. None of the Swedish regulating documents were based on the ICM Essential Competences for basic midwifery practice.

The aim of the national midwifery regulation

The aim of the Malawian and the Swedish regulation were similar. The overall aim was stated to be promoting health and preventing ill health for the public. The regulation also aimed towards improving the quality of midwifery practice and education. The regulation was described as a guide for health facilities to develop own standards, by establishing a base for legal reference. For further comparison between the national regulating documents, a table with core characteristics for each document and brief narrative synthesis of the regulating document are included (*Appendix 3 and 4*).

Objective concordance between regulation and effective practices

The objective concordance between competence regulation and effective practices is illustrated by a graph and explained in text. The graph illustrates the number of practices, in national regulation and the ICM document, that included specific-, unspecific- or no requirements linked to the 70 effective practices. The text describes and clarifies some appearances in the result. The result reflects the concordance between national regulation and the international outline (ICM core competences for basic midwifery practice).



Graph 1: Number of effective practices linked to competence units including specific-, unspecific- or no requirements

In all competence regulating documents (Malawi, Sweden, ICM), most of the practices were mapped to competence units that had unspecific requirements. The number of practices that had no requirements or specific requirements differed more between the regulating documents.

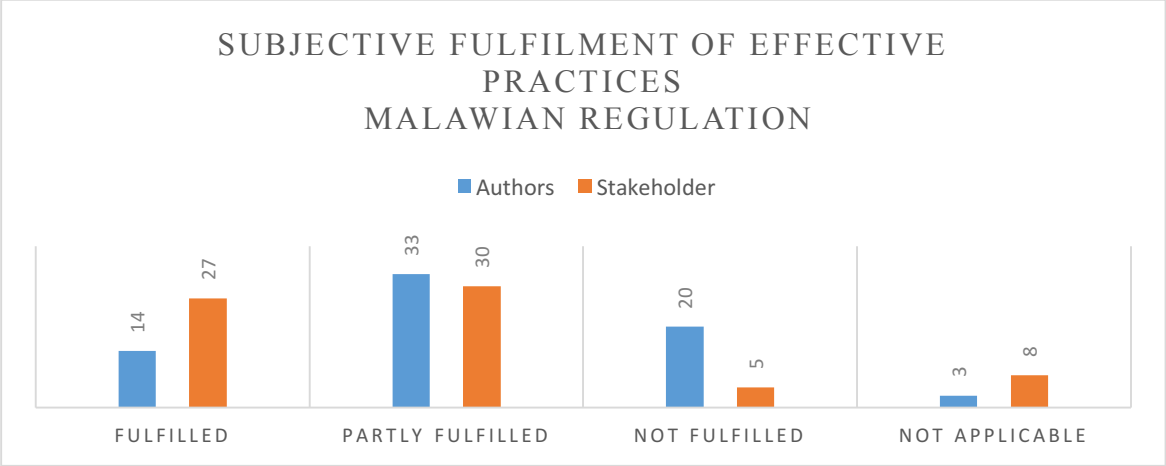
Swedish regulation differed from ICM and Malawian regulation in numbers of practices that include Specific requirements and no requirements. The practices that include specific requirements were fewer and the number of practices that were linked to no requirements were more in Swedish regulation. Malawian and ICM had a similar structure in objective concordance.

The result suggests that Swedish regulation do not outline competence descriptions of effective practices in the same extent as Malawian and ICM competence description.

Subjective concordance between national regulation and the effective practices

The subjective concordance between national regulation and the 70 effective practices within the scope of midwifery is illustrated by graphs and explained in text. The graphs present the number of effective practices rated as either *fulfilled, partly fulfilled, not fulfilled or not applicable*. The text explains calculations and clarifies some appearances in the result.

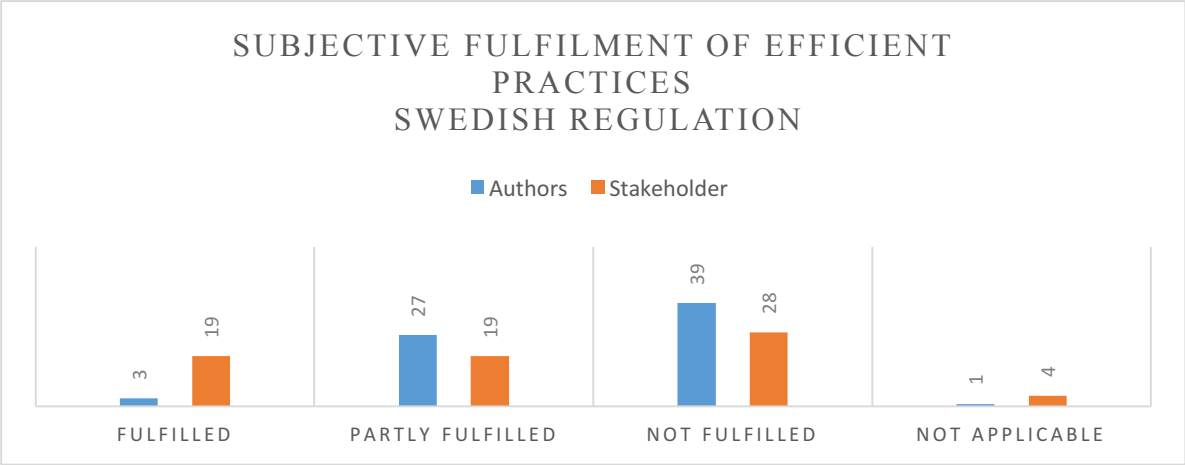
In the first two graphs the authors and stakeholders' interpretation of fulfilment is separated.



Graph 2: Number of effective practices fulfilled by Malawian regulation

Most the practice statements were considered as partly fulfilled (33/30) by competence units extracted from Malawian regulation. The subjective interpretation varied between stakeholder

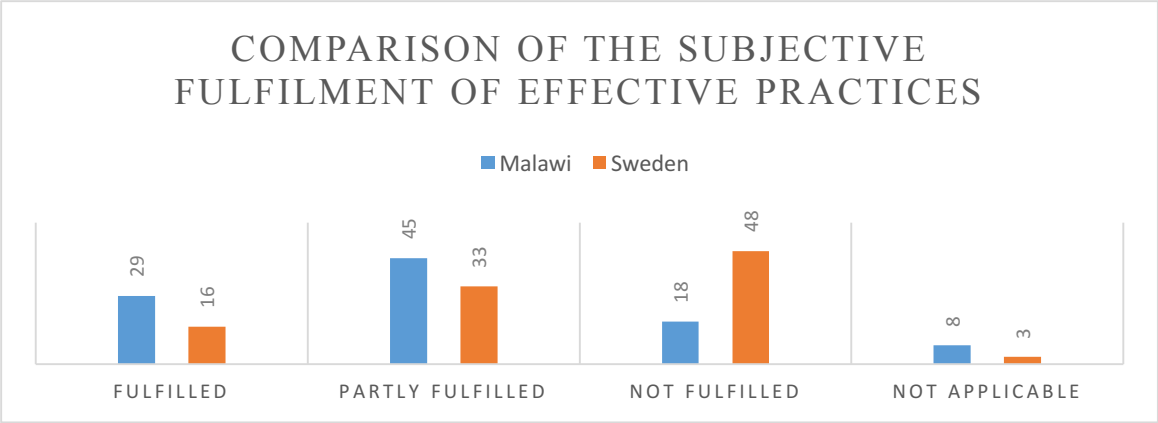
and authors. The Malawian stakeholder interpreted more practices being fulfilled and less practices being not fulfilled comparing to the authors interpretation. The stakeholder also rated more practices “not applicable” than the authors.



Graph 3: Number of effective practices fulfilled by Swedish regulation

Most effective practices were considered as not fulfilled (39/28) by the competence units extracted from Swedish regulation. The evaluation of fulfilment of practices differed between stakeholder and authors interpretation. Interpretation gaps were found between all categories of fulfilment. The bigger difference was seen in practices rated as fulfilled. In this category, the Swedish stakeholder rated 19 practices as fulfilled, and the authors only construed 3.

The subjective fulfilment of effective practices is a comparison between the fulfilment of effective practices in Swedish and Malawian regulation. It was calculated by adding stakeholders and authors estimations of fulfilment of the effective practices and then dividing it by the total number of practices. This process realized a percentage total subjective fulfilment of practices in Swedish and Malawian regulation. This is what following graph illustrates.



Graph 4: Comparison between number of effective practices fulfilled subjectively in Malawian and Swedish regulation

Including both stakeholder and authors interpretation of fulfilment, more practices are interpreted as fulfilled and partly fulfilled in Malawian regulation. Swedish regulation had more practices that were interpreted as not fulfilled. Emphasizing that Malawian regulation fulfil and partly fulfil the effective practices in a higher extent than Swedish regulation

The result can be interpreted as Swedish midwifery regulation is fulfilling less effective practices within the scope of midwifery than Malawian regulation. This both objectively and subjectively valued.

Discussion

Main findings in the study

Reviewing the regulating documents and linking the competence units to the Lancet framework leaves a gap for interpretation. There was different secondary focus in the Malawian and Swedish regulation documents. The Malawian documents focused more on the emergency preparations and the Swedish documents on preventing health to a larger extent. The Malawian documents fulfilled what has been defined as effective practices both subjectively and objectively and were more similar to the ICM guidelines.

The importance of regulation

According to research skilled birth attendant and investment in health system through easy access to health care are success factors to reduce the inequalities and increasing maternal health worldwide. Skilled birth attendant function is not continually clear due to standardizations and guidelines. The need of clarification and general implications strategies are of great need.

Low income countries tend to try emulate high income countries about their educational standards and desire health care outcomes. Which can result in local education standards and desire to fit into a framework that are in place elsewhere (Gruppen, Mangrulkar & Kolars, 2012). This could be seen in the Malawian regulation documents for example a Decision-making framework and a Reinforcement and implementation plan adapted from the Nursing and Midwifery Board of Australia. Most of the regulating documents were acquired form the international regulation but adjusted/ modified to the Malawian context. The essential competencies for midwifes had two additional competence areas compared to ICM, the two additional areas were context modified. A study by Miller et al. (2016) suggests that regulation documents need to reflect the local significances. Also, minimise implications from other contexts which might not increase the outcome and root avoidable harm and increase health care costs and inequalities.

Differences and similarities between the regulating documents

All the regulating documents had the same overall aim, promoting health and preventing ill health. The content in national regulating documents between Sweden and Malawi differed. Even the number of competence units and regulated documents that were included in this study differed between the nations. The Malawian had four national regulated documents while Sweden had two documents. Comparing the national regulations, Swedish national regulations had fewer competence units, used fewer terms to describe the units and had fewer pages. The main content in the national regulations focused on natural processes during pregnancy, labour and postpartum periods. The secondary focus in Malawian regulation was management of obstetrical complications, while Swedish regulation had a secondary focus on psychosocial-, sexual- and reproductive wellbeing (e.g. emergency vs wellbeing). This can be interpreted as if Swedish regulation has a salutogenic perspective, while the perspective in Malawian regulation focus more on emergency preparedness. The Lancet series suggest a system-level shift from maternal and newborn care, this means a change in focus from identification and treatment of pathology for the minority to skilled care for all. The change embrace supportive and preventive care that works to strengthen women's abilities, promotion of normal reproductive processes, and first-line management of complications and accessible emergency treatment are provided when needed. For this focus a change in midwifery is essential and requires effective interdisciplinary teamwork (Renfrew et al., 2014).

Research has shown that regulation documents appearances, such as simplicity to follow format and clarity of guidance, have an impact on the use by health workers' practice (Francke, Smit, de Veer & Mistaen, 2008; Gagliardi, Brouwers, Palda, Lemieux-Charles & Grimshaw, 2011). More similarities were found between the Malawian regulations and ICM essential competences for basic midwifery practice. The similarities between ICM and Malawi was found within the structure of the documents, the objective valuated concordance between regulation and the effective practice fulfilled by regulation (stakeholder and authors estimation). The Malawi regulation fulfilled more of the effective practices within the Lancet framework compared to the Swedish regulation document. In high income countries, the use of guidelines implementation has shown to be successful, this due to individual patient records and different versions for different users (Gustafsson et al., 2011). Although, the Swedish knowledge support for maternal health is directed to all health workers in the maternity sector, the document contains competence units about Midwifery practices.

Malawi has several regulating documents, founded by various contributing donors (WHO, UNFPA, I-Tech). One possible reason to the multitude regulating documents in Malawi could be lack of coordination of multitude donors supporting equivalent interferences. This is a common phenomenon in the maternal health field (Lavis, Oxman, Moynihan & Paulsen, 2008). The variation in structure and content might be since the Competence description for registered midwifes was published before the up to date international (ICM). The Swedish Competence description was published 2006 and the ICM was published 2010 and reviewed 2013. The Swedish documents are not based on essential competencies for basic midwifery practice unlike the Essential Midwifery competencies for Malawi.

A great part of the Swedish regulation focus on prevention, support and psychosocial wellbeing. The national regulation documents are broad and mainly unspecified. However, they are complementary with the regional and local guidelines and standards which implies that different health care facilities have different guidelines. The unspecified competence units leave a big gap for interpretation. The competence units for a Malawian midwife describes that she should "apply live saving skills during emergency care". Swedish competence regulation only describes her ability to "start live saving treatments".

The system-level change embrace supportive and preventive care that works strengthen women's abilities, promotion of normal reproductive processes, and first-line management of complications and accessible emergency treatment are provided when needed. For this focus change in midwifery effective interdisciplinary teamwork (Renfrew et al., 2014).

Interpretation of the regulations range of fulfilment

The subjective perception of the documents is of great importance to the matter of interpretation of the range of fulfilment fit into Lancet effective practices. The classification of the fulfilment range was subjective and varied between the stakeholders and the authors. The variation in the interpretation might be due to participants' experience and background information. The authors interpreted several of the practices as Not Fulfilled while the stakeholders validated the practice as Fulfilled. Both stakeholders value more practices as Fulfilled and Not applicable than the authors. With clinical experience the understanding in assessment in different work areas can be more accurate then without experience (Palomäki, Luukkaaala, Luoto & Tuimala, 2006). A reason for different estimations in the concordance rate may be since of the stakeholders long practical experience in the maternal health field which had an impact on their validation in interpreted the competence units as fulfilled or partly fulfilled effective practices.

When comparing the range of fulfilment between national regulations, the Malawian competence units do fulfil and partly fulfil more of the effective practices (independent of interpreter). Competence units in the Swedish regulation were considered fulfilling less effective practices, by both stakeholders and authors, which also reflects the objective concordance rate; Since less Competence Units in the Swedish regulation included specific requirements linked to practices. Improved documentation of successful and unsuccessful methods can progress and improve guideline adherence in maternity care, and allow these lessons to be shared (Miller et al., 2016).

Methodological considerations

In a scoping review triangulation is defined as the mixing of methods or data that diverse perspective or viewpoints that could present clarity in the topics. The mixing of data types eg. grey litterateur and stakeholders is acknowledged as triangulation. The triangulation helps in validating the findings (Barbour, 2001). The results were triangulated using national regulated documents, the Lancet series and stakeholders' assessments. Subjectivity cannot fully be avoided in the assessments. However, we still believe that the data collection tools, modifying the competence units and mapping them into the framework were relevant and useful. Both authors read, mapped and modified the competence units together. Therefor it is unlikely that

the results have been affected by modifying the competence units and linked to effective practices.

The documents in the Malawian regulation were complementary. Although the terms used to describe/pile midwifery competence (competence units) parted. A wider terminology to describe midwifery competencies made the regulation appear more complex. Several of the regulation documents was difficult to navigate and the competence unit. Use of different terminology can also create confusion for users and policy makers (Miller et. al., 2016). Baker et al. (2012) claims that difficulties in navigating guidelines can result in reducing their applicability in practice.

Limitations

We limited the data due to limited timeline and the great amount of data in the field, therefor we only used the ICM guidelines. For a more valid result we might have needed more than two stakeholders to assess the fulfilment of the competence units. Both authors read, discussed and co-mapped the competence units to the effective practices and possibly therefore less competence units were fulfilled or not fulfilled. The data the stakeholders received were modified competence units which could have left an overview of the competencies linked to effective practices.

Conclusion

By doing this study it was comprehended that the regulation of competencies differed and the Malawian regulation had higher range of fulfilment than the Swedish. Therefore, the national regulated documents might not have an actual impact on the outcome. Swedish regulation documents were considered to have more salutogenic perspective and Malawian emergency care angle.

Future research

Improving assess to clearer guidelines is factors that increase the maternal health.
Further research is of great need to declare the importance of developing and adapting guidelines.

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Acknowledgements

We gratefully acknowledge the time and contributions of the stakeholders and our supervisor.

We extend sincere appreciation to Kamuzu Collage of nursing and midwifery for a tremendously hospitality and expertise. And tack jättesnälla Karolinska institute that united the authors in eternal friendship.

And to Na3m who joyfully participated in our breakfast routine enriching the procedure with his purr, we love you.

Appendix 1

Effective practices for childbearing women and infants, from the Lancet framework for midwifery quality care

Organisation of care

• Alternative vs conventional institutional settings for birth
• Labour assessment programmes to delay admission to the labour ward until labour is in the active phase
• Exclusive breastfeeding for at least 6 months for optimal health benefits
• Community-based intervention packages for reducing maternal and neonatal mortality and morbidity and improving neonatal outcomes
• Midwife-led continuity models vs other models of care for childbearing women
• Not reducing the schedule of antenatal visits in settings where the number of visits is already low (eg, <5)
• Lay health workers in primary and community health care for maternal and child health and the management of infectious diseases

Education, information, health promotion, and public health

• Insecticide-treated nets for prevention of malaria in pregnancy
• Specifi c advice to increase dietary energy and protein intakes or energy and protein supplementation in pregnancy
• Interventions to promote smoking cessation in pregnancy
• Health education and peer support to promote breastfeeding initiation
• Supplementation with folic acid for women ≤12 weeks pregnant or pre-pregnant, for prevention of neural tube defects
• Routine zinc supplementation for improving pregnancy and infant outcomes
• Daily universal oral supplementation with iron or iron and folic acid during pregnancy for improvement of maternal health and pregnancy outcomes
• Intermittent oral supplementation with iron or iron and folic acid or iron and vitamins and minerals during pregnancy for improvement of maternal health and pregnancy outcomes
• Calcium supplementation during pregnancy for preventing hypertensive disorders and related problems
• Mutiple micronutrient supplementation during pregnancy
• Education for contraceptive use by women after childbirt

Assessment, screening, and care planning

• Screening for and treatment of antenatal lower genital tract infection for prevention of preterm delivery

Promotion of normal processes and prevention of complications

• Antiretroviral drugs for reducing the risk of mother-to-child transmission of HIV infection
• Drugs for prevention of malaria in pregnant women
• Antiretroviral therapy for treatment of HIV infection in antiretroviral therapy-eligible pregnant women
• Antenatal digital perineal massage to prevent perineal trauma
• Breast stimulation for cervical ripening or labour induction
• Continuous labour support
• Upright positions in the first stage of labour
• Relaxation techniques for pain relief in labour
• Inhaled analgesia for pain relief in labour
• Immersion in water in first and second stage labour
• Perineal techniques in second stage labour
• Restrictive episiotomy
• Unclamping previously clamped and divided umbilical cord and allowing blood from placenta to drain freely
• Active management of third stage labour
• Prophylactic ergometrine or oxytocin in third stage labour
• Carbetocin to prevent post partum haemorrhage
• Prophylactic oxytocin to prevent post partum haemorrhage
• Prostaglandin (misoprostol) to prevent post partum haemorrhage
• Skin-to-skin mother-baby contact within 24 h of birth
• Paracetamol (one dose) for early post-partum pain
• Any type of approved analgesia for pains after vaginal birth
• Analgesic rectal suppositories for the relief of pain from perineal suturing
• Support for breastfeeding mothers
• Tetanus toxoid for pregnant women to prevent neonatal tetanus
• Interventions to relieve constipation in pregnancy
• Topical treatments for vaginal candidiasis in pregnancy

First-line management of complications

• Antibiotics for conorrhoea in pregnancy
• Interventions for treating genital Chlamydia trachomatis infection in pregnancy
• Interventions for trichomoniasis in pregnancy
• Antibiotics for treating bacterial vaginosis in pregnancy
• Antibiotics for asymptomatic bacteriuria in pregnancy
• Treatments for symptomatic urinary tract infections during pregnancy
• Anti-D administration in pregnancy for preventing rhesus alloimmunization
• Interventions for preventing and treating pelvic and back pain in pregnancy
• Oral maternal hydration for increasing amniotic fluid volume in oligohydramnios
• External cephalic version for breech presentation at term

• Antiplatelet agents (low-dose aspirin) for preventing preeclampsia and its complications
• Planned early birth vs expectant management for pre-labour rupture of membranes at term
• Pharmacological and mechanical interventions to induce labour in outpatient settings
• Massage, reflexology, and other manual methods for pain management in labour
• Acupuncture or acupressure for pain management in labour
• Rapid vs stepwise negative pressure application for vacuum extraction assisted vaginal delivery
• Continuous vs interrupted sutures for repair of episiotomy or second degree tears
• Anti-D administration after childbirth for preventing rhesus allo-immunisation
• Treatment for women with post-partum iron deficiency anaemia
• Antibiotic regimens for endometritis after delivery
• Kangaroo mother care to reduce morbidity and mortality in low birthweight infants
• Preventive, non-pharmaceutical psychosocial or psychological interventions for the prevention of post-partum depression
• Fibreoptic phototherapy for neonatal jaundice

Emergency interventions:
• Magnesium sulphate for women with pre-eclampsia
• Magnesium sulphate for eclamp

Appendix 2

Name of regulating document	Number of Broad Competence Units Term/s used in document to describe BCU	Number of Specific Competence Units Term/s used in document to describe SCU	Pages including competence statements
Essential Midwifery competencies for Malawi	9 Competence areas	281 Three terms: Basic knowledge, basic skill, professional behaviors	13 (17)
Professional Practice Standards for Registered Midwife	18 Midwifery Roles (Provider and collaborator role,, Professional role,, Advocacy role)	391 Competence areas; Indicators Assessment, Planning, Implementation, Evaluation"	24 (39)
Standards for midwifery practice	82 Standards (41) & Aims (41) (General midwifery standards, Preconceptual care, Antenatal-, Intrapartum-, Postpartum and Neonatal care)	903 Outcomes, Prerequisites, Process, Audit, Input, Process, Output, Indicators, Rationale	80 (84)
Scope of Practice for all cadres of Midwifery	9 Domains (Clinical; emergency response; management: communication and collaboration; Advocacy; teaching; professional; research; and new technology and procedures)	115 The scope of practice	11 (35)
Kompetensbeskrivning för legitimerad barnmorska	3 Competence areas (conserning: Sexual and reproductive health; research, development and education; management and organization)	73 Delkompetenser Have the ability to, Have the ability in dialog to, have the ability to practice knowledge about,	8 (19)
Kunskapsstöd för mödrhälsovård	41 Headlines (Mödrahälsovårdens mål; Organisation och förutsättningar; Författningar som reglerar mödrahälsovården; Perspektiv på mödrahälsovårdens arbete; Mödrahälsovården - en del av folkhälsoarbetet; Att främja hälsa och förebygga ohälsa; Metoder och arbetssätt; Psykosocialt arbeta; Nationella riktlinjer – en översikt; Samverkan; Fortsatt arbeta med kunskapsstöd för mödrahälsovården.	261 No term used to define specific Competence Units	59 (80)

Appendix 3

Estimation of effective practice fulfilment by modified competence units in Malawian Regulation

Organisation of care

Practice	Guideline statements linked to practice
Alternative vs conventional institutional settings for birth	*Benefits and risks of available birth settings;(1:1) Strategies for advocating with women for a variety of safe birth settings (1:2)*; *The role of the midwife involves …addressing clients' needs in a variety of settings (2:1)* *(Competences/statements is not specified to practice, but linked to but to the individual midwife)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Labour assessment programmes to delay admission to the labour ward until labour is in the active phase	*Normal progression/physiology of labour and indicators that labour is beginning (1:1); How to use the partograph or similar tool (1:2); Perform assessment and monitoring of a woman during labour (2:3:1); Conducts routine admission procedures and relevant procedures as determined by the client needs (2:3:1)* *(Competences/statements is not specified to delay admission programmes but to the individual midwife)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Exclusive breastfeeding for at least 6 months for optimal health benefits	*Support, initiate, explain and promote uninterrupted [exclusive] breastfeeding. (1:1,1:2) Identifies strategies to meet the mothers and baby's need for adequate lactation (2:4:2) (Six months is not specified)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Community-based intervention packages for reducing maternal and neonatal mortality and morbidity and improving neonatal outcome	*Knowledge and skills of causes of maternal and neonatal mortality and morbidity in the local community; Strategies for improving reproductive health and midwifery services in community; Strategies for reducing maternal and neonatal mortality and morbidity (1:1, 1:2); Conducts immunization for the neonate; Administers initial immunizations according to national guidelines* (2:5:2)

	Fulfilled Partly fulfilled Not fulfilled Not applicable
Midwife-led continuity models vs other models of care for childbearing women	Unspecific skill requirement linked to practice: *Develop strategies for improving reproductive health and midwifery services in both the hospital and the community (1:2);* Utilizes advocacy skills to solicit and lobby for resources and support of development of programs or projects needed to improve midwifery and reproductive health services. (2:1:2, Health policy development)
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Not reducing the schedule of antenatal visits in settings where the number of visits is already low (eg, <5)	To ensure that pregnant women attend at least four antenatal visits where they receive comprehensive care related to their gestation and circumstances; (3:3:3, Aim) midwifes must inform women, families and communities about focused antenatal care (3:3:3); Motivating pregnant women for antenatal care (ANC); Encourage pregnant women to make initial ANC visits; provide comprehensive and culturally acceptable antenatal care in order to increase usage of services (3:3:2)
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Lay health workers in primary and community health care for maternal and child health and the management of infectious diseases	*Collaborate with health workers to improve service to women (1;2); Collects, analyses and interprets data to make decisions and accurate diagnosis in collaboration with the client (2:2:2); Manage and maximises utilisation of resourses to improve quality of maternal and neonatal health care services (4:3); Initiates and facilitates communication and collaboration with (patients/clients, family) community, and colleagues in the provision of midwifery care (4:4)* *(Competence is not specified to the practice but linked to the individual midwife)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable

Education, information, health promotion, and public health

Practice	Guideline statements linked to practice
Insecticide-treated nets for prevention of malaria in pregnancy	*Screening for malaria; Use of disease prevention strategies and elements of health promotion (1:1,1:2);* *Presumptive treatment of malaria in pregnancy (2:2:1)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable

Specific advice to increase dietary energy and protein intakes or energy and protein supplementation in pregnancy	*Assess nutrition during pregnancy; Counsel women on nutrition; Institute appropriate interventions for low or inadequate nutrition (1:1, 1:2);* *Identifies strategies of care related to pre-conception and pregnancy including nutritional, physical, psycho-social and emotional needs (2 2:2)* *(Not specified to increase protein energy intake or supplementation)* **Interventions: defined as promote health, prevent disease*			
	Fulfilled	Partly fulfilled	Not fulfilled	Not applicable
Interventions to promote smoking cessation in pregnancy	*Counsel women about health habits, stopping smoking (1:2)* Management of women with risk factors in pregnancy (2:2:1)			
	Fulfilled	Partly fulfilled	Not fulfilled	Not applicable
Health education and peer support to promote breastfeeding initiation	*How to explain, support, promote and initiate breastfeeding; Pre-conceptual and Prenatal Information (1:1, 1:2)* *Education and Communication (IEC) and counselling; Obtains specific data on lactation and bonding (2:2:1, 2:4:2)* *Identifies the need for- and facilitates the provision of teaching and counseling to individuals and groups to promote reproductive health and prevent disease (4:7)*			
	Fulfilled	Partly fulfilled	Not fulfilled	Not applicable
Supplementation with folic acid for women ≤12 weeks pregnant or pre-pregnant, for prevention of neural tube defect	*Assess nutrition; Education needs regarding nutrition; Counsel women on nutrition and institute appropriate interventions for low or inadequate nutrition (1:1, 1:2)* *Identifies strategies of care related to pre-conception and pregnancy including nutritional needs (2:2:2)* *Process and output indicator: proportion of women receiving iron and folate supplements during ANC and postnatal periods (3:3:5)*			
	Fulfilled	Partly fulfilled	Not fulfilled	Not applicable

Routine zinc supplementation for improving pregnancy and infant outcomes	Assess nutrition; Education needs regarding nutrition; Counsel women on nutrition and institute appropriate interventions for low or inadequate nutrition (1:1, 1:2) Identifies strategies of care related to pre-conception and pregnancy including nutritional needs *(routine zink supplementation is not specified)* (2:2:2)			
	Fulfilled	Partly fulfilled	Not fulfilled	Not applicable
Daily universal oral supplementation with iron or iron and folic acid during pregnancy for improvement of maternal health and pregnancy outcome	Assess nutrition; Education needs regarding nutrition; Counsel women on nutrition and institute appropriate interventions for low or inadequate nutrition (1:1, 1:2) Identifies strategies of care related to pre-conception and pregnancy including nutritional needs (2:2:2) Process and output indicator: Proportion of women receiving iron and folate supplements during ANC and postnatal periods (3:3:5)			
	Fulfilled	Partly fulfilled	Not fulfilled	Not applicable
Intermittent oral supplementation with iron or iron and folic acid or iron and vitamins and minerals during pregnancy for improvement of maternal health and pregnancy outcome	Assess nutrition; Education needs regarding nutrition; Counsel women on *nutrition and institute appropriate interventions for low or inadequate nutrition (1:1, 1:2)* *Micronutrient supplementation; Identifies strategies of care related to pre-conception and pregnancy including nutritional needs (2:2:1, 2:2:2)* *Process and output indicator: proportion of women receiving iron and folate supplements during ANC and postnatal periods (3:3:5)* *(iron/folic acid/vitamin/mineral supplementation is not specified)*			
	Fulfilled	Partly fulfilled	Not fulfilled	Not applicable
Calcium supplementation during pregnancy for preventing hypertensive disorders and related problem	Assess nutrition; Education needs regarding nutrition; Counsel women on nutrition and institute appropriate interventions for low or inadequate nutrition (1:1, 1:2) *Micronutrient supplementation;* Identifies strategies of care related to pre-conception and pregnancy including nutritional needs (2:2:1; 2:2:2) *(Calcium supplementation for preventing hypertensive disorders is not specified)*			
	Fulfilled	Partly fulfilled	Not fulfilled	Not applicable

Mutiple micronutrient supplementation during pregnancy	*Assess nutrition; Education needs regarding nutrition; Counsel women on nutrition and institute appropriate interventions for low or inadequate nutrition (1:1, 1:2)* *Micronutrient supplementation; Identifies strategies of care related to pre-conception and pregnancy including nutritional needs (2:2:1, 2:2:2)* *Process and output indicator: proportion of women receiving iron and folate supplements during ANC and postnatal periods (3:3:5)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Education for contraceptive use by women after childbirth	*Balanced counsel strategy on family planning; Counsel woman/family on sexuality and provide appropriate family planning method post-delivery (1:1, 1:2)* *Postpartum IEC and counselling including family planning; Prescribes appropriate treatment and contraceptives within the legal framework and scope of midwifery practice; Pre-conceptual and prenatal Information, Education and Communication (IEC) and counselling; Utilizes communication, interpersonal and client-provider interaction skills in conducting family planning, midwifery and gynaecological assessment (2:2:2, 2:1:2)* *Identifies the need for and facilitates the provision of teaching and counseling to individuals and groups to promote reproductive health and prevent disease (4:7)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable

Assessment, screening and care planning

Practice	Guideline statements linked to practice
Screening for and treatment of antenatal lower genital tract infection for prevention of preterm delivery	*Identify and refer variations from normal during the course of the pregnancy i.e. sexually transmitted infections (STIs), vaginitis, urinary tract infections; Treat and/or collaboratively manage above variations from normal based upon local standards and available resources; Normal findings [results] of basic screening laboratory studies such as; e.g. iron levels, urine test for sugar, protein, acetone, bacteria; Physical examination content and investigative laboratory studies that evaluate potential for a healthy pregnancy (1:1; 1:2)* *Management of women with risk factors in pregnancy; Management of women with uncomplicated and complicated pregnancy and emergency conditions in Pregnancy (2:2:1)* *Aim: To reduce maternal and perinatal morbidity and mortality as well as infertility caused by STIs Midwifes are trained and updated in STI prevention and management; Ensure that both the women and her partner are treated aggressively and completely (3:3:7)* *Provides treatment or medication prescribed by self or other registered health care provider for patients/clients (4:1)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable

Promotion of normal processes and prevention of complications

Practice	Guideline statements linked to practice
Antiretroviral drugs for reducing the risk of mother-to-child transmission of HIV infection	*Provision of HIV prevention; Care and treatment according to national guidelines; Identification and management of HIV exposed neonate; HIV and AIDS prevention, care and treatment during labour, PMTCT (1:1, 1:2)* Prevention of Maternal-to-child transmission; HIV counselling and testing; Management of HIV/AIDS in pregnancy (2:2:2) Aim: To prevent the transmission of HIV from mother to child during pregnancy, labour and postnatal period. Prerequisite: Antiretroviral medications (ARVs) and other resources are available (3:2:8)
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Drugs for prevention of malaria in pregnant women	*Disease prevention; Screening for malaria (1:2) (Prevention of malaria is not specified)* Presumptive treatment of malaria in pregnancy (2:2:1)
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Antiretroviral therapy for treatment of HIV infection in antiretroviral therapy-eligible pregnant women	*HIV testing; HIV treatment under pregnancy (1:1, 1:2)* *(Antiretroviral therapy is not mentioned; but can be interpreted in treatment for HIV)* *Prevention of Maternal-to-child transmission; HIV counselling and testing; Management of HIV/AIDS in pregnancy (2:2:1, 2:2:2)* *Aim: To prevent the transmission of HIV from mother to child during pregnancy, labour and postnatal period* *Prerequisites: Antiretroviral medications (ARVs) and other resources are available (3:3:8)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Antenatal digital perineal massage to prevent perineal trauma	*No requirements found linked to the prevention of perineal trauma before labour.* *(Competences concerning prevention and management of perineal tears in labour is not considered linked to the practice)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable

Breast stimulation for cervical ripening or labour induction	*No requirements linked to labour induction or augmentation of uterine contractility with non-pharmacological agents.*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Continuous labour support	*Emotional and psychological support during labour; Facilitate the presence of support person during labour (the continuous support is not specified) (1:1, 1:2)* *Identifies strategies to meet the client's need for physical, psychosocial and emotional comfort; Demonstrates warm welcoming attitude, comfort and psychological support to a woman and significant others (2:3:2)* *Provides a safe and therapeutic environment for clients/patients to promote their physical and mental well-being (4:1)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Upright positions in the first stage of labour	*Provide choice for alternative birthing positions (1:2)* *(Upright positions and activity in the first stage of labour is not specified in guidelines)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Relaxation techniques for pain relief in labour	*Antenatal techniques for increasing relaxation and pain relief measures available for labour; Comfort measures during labour: non- pharmacological methods of pain relief (1:1, 1:2)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Inhaled analgesia for pain relief in labour	*Prescribe and/or administer pharmacological pain relief (Inhaled analgesia not specified in guidelines) (1:2)* *Identifies strategies to meet the client's need for physical comfort (2:3:2)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Immersion in water in first and second stage labour	*Immersion in water during labour is not specified in guidelines*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Perineal techniques in second stage labour	*Prevention and management of perineal tears (1:2)* *Conducts safe delivery to prevent maternal and foetal complication (2:3:2)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable

Restrictive episiotomy	*Indications for an episiotomy;* Perform episiotomy; *Prevention of perineal tears (1:1, 1:2)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Unclamping previously clamped and divided umbilical cord and allowing blood from placenta to drain freely	*Conducting an active management of the Third stage of labour (Unclamping cord after clamping and divided is not specified in the definition of Active management of third stage of labour) (1:2)* *Pre-requisites: Midwifes are regularly updated in the correct techniques for active management of 3rd stage of labour (3:4:3)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Active management of third stage labour	*Conduct active management of the 3rd stage of labour (Administration of oxytocic, early cordclamping and cutting, controlled cord traction); Support physiological management of 3rd stage of labour* *Pre-requisites: Midwifes are regularly updated in the correct techniques for active management of 3rd stage of labour (3:4:3)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Prophylactic ergometrine or oxytocin in third stage labour	*Conduct active management of the 3rd stage of labour including administration of oxytocic; Administer oxytocin for treatment of PPH (the prophylactic ergometrine is not specified to be used prophylactic) (1:1, 1:2)* *Aim: To ensure that the placenta and membranes are delivered completely with minimum blood loss* *Process: Midwifes must use oxytocin as the drug of choice* *Rationale: "The purpose of an active management of the third stage of labour is to prevent PPH through the use of an oxytocic medication" (3:4:3)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Carbetocin to prevent post partum haemorrhage	Conduct *active management of the 3rd stage of labour including administration of oxytocic; Manage post-partum hemorrhage.* *(Carbetocin is not specified. Prevention of PPH is not specified) (1:1, 1:2)* *Conduct active management of the 3rd stage of labour including administration of oxytocic; Administer oxytocin for treatment of PPH (the prophylactic ergometrine is not specified to be used prophylactic) (1:1, 1:2)* *Aim: To ensure that the placenta and membranes are delivered completely with minimum blood loss* *Rationale: "The purpose of an active management of the third stage of labour is to prevent PPH through the use of an oxytocic medication" (3:4:3)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable

Prophylactic oxytocin to prevent post partum haemorrhage	Conduct *active management of the 3rd stage of labour including administration of oxytocic; Manage post-partum hemorrhage.* *(Prevention of PPH is not specified) (1:1, 1:2)* *Conduct active management of the 3rd stage of labour including administration of oxytocic; Administer oxytocin for treatment of PPH (the prophylactic ergometrine is not specified to be used prophylactic) (1:1, 1:2)* *Aim: To ensure that the placenta and membranes are delivered completely with minimum blood loss* *Process: Midwifes must use oxytocin as the drug of choice* *Rationale: "The purpose of an active management of the third stage of labour is to prevent PPH through the use of an oxytocic medication" (3:4:3)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Prostaglandin (misoprostol) to prevent post partum haemorrhage	Conduct *active management of the 3rd stage of labour including administration of oxytocic; Manage post-partum hemorrhage.* *(Prostaglandin is not specified. Prevention of PPH is not specified) (1:1, 1:2)* *Conduct active management of the 3rd stage of labour including administration of oxytocic; Administer oxytocin for treatment of PPH (the prophylactic ergometrine is not specified to be used prophylactic) (1:1, 1:2)* *Aim: To ensure that the placenta and membranes are delivered completely with minimum blood loss* *Rationale: "The purpose of an active management of the third stage of labour is to prevent PPH through the use of an oxytocic medication" (3:4:3)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Skin-to-skin mother-baby contact within 24 h of birth	*Promotion of skin-to-skin contact (when appropriate); Kangaroo care;* *(Within the 24h of birth is not specified) (1;1, 1;2)* *Obtains specific data on lactation and bonding; Identifies strategies to meet the mother and baby's needs for comfort, maternal-newborn bonding 2:4:2*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Paracetamol (one dose) for early post-partum pain	*Prescribe and administer pain relief when needed (Paracetamol or management of early post-partum pain is not specified) (1:2)* *Obtains specific data on afterbirth pains; Identifies strategies to meet the mother need for comfort, pain relief 2:4:2*
	Fulfilled Partly fulfilled Not fulfilled Not applicable

Any type of approved analgesia for pains after vaginal birth	*Prescribe and administer pain relief when needed; Administer analgesic [lifesaving skills]; inject local anesthesia;* *(management of pain after vaginal birth pain is not specified) (1:1, 1:2)* *Obtains specific data on afterbirth pains; Identifies strategies to meet the mother need for comfort, pain relief 2:4:2*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Analgesic rectal suppositories for the relief of pain from perineal suturing	*Prescribe and administer pain relief when needed; Administer analgesic [lifesaving skills]; inject local anesthesia* *(*Analgesic rectal suppositories for the relief of pain from perineal suturing is n*ot specified) (1:1, 1:2)* *Obtains specific data on afterbirth pains; Identifies strategies to meet the mother need for comfort, pain relief 2:4:2*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Support for breastfeeding mothers	*Explain and support breastfeeding; promote and initiate breastfeeding (1:1, 1:2)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Tetanus toxoid for pregnant women to prevent neonatal tetanus	*National immunization programs; Health promotion and disease prevention strategies; Elements of prevention of disease in newborn and neonate (tetanus toxoid for pregnant women is not specified) (1:1, 1:2)* *Administers initial immunizations according to national guidelines (2:5:2)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Interventions to relieve constipation in pregnancy	*Safe non-pharmacological interventions for the relief of common discomforts of pregnancy; Educate and demonstrate measures to decrease common discomforts of pregnancy (1:2)* *Competence area: Management of women with uncomplicated and complicated pregnancy and emergency conditions in Pregnancy (2:1)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable

Topical treatments for vaginal candidiasis in pregnancy	S*afe non-pharmacological interventions for the relief of common discomforts of pregnancy; Educate and demonstrate measures to decrease common discomforts of pregnancy (1:2)* *Competence area: Management of women with uncomplicated and complicated pregnancy and emergency conditions in Pregnancy (2:1)* *(vaginal candidiasis can be considered a common discomfort of pregnancy)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable

First-line management of complication

Practice	Guideline statements linked to practice
Antibiotics for gonorrhoea in pregnancy	*Identify STIs and treat based on local standards, Provide appropriate antibiotic treatment for infection; Prescribe and administer certain drugs: magnesium sulphate, diazepam, antibiotics and analgesic. [Life saving skills] (1:1,1:2)* *Management of women with uncomplicated and complicated pregnancy and emergency conditions in Pregnancy; Management of women with risk factors in pregnancy (2:1, 2:2)* *Provides treatment for or medication prescribed by self or other registered health care provider for patients/clients (4:1)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Interventions for treating genital Chlamydia trachomatis infection in pregnancy	*Identify STIs and treat based on local standards, Provide appropriate antibiotic treatment for infection; Prescribe and administer certain drugs: magnesium sulphate, diazepam, antibiotics and analgesic. [Life saving skills] (1:1,1:2)* *Management of women with uncomplicated and complicated pregnancy and emergency conditions in Pregnancy; Management of women with risk factors in pregnancy (2:1, 2:2)* *Provides treatment for or medication prescribed by self or other registered health care provider for patients/clients (4:1)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Interventions for trichomoniasis in pregnancy	*Identify STIs and treat based on local standards, Provide appropriate antibiotic treatment for infection; Prescribe and administer antibiotics [Life saving skills] (1:1,1:2)*

	Management of women with uncomplicated and complicated pregnancy and emergency conditions in Pregnancy; Management of women with risk factors in pregnancy (2:1, 2:2) *Provides treatment for or medication prescribed by self or other registered health care provider for patients/clients (4:1)* Fulfilled Partly fulfilled Not fulfilled Not applicable
Antibiotics for treating bacterial vaginosis in pregnancy	*Identify vaginitis and treat based on local standards, Provide appropriate antibiotic treatment for infection; Prescribe and administer antibiotics [Life saving skills] (1:1,1:2)* *Management of women with uncomplicated and complicated pregnancy and emergency conditions in Pregnancy; Management of women with risk factors in pregnancy (2:1, 2:2)* *Provides treatment for or medication prescribed by self or other registered health care provider for patients/clients (4:1)* Fulfilled Partly fulfilled Not fulfilled Not applicable
Antibiotics for asymptomatic bacteriuria in pregnancy	*Identify abnormal laboratory results; urinary tract infection, vaginitis, and treat based on local standards (1:2) Provide appropriate antibiotic treatment for infection; Prescribe and administer antibiotics [Life saving skills] (1:1,1:2)* *Management of women with uncomplicated and complicated pregnancy and emergency conditions in Pregnancy; Management of women with risk factors in pregnancy (2:1, 2:2)* *Provides treatment for or medication prescribed by self or other registered health care provider for patients/clients (4:1)* Fulfilled Partly fulfilled Not fulfilled Not applicable
Treatments for symptomatic urinary tract infections during pregnancy	*Identify abnormal laboratory results; urinary tract infection, vaginitis, and treat based on local standards (1:2) Provide appropriate antibiotic treatment for infection; Prescribe and administer antibiotics [Life saving skills] (1:1,1:2)* *Management of women with uncomplicated and complicated pregnancy and emergency conditions in Pregnancy; Management of women with risk factors in pregnancy (2:1, 2:2)* *Provides treatment for or medication prescribed by self or other registered health care provider for patients/clients (4:1)* Fulfilled Partly fulfilled Not fulfilled Not applicable

Anti-D administration in pregnancy for preventing rhesus alloimmunisation	*Disease prevention strategies; national immunization programs (1:2)* *Administers initial immunizations according to national guidelines (2:2)*			
	Fulfilled	Partly fulfilled	Not fulfilled	Not applicable
Interventions for preventing and treating pelvic and back pain in pregnancy	*Non-pharmacological interventions for the relief of common discomforts of pregnancy; Educate and demonstrate measures to decrease common discomforts of pregnancy (1:1, 1:2)* *Management of women with uncomplicated and complicated pregnancy and emergency conditions in Pregnancy; Management of women with risk factors in pregnancy (2:2:1,2:2)*			
	Fulfilled	Partly fulfilled	Not fulfilled	Not applicable
Oral maternal hydration for increasing amniotic fluid volume in oligohydramnios	*Identify, refer and manage variations from normal during the course of the pregnancy (Oligohydramnios is not specified but can be considered a"variation from normal") (1:2)* *Management of women with uncomplicated and complicated pregnancy and emergency conditions in Pregnancy; Management of women with risk factors in pregnancy (2:1, 2:2)* *Monitor clients disease conditions and initiate any action for problem identified (4:1)*			
	Fulfilled	Partly fulfilled	Not fulfilled	Not applicable
External cephalic version for breech presentation at term	*Institute appropriate interventions for abnormal lie at term (1:2)* *Management of women with uncomplicated and complicated pregnancy and emergency conditions in Pregnancy; Management of women with risk factors in pregnancy (2:1:2:2)* *Manages clients/patients with obstetric conditions (breech, multiple gestation) during antepartum, intrapartum and post-partum (4:1)*			
	Fulfilled	Partly fulfilled	Not fulfilled	Not applicable
Antiplatelet agents (low-dose aspirin) for preventing preeclampsia and its complications	*Identify signs of preeclampsia and institute appropriate interventions (Antiplatelet agents are not specified); Use of disease prevention strategies and elements of health promotion (1:1, 1:2)* *Management of women with uncomplicated and complicated pregnancy and emergency conditions in Pregnancy; Management of women with risk factors in pregnancy (2:1, 2:2)*			

	Fulfilled Partly fulfilled Not fulfilled Not applicable
Planned early birth vs expectant management for pre-labour rupture of membranes at term	*No guideline statements are considered linked to practice.*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Pharmacological and mechanical interventions to induce labour in outpatient settings	*Oxytocin for induction of labour; (Mechanical interventions for induction is not specified) (1:1)* *The role of the midwife involves …addressing clients' needs in a variety of settings (2:1)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Massage, reflexology, and other manual methods for pain management in labour	*Non-pharmacological methods of pain relief* *(Massage reflexology or manual methods is not specified) (1:1)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Acupuncture or acupressure for pain management in labour	*Non-pharmacological methods of pain relief (Acupuncture or acupressure is not specified) (1:1)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Rapid vs stepwise negative pressure application for vacuum extraction assisted vaginal delivery	*Perform vacuum extraction (1:2)* *Specialist Midwife: provides advanced life- saving midwifery procedures approved by the national regulatory body for example, instrument deliveries, vacuum extraction; (Rapid vs stepwise negative pressure application is not specified) (2)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Continuous vs interrupted sutures for repair of episiotomy or second degree tears	*Repair and management of perineal tears; Repair an episiotomy (1:2)* *Examines the birth canal and repairs tears, laceration and/ or an episiotomy (Continuous vs interrupted sutures is not specified) (2:3:2)*

	Fulfilled Partly fulfilled Not fulfilled Not applicable
Anti-D administration after childbirth for preventing rhesus allo-immunisation	*Disease prevention strategies; National immunization programs (1:1, 1:2)* *Conducts growth monitoring, immunization and promotion of nutrition for the neonate; Administers initial immunizations according to national guidelines (2:5:2)* *(Anti-D administration might be within national immunization program)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Treatment for women with post-partum iron deficiency anaemia	*Maternal nutrition post partum; Manage PPH (1:1;1:2)* *Aim: To detect and manage anaemia occurring in pregnancy and puerperium in a timely manner* *Prerequisites: Protocols that supports midwifes to manage amaemia whenever it occurs; Midwifes are trained and updated the prevention and management of anaemia; Necessary equipment, drugs (including iron and folic acid) and supplies for managing aneamia are available.* *Process and output indicators: proportion of women receiving iron and folate supplements during ANC and postnatal periods (3:3:5)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Antibiotic regimens for endometritis after delivery	*Appropriate antibiotics for infection post-partum (1:2)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Kangaroo mother care to reduce morbidity and mortality in low birthweight infants	*Kangaroo mother care, (to reduce morbidity and mortality in low birthweight infants not specified) (1:2)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable
Preventive, non-pharmaceutical psychosocial or psychological interventions for the prevention of post-partum depression	*Depression post-partum; Counseling and care during postnatal period (to prevent post-partum depression is not specified) (1:1, 1:2)* *Postpartum IEC and counselling and care; Performs physical examination and carries out laboratory investigations to monitor maternal recovery and well-being during the postpartum period; Prioritizes strategies of care and determines strategies and needs for consultation, collaboration and referral (2:4:2, 2:4:1)*
	Fulfilled Partly fulfilled Not fulfilled Not applicable

Fibreoptic phototherapy for neonatal jaundice	*Selected newborn complications, e.g. jaundice (1:1)* *Management of hyperbilirubinemia in the newborns* *Aim: to recognize the occurrence of hyperbilirubinemia in the newborn and take appropriate action. Midwifes ensure availability of necessary equipment, drugs and supplies for managing hyperbilirubinemia* *Process: Ensure availability of essential recourses for managing hyperbilirubinemia (Fiberoptic phototherapy or other therapy for jaundice is not specified) (3:6:4)*			
	Fulfilled	Partly fulfilled	Not fulfilled	Not applicable
Emergency interventions: Magnesium sulphate for women with pre-eclampsia	*Prescribe and administer certain drugs: magnesium sulphate; Administer anticonvulsant drugs to control the high blood pressure/convulsions in severe pre-eclamptic/eclamptic women(1:2)* *Management of women with pre-eclampsia and eclampsia* *Aim: To recognize and manage preeclampsia and eclampsia appropriately and in a timely manner; Follow national and/or institutional protocols and guidelines in managing preeclampsia including use of magnesium sulphate (3:4:3)*			
	Fulfilled	Partly fulfilled	Not fulfilled	Not applicable
Emergency interventions: Magnesium sulphate for eclampsia	*Prescribe and administer certain drugs: magnesium sulphate; Administer anticonvulsant drugs to control the high blood pressure/convulsions in severe pre-eclamptic/eclamptic women(1:2)* *Management of women with pre-eclampsia and eclampsia* *Aim: To recognize and manage preeclampsia and eclampsia appropriately and in a timely manner* *Process/midwife must: Follow national and/or institutional protocols and guidelines in manageing preeclampsia including use of magnesium sulphate (3:4:3)*			
	Fulfilled	Partly fulfilled	Not fulfilled	Not applicable