Strengthening Midwifery Toolkit

Module 5

Developing a midwifery curriculum for safe motherhood: Guidelines for midwifery education programmes

World Health Organization

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1. Introduction

This module offers guidance for those seeking to improve reproductive health services to all, through strengthening the education required to develop the knowledge, skills and abilities of all those who provide these health services. Particularly important are those services designed for making pregnancy, childbirth and postnatal care safer. The content of this module offers guidance for development of a midwifery curriculum that is based on a philosophy and ethical framework of professional midwifery and the overarching principles of sound educational practice. It addresses considerations for developing a midwifery curriculum that is linked to the expected outcomes of the education process. It offers general guidance for effective academic and clinical teaching. It presents basic principles that underpin fair and valid evaluation of students in the theory and clinical phases of their education. The essential elements of a community-based midwifery curriculum are offered as an Annex to *The Midwifery Toolkit* as a resource for those who may be developing a midwifery education programme.

2. The role of midwives in improving reproductive health services

Reproductive health is a concept adopted by the United Nations International Conference on Population and Development held in Cairo in 1994. It is a holistic concept that embraces women's health from birth to the menopause. Reproductive health is a crucial part of general health. It affects and is affected by the broader context of people's lives, including economic circumstances, education, employment, living conditions, and family environment. Social and gender relationships, and traditional and legal structures, may also affect women's reproductive health (Cook & Dickens, 2002; Germain, 2004).

Attainment of health, including reproductive health, is seen as paramount by all concerned with public health and is crucial to achieving the ambitious goal set in the Millennium Declaration and goals and targets set out therein. In order to meet the specific goals of improving maternal health "*reduction of the maternal mortality ratio by three quarters between 1990 and 2015"* and "*reduction by two-thirds of under-five mortality by 2015"* it is vital to have a sufficient supply of suitably educated and trained health workers. Midwives are a key part of this workforce, as it is they who often provide the first level of care for women and families, and work with communities to help promote health. They are able to recognize and take first line action when complications arise. It is important that midwifery curricula are revised to embrace the concept of reproductive health in order to prepare midwives for their role and responsibilities in providing midwifery care within the broader concept of reproductive health. Without appreciation of the broader issues around reproduction and reproductive health, midwives will be hampered in their ability to offer the full range of services including those that in the past were seen as beyond the confines of maternal and child health and family planning. Annexes 1 and 2 have been prepared specifically to assist review of current midwifery curricula in countries and to put steps in place to revise a curriculum, or develop a new one.

To meet the needs of families that are related to reproductive health, appropriate services must be accessible and acceptable. Education on family health issues is required to help in the prevention of future problems in the reproductive health

sphere. These services and education needs include information that is easily understood, skilled counselling, the early detection and management of health problems, appropriate care and rehabilitation.

Historical evidence has shown that a health system concerned with reproductive issues, based on midwifery care, helps in reducing maternal and child mortality and morbidity in a highly cost-effective way (Loudon, 1992). It is therefore suggested that well trained midwives could serve as key providers of reproductive health care in order to improve the general health status of women, men and children, as this would be beneficial for the whole of society. Finally, it now well acknowledged that the critical intervention in reducing maternal morbidity and mortality and for ensuring a healthy start in life for the newborn is to have a competent health provider with midwifery skills at all births, i.e. *a skilled attendant* [1] (Koblinski et al. 2006; WHO, ICM, FIGO, 2004). The professional provider most able to provide all the skills required for providing effective care during normal pregnancy, childbirth and the postnatal period (including newborn care) is the midwife, although it is acknowledged other health practitioners may also possess some of the core set of midwifery skills that are essential for midwives. However the skilled attendant, the midwife, needs to work within an "enabling environment," that is, to be supported by an effective health system and linked to a referral system for the management of obstetric and neonatal complications. It therefore follows that developing a competency-based curriculum for midwives that embraces the wider concepts of reproductive health is only part of what is required to building an appropriate professional cadre of midwives in order to achieve reproductive health for all.

It is acknowledged that in some countries a different name is ascribed to those who carry out the function and role of the midwife. Furthermore, in some countries the midwife (or country equivalent) may also have to carry out additional tasks to those included in the scope of practice defined by the ICM in the core document, *Essential Competencies for Basic Midwifery Practice.* For simplicity the term "*midwife"* will be used throughout this document to refer to any person who functions in this occupational or professional role, whatever their title. However, appropriate caution is raised that the global variations in academic preparation (education and training) for the practice of the profession, and the lack of consensus in definition and scope of practice of the "midwife" limits what can be known about the role of midwives globally, and their contribution to the skilled attendant workforce.

3. A philosophy of midwifery education

A midwifery education programme should be based on an acknowledgement of the uniqueness of the individual and must promote equal rights regardless of sex, race, religion, age and nationality. It should be committed to a life cycle perspective of reproductive health with a special focus on women's health and the needs of newborns. This means that it does not restrict the training to care during pregnancy, birth and the postpartum and neonatal periods, but rather embraces the whole of a woman's life, and specifically address the circumstances of the country situation in which the family resides (e.g., specific health issues and concerns and epidemiological challenges). It should be a woman- and family-centred programme, which aims

[1] A skilled attendant is 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. (Making pregnancy safer: the critical role of skilled attendants. A joint statement by WHO, ICM, FIGO, 2004, World Health Organization, Geneva.)

to promote safe motherhood and increase the students' awareness of family health issues and sexuality within a framework of gender sensitivity on an individual and community level (Thompson 2004; Carolan & Hodnett 2007; Doherty, 2010).

The midwife must be prepared to deliver health services in a full variety of settings. A community-based perspective is offered in this guidance. The student midwife who is receiving clinical experience in community-based settings will be in contact with the people for whom she [2] will provide services and also those with whom she needs to collaborate in her practice, for example, local leaders, women's groups, schools, officials responsible for the provision of housing and so forth. Without a community basis to the training the future midwife risks being unable to grasp the realities of her clients' lives as they impact on the provision of reproductive health care. Nevertheless, clinical experience will need to be acquired in the full range of health care service settings, ranging from hospitals to community-based primary health facilities, to ensure that the students are exposed to a wide range of experience and have the opportunity to learn effective life-saving skills.

Women require care in pregnancy and childbirth and throughout their lifetime, which is not only safe, but which also meets their individual psychological, emotional, physical and social, including spiritual, needs. The education of the midwife therefore needs to focus on meeting the holistic needs of the woman in a sensitive and competent manner, acting as her advocate and working in partnership with her and her family to promote a safe and satisfying experience of childbirth and motherhood. The programme must strive to prepare individuals who will be thinking, caring midwives with a sound knowledge base and competent clinical skills, by using student-centred learning methods that will develop critical thinking and analytical and problem-solving skills. Students will be encouraged to reflect on their practice and take responsibility for their own learning, supported by educational and clinical staff. Students should be encouraged and motivated to develop into life-long learners, capable of recognising their own needs for continuing professional education and of taking every opportunity to meet them. Finally, the curriculum must also have a sound public health basis.

4. The ethics of professional practice

Fundamental to the professional practice of midwives is the professional ethic that underpins all that midwives do and how they function within society. The relationship the midwife has to women is critical to this ethical view. General consensus of the global family of midwives views this relationship as one of partnership, grounded in a belief in the normal processes of pregnancy and childbirth. Midwives believe that pregnancy and childbirth is a normal life cycle event, but one which can in some (a minority of) cases, become complicated and result in a life threatening event.

Therefore, midwives see their professional duty and thus their primary function as acting at all times to ensure the well being of the childbearing woman and her baby. To do this, midwives believe women should be empowered to assume responsibility for their health and that of their families. A core value is that midwives have confidence in and respect for and trust in women and their capabilities in childbirth (ICM, 2003).

[2] The use of the female gender reflects that in many countries midwifery is seen as exclusively open to women. However in a number of countries men now enter into this profession. The international definition has been updated to reflect a more gender-neutral language; however, this guidance uses the female gender for ease of use.

Historically midwives have frequently been involved "with women" as agents of social change. Midwives have acted in partnership with women in many countries jointly to challenge a hierarchical and often paternalistic approach to health care. The primary aim of this social action has been to ensure a more equitable balance of power over women's bodies in order to maintain the basic principle of birth as a "natural life-event."

In keeping with the characteristics of all social movements, the distinguishing feature of this collective action has been to represent the voices of those who have traditionally or historically been less well represented or underrepresented. In this particular case, the voices are those of women who do not wish to receive care for this natural life event designed with a medical and often male dominated medical approach. The basic premise that underpins the professional ethic is that midwives and woman together have shared beliefs and values and that "empowerment of women" for and during pregnancy, birth and the transition to the new family dynamic is at the heart of appropriate midwifery care. This empowerment is facilitated by and through the close connections and relationship between midwives and women. Such beliefs must be at the heart of any programme that aims to prepare students to enter the midwifery profession, and be reflected in all of the methods and strategies that define the programme of study.

Midwives should be able to take on a more enabled, 'for women' role. This then has implications for regulation, which should be 'self regulated' to a point - but should also have input to that process from women themselves, and from fellow professionals (whoever is appropriate in each culture – general physicians, nurses, obstetricians). Midwives should be very involved in the process, and should possibly control it, but if they are the only ones involved, the danger is that a 'for midwife' culture develops, protecting midwives and perpetuating problems…. The process needs to cut through that, and protect women from the possibility of that happening. The formal process can also be backed up by a less formal process (i.e. peer review), to ensure lots of midwife-to-midwife contact and learning. This 'with-women/for-women' stance can then form a foundation for what 'professionalism' looks like for midwifery. We cannot be 'not professional'; as we then take on too much of the identity and shackles of the women we are meant to be working with. Neither can we be arrogantly detached from the individual, in the way that we have all seen obstetrics (and indeed midwifery) at its worst. We need to be able to form a` contract' with women, to deliver that contract (therefore to find ways around blocks and barriers in the society), and follow up on it, and at all the time respecting women's individuality and the culture in which she lives. This all implies enough education to do this well, and enough power to influence the system. This is what I would describe as 'professional'.

Personal quote by Professor Mary Renfrew, Head of Maternal and Infant Health Research Unit, University of Leeds & Chair of WHO Making Pregnancy Safer Strategic Review Committee 2003

5. Guidelines for midwifery education programmes

5.1 Programme aims

Midwives are essential to promote reproductive health in general and in particular to assist in the reduction of the very high global maternal morbidity and mortality rate, as well as help reduce the unnecessary high toll of newborn deaths. The midwife is recognised as a principal protagonist in achieving these objectives and therefore priority must be given to the ensuring the quality of education and training of midwives as well as to making sure that sufficient midwives are trained to meet the needs of the population.

The midwifery curriculum should prepare students to:

1. Become safe, competent practitioners who are able to practice autonomously to promote reproductive health.
2. Be caring and sensitive and able to work alongside women and their families in the community and in health facilities adopting a partnership model to educate, advise, facilitate choice and respond to individual needs.
3. Develop the ability to work well within a multi-disciplinary team to promote reproductive health.
4. Build up good relationships and liaise with community leaders and other relevant personnel in the community to increase the uptake of women's reproductive health care, promote health education strategies and to organise a reliable plan for birth care in the event there is need of transport or referral to other health practitioners or higher levels of facility-based services.
5. Make a positive contribution to the reduction of maternal and infant mortality and morbidity by recognising life-threatening conditions early and taking timely and skilled action.
6. Take responsibility for their own learning, by promoting access to appropriate clinical and theoretical support and encouraging the skills of reflection, critical analysis and evaluation.
7. Reflect on their practice to promote learning from their experience that will enhance the future care of women and their families.
8. Recognise that learning is a life-long process and take every opportunity to keep up-to-date with new knowledge and research findings and to enhance their practice with all available forms of continuing professional education.
9. Develop into midwives who value their occupation/profession and contribute to the development of midwifery by advocating change, where necessary, and by conducting research aimed at improving the care given to women and their families.
10. Develop into effective managers of a case-load and of health facilities.

A glossary of terms related to midwifery education

Accredited/accreditation: The award of credits for educational achievement. The accumulation of the required number of credits at appropriate levels of academic achievement usually leads to an award.

Accredited/accreditation: A process and procedure of peer review by which an education programme is acknowledged as meeting quality standards.

Advanced midwifery studies: The study of midwifery theory and practice at a level which is higher than that required for basic midwifery training.

Assessment: Planned methods of ascertaining the standards of knowledge and skills attained by students

Curriculum: A planned course of studies; the designated programme of theoretical and practical experiences to be acquired over a period of time, leading to intended learning outcomes.

Diploma: A certificate awarded in acknowledgement of completion of a programme of studies.

Degree: A status conferred by a college or university in acknowledgement of completion of a programme of formal academic studies.

Direct entry midwifery programme: A programme of midwifery studies that admits students who have not previously completed a programme of basic nursing education.

Examination: A formal method of assessment in which the students undertake tests under controlled conditions and according to specific rules.

Intended learning outcomes: Specific statements identifying what the students are expected to achieve.

Module: Individual courses consisting of a number of hours of learning and a focused unit of content that a student is expected to undertake. Many programmes are now modularised, that is constructed of a number of modules to be learned over a specified timeframe.

Placements: Clinical areas and midwifery schools selected by the institution conducting the midwife teacher programme where students obtain clinical experience.

Preceptor: A health care provider (midwife or other health professional) who offers direct supervision during clinical student placements, under the general supervision of the midwife teacher.

Problem-based learning: A method of teaching using problems as a basis for student activity.

Student-centred teaching and learning methods: Teaching and learning methods which actively involve the students in their own learning.

5.2 Modes of entry into a midwifery programme, and length of training

Current educational best practice emphasizes competency-based learning, in which an individual receives sufficient opportunity to acquire and to demonstrate a body of knowledge and a beginning, safe, level of performance in each of the skills that have been determined to be essential to midwifery clinical practice (Cowan, Norman & Coompamah, 2005a; Mallaber & Turner, 2006; Pehlke-Milde et al., 2006; Klein & Fowles, 2009; Fullerton et al., 2010). Therefore, midwifery programmes should be designed to accommodate, within reason, the opportunity for individuals to receive credit for prior learning (Scott 2007; Cubit & Leeson, 2009), and to pace through the curriculum with accommodation for acceleration of learning, or remediation of individual learning needs.

Countries may offer a variety of pathways for entry into the midwifery profession (Fealey et al., 2009). Although the programme design may vary, the competency-based outcomes of midwifery education should be equivalent. In other words, although there may be variability in the qualifications of students admitted to those programmes (e.g., basic students, those who have prior qualifications in some allied health field, or those already fully qualified as nurses), and variability in the length of the course of midwifery studies, nevertheless *the competency-based outcomes of midwifery education should be equivalent.* Individuals who qualify to be titled as a midwife, according to the international definition, should be educated to a common standard and a common set of competencies (Module 4).

Midwifery education programmes based in universities follow academic conventions for the length of programmes of study leading to the award of academic degrees. This is commonly up to four years of study at the baccalaureate degree level, and an additional one, or two years for the post-baccalaureate certificate or the master's degree. A few countries have introduced the concept of doctoral preparation as the entry-into-practice level (Avery & Howe, 2007; Edwardson, 2010).

The generic model of a community-based midwifery education programme, offered in the annex, is designed to be 18 months in length for those who are registered general nurses. The programme leads to the award of a diploma or midwifery certificate. The advantage of this programme design is that it builds upon a body of knowledge and a set of skills that have been previously acquired in the programme of nursing studies. These previously acquired competencies offer a foundation for, and underpin, the knowledge and skills of midwifery practice. This enables the midwifery educator and student to focus immediately and directly on the added theory and skills that are specific to the midwifery competencies that must be acquired.

For those without a general nursing qualification the education and training programme should extend over an additional period of time (to be determined according to country needs and circumstances) to accommodate acquisition of basic nursing skills prior to the focus on midwifery studies. An 18-month course of foundational studies is typical. These "direct-entry" programmes have the advantage of being attractive to individuals who may not have an interest in the generalist programme of nursing studies, but who, nevertheless, are attracted to midwifery as a profession. The foundational studies that precede direct-entry midwifery programmes offer a specific, more narrow, domain of knowledge and skills that are directly applicable to midwifery practice.

5.3 Direct entry midwifery programmes

Students who are admitted to direct entry midwifery programmes will not have completed a nurse training programme. These programmes are typically designed to commence with several months of basic theory and practice from either a nursing or medical or allied health practitioner curriculum, then followed with an integrated programme of theoretical and practical content. The basic academic content of the programme should be focused on the fundamental aspects of reproductive health and primary health care. Subject matter would include:

- the biological and behavioural sciences;
- microbiology and infection control;
- pharmacology;
- health and ill-health and factors that contribute to or inhibit health, including nutrition and life style issues especially safe sexual health;
- human development and the life cycle approach;
- philosophy of midwifery including professional ethics;
- the primary health care approach and care plans;
- the disease process; diagnostic investigations; medical and surgical conditions which may complicate reproductive health;
- basic clinical skills, including the techniques of health assessment,
- interpersonal skills and counselling;
- care of the dying patient and grief and bereavement.

Clinical experience would be arranged to complement theoretical learning. Development of the student's critical thinking skills, self awareness and confidence are particularly important, and especially so in countries where education and schooling opportunities for girls may be limited or where strong gender differences exist in the education system.

This initial training (typically, up to 18 months) would then be followed by the curriculum of midwifery studies, that applies to all educational programme designs. The model curriculum (see section 6.6) proposes an organizational framework of eight modules of study:

- Module 1: Gender perspectives on health and ill-health
- Module 2: Communications, counselling and health education
- Module 3: Fertility regulation and control of sexually transmitted infections and HIV/AIDS
- Module 4: Preconception and antenatal care
- Module 5: Care during labour and childbirth
- Module 6: Postnatal care of the mother and baby
- Module 7: An introduction to gynaecology
- Module 8: Professional issues in midwifery

5.4 Midwifery education programmes that build on basic nursing preparation

Students who are admitted to these programmes will have already completed a programme of basic nursing education. Applicants who have been out of the nursing workforce for some period of time may need an additional period of preparation (a "bridging module") to enable them to enter into student status again. They may also need introduction to modern educational and clinical practices, including the use of computers and other digital technology.

5.5 Combined programmes of nurse and midwifery education

Nursing and midwifery education are often combined in a single programme of study. The curriculum for the midwifery education component of this combined programme should be of sufficient length to accommodate acquisition of the knowledge and skills that have been linked to safe and effective practice of midwifery. Programmes are typically 18-months in length, primarily so that all students (those enrolled in university-based programmes as well as direct-entry students) can follow an educational pattern that is similar in length and content. The nursing part of the programme can be longer than eighteen months, if considered necessary. It is particularly important that the minimum requirements for clinical experience in the midwifery curriculum are met and that the students develop into competent practitioners whatever the mode of training.

5.6 A curriculum model

A generic curriculum has been developed that translates the ICM definition of a midwife into an education programme that can be adapted for use in any country. The curriculum is presented in the annex to the *Toolkit.* The model proposes a content outline that is independent of the design of midwifery education programmes within a country's educational system, i.e. whether as direct entry, as part of a nursing programme, or a post-basic programme following nursing.

The curriculum content proposed in the model is congruent with the WHO *Standards for Maternal and Neonatal Care,* which are part of the WHO Integrated Management of Pregnancy and Childbirth Care (IMPAC) package. The Maternal and Neonatal Care standards include the most relevant topics that need to be addressed for ensuring quality maternal and neonatal health services.

The content of the model curriculum also reflects the ICM core competencies for midwifery practice (Module 4 of this *Toolkit*). However, the proposed content includes knowledge and skills that have been identified by the ICM as *basic,* i.e. those that would be expected of all midwifery practitioners, and might be characterized as core skills. It also contains some content that has been identified by the ICM to be *additional*, i.e. those that enhance the scope of practice, and that might be particularly important depending on the environment in which the individual

practices (e.g. life-saving skills). Those involved in developing a midwifery curriculum must take care to ensure that content aligns with, and does not exceed, the regulatory authority for midwifery practice in the country (Module 2 of this *Toolkit*).

6. Student considerations

There is little basis for establishing minimum requirements for screening and admission of students to programmes of midwifery study. However, considerable wisdom has been acquired through many years of practical experience (McCarey, Barr & Rattray, 2007). There are certain individual characteristics that facilitate the acquisition of a core knowledge-base and the achievement of competency in the performance of clinical skills. These are presented in Table 1.

Table 1: Student admission criteria

Age	There is no evidence to support a minimum age requirement for admission. However, students must have acquired a certain level of maturity and self-reliance. A minimum age of 18 is commonly established, but primarily because that is an age that is also linked to completion of secondary education, or, in some countries, the age of legal majority.
Education	ICM standards require that the student have completed a formal secondary school education (commonly lasting 12 years) and achieved the school completion certificates appropriate to their country. In those countries where 12 years of schools is exceptional, then 10 years of schooling could be considered, although this would not comply with ICM standards. In these cases it would be important (if not essential) to establish some form of entry test to ensure that the applicants have a sufficient level of literacy skills and comprehension, and mathematical abilities. Some countries have experimented with offering foundation programmes to applicants with 10 years of schooling to provide the opportunity to enrich the fund of knowledge and generic skills, and/or to complete the full formal programme of secondary school education, before entry into the midwifery programme.
Literacy	An entry test may be required to assess literacy skills and comprehension, including language, if the curriculum is presented in a second language. Mathematics ability, and basic intelligence, are often also tested.
Good health	It is consistent with an ethical foundation for midwifery practice that a student does not have a current health condition that could be transmitted to the woman and her infant during the usual and customary delivery of health care services.

7. Infrastructure for establishing midwifery education

7.1 Educational system and resources

The curriculum model that is offered in the annex is a generic midwifery curriculum which may be reviewed and adapted to suit the particular circumstances in each country. It is appreciated that governments in countries where this programme is adopted may choose to integrate it within their existing educational system. Appropriate training sites may already exist but these should be audited to ensure that they meet the requirements for implementing this curriculum. A review of resources required to implement this curriculum will be needed and any necessary additional resources acquired to enable the programme to be successfully implemented. Again, the *ICM Standards and Guidelines for Midwifery Education* (available at www.internationalmidwives.org) offers a valuable resource.

7.2 Regulatory body

A regulatory body for midwives should be established, if not already in existence, which would be responsible for licensing midwives to practice. The regulatory body should also be a partner in the academic processes of validation and accreditation of midwifery programmes to ensure standardization across the country and quality control. Another function of this body would be to monitor the outcome of training programmes and offer guidelines on training and practice, as appropriate. It would also maintain a register of qualified midwives (See Module 2 of this *Toolkit*).

7.3 District and regional involvement

District and regional health personnel, policy makers, managers and providers (clinical midwives and, where available, medical practitioners with specific obstetric and neonatal competencies) should also be involved in the provision of midwifery education in their areas. District health administrators may have a direct role to play in allocating financial resources to support community-based education programmes. Policy makers and local health managers may have an important role to play in enabling access to suitable clinical areas at different levels of the health service, and ensuring adequate numbers of up-to-date trained staff who can act as mentors and supervise the students in the community and in clinical practice areas in health facilities. Their role may also extend to providing adequate resources and supplies required for good clinical care and assisting with the provision of residential accommodation and transport for both students and their academic mentors.

7.4 Community leaders and women's involvement

In order to achieve the necessary partnership model it is important to find innovative ways of including community- and faith-based advocacy organizations, local families and women, including representatives of local, district, regional or even national women's groups in the programme (Fox, 2003). In some places it will be possible to include such representatives on committees for developing and monitoring the education programme. It will always be possible to invite such representatives to provide input into the programme in some meaningful way.

7.5 Educational institution

The model curriculum is arranged in a modular form and each module (or unit) may be accredited and offered at the certificate, diploma or degree level, depending on the local higher education structures. Whatever level is chosen it should ensure that midwives completing their programme can take a full part in the health system and ideally should be at the same level as other health care providers in their respective country. Therefore an educational institution capable of academic accreditation should be involved in both the development of the curriculum and in the provision of midwifery education.

It is likely that most programmes being newly developed in countries in which the profession of midwifery is emerging will be initially offered at certificate or diploma level. Degree level programmes will need sufficient midwife teachers and other teaching staff with an appropriate degree to teach midwifery and related subjects at this level, as well as sufficient applications from students with high general educational qualifications to enable them to study at degree level. Regulatory bodies responsible for licensing midwives to practice should be partners in the academic processes of validation and accreditation of the educational programme to ensure standardization, quality control and an outcome of competent, caring midwives.

7.6 Clinical practice experience and practice sites

Students must have sufficient supervised practice to acquire competency in all necessary skills prior to their completion of the programme of study. There is no exact formula for establishing the ratio of academic studies to clinical practice. Some educators have recommended that a minimum of 60% of the programme should be devoted to clinical practice.

Some countries have established standards for the minimum numbers of experiences with various clinical skills in both simulated and actual practice. Recommended minimums are associated with competency development, even though acquiring specific numbers of experiences does not necessarily mean that competency has been achieved by any individual learner. The theory of competency-based education would support an individualized programme design so that the opportunity to acquire competency in clinical skills is customised, according to need. For example, students may already possess certain competencies acquired through work experiences prior to entering the student role. These students should be allowed to demonstrate their skill, for purposes of verification and documentation, and then be allowed to concentrate on acquiring skills that are new to them. Similarly, some students will require additional time and practice before they can demonstrate their competence and confidence in performing a specific function.

In any circumstance, all clinical experiences must be conducted under the direct, and later, indirect supervision of a mentor. During clinical practice, experience and teaching should enable students to relate the theory of the module(s) they are studying to the circumstances of practice.

All sites for student clinical practice must be assessed as appropriate for the education of student midwives. An audit of all practice sites should be conducted, using an agreed format, to ensure that all necessary requirements for training are present, including sufficient and varied clinical experience. In all placements, experienced midwives, or other appropriate qualified staff, will be required to act as mentors and teach, supervise and assess students in clinical practice.

Clinical experience will need to be acquired in the full range of health care service settings, ranging from district or regional hospitals to community-based primary health care and maternity care facilities, to ensure that the students are exposed to a wide range of experience and have the opportunity to learn effective life-saving skills appropriate and relevant to the place where the midwives completing their education will practice.

For example, during the labour and childbirth module, students should have experience in a labour ward of a district or regional hospital that is equipped to provide comprehensive obstetric care (including surgical management of

complications) to learn the management of complicated cases and life-saving skills. The preconception, antenatal, postnatal and gynaecology experiences may also be acquired in higher level care facilities, depending on how these services are organized locally. Attendance at some hospital outpatient clinics would likely be required, in addition to community clinics, to extend the students' experience in family planning, sexually transmitted infections and medical conditions such as diabetes, hypertension and cardiac disease. The final module in the model curriculum allows for a period of 'free allocation', which should enable the students to fill gaps in their clinical experience and further improve their life-saving skills, as well as develop self confidence.

8. Teachers of the midwifery education programme

It is essential that this midwifery programme is led by qualified midwives who have been specifically prepared for their role as teachers; thus they should be competent and confident midwifery practitioners as well as competent teachers. In order to maintain their clinical skills they should spend regular and frequent periods working with and supervising students in clinical practice. Midwife teachers require an in-depth knowledge of research-based midwifery, both theory and practice, and should also ideally be capable of conducting their own research. The midwife teachers also need a good knowledge of the principles and practice of education and should be comfortable with and committed to modern, participative approaches to adult education, because it is widely accepted that these are most effective (Knowles, Holton & Swanson, 2005). Broadly this means adopting a student-centred, rather than a teacher-centred approach to education and using a range of teaching and learning methods which encourage students to be actively involved in their own learning.

Midwife teachers also need opportunities for ongoing professional educational development on a regular basis to enable them to keep up-to-date in both midwifery and education theory and practice. This is particularly important in order to improve their effectiveness and maintain their interest and enthusiasm (Campbell et al., 2010).

Midwives in current clinical practice serve important roles as clinical preceptors, under the indirect guidance of the faculty of the education programme. The value of this service is immeasurable, because the participation of clinical teaching faculty enables the academic institution greatly to expand the number of students who can be offered admission to the programme. However, the skills of these clinical faculty, their ability to serve as teachers and mentors, and their ability to offer supportive guidance, supervision, evaluation and feedback is a critical component of the quality of the educational experience. Academic faculty must find ways and means to provide "training for the trainers" in order to promote and maintain the standards of quality expected of the teaching faculty, and also as a way of acknowledging their invaluable service.

Other professionals will also be involved in the education of midwives. These may include, for example, obstetricians, paediatricians, and other medical staff, public health officers, nurses, pharmacists, epidemiologists, microbiologists, psychologists and other appropriate subject specialists.

9. Resources for teaching and learning

Sufficient accommodation and resources for teaching and learning are essential. These include sufficient classrooms, seminar rooms, and a library which is well-stocked with suitable books, journals and other appropriate literature and learning resources, such as audio-visual aids, models, and charts. A selection of equipment used in midwifery and obstetric care are important assets for the skills-learning laboratory.

Educational technology is an important asset to the teaching and learning environment. There are many educational aids (e.g., videos) that are available to support both teacher-directed and student-self help learning. Computers that are linked to the Internet, where available, would be an additional asset for education in reproductive health. Some countries have acquired a level of Internet connectivity that accommodates the opportunity for students to access some (or all) of the curriculum material via the Internet, while remaining in the community to acquire clinical practice experience.

The World Health Organization prepares a large quantity of literature related to reproductive health that is very helpful for teaching and learning purposes. Education materials are also produced which are suitable for midwives. These include the midwifery education modules (WHO, 2006), and a number of other practice guides.

10. Teaching and learning methods

10.1 Student-centred methods

Students should be active participants in their own learning throughout the programme. Student-centred learning methods which promote active participation by the students include:

- problem-based learning
- case studies
- discussion, and other kinds of group work
- seminar presentations
- experiential learning (e.g. role-play, simulation)
- workshops
- projects

10.2 Problem-based learning

The educational method of problem-based learning is a key teaching and learning strategy that is featured in the model curriculum (Brook & Barnes, 2001; Mc Court & Thomas, 2001; Raisler, O'Grady & Lori, 2003; Rowan, McCourt & Beake, 2009). Problem-based learning is a way of teaching that uses "real-life' situations as a stimulus to initiate the problem-solving process. Ways of collecting the knowledge necessary to solve the problem are discussed and evaluated by the group and the teacher. Critical thinking is encouraged. The knowledge will usually include several disciplines, for example, one problem may involve biology, psychology, sociology, midwifery and pharmacology, whereas another problem may require a different mix of disciplines. The necessary skills will also be identified and, in consultation with the teacher, plans are made for the students to learn these skills, initially on models, if appropriate, and then in clinical areas under supervision.

In order for problem-based learning to be effective, the teacher needs to act as a facilitator and provide the students with support and guidance to appropriate resources, although they will also be expected to seek out the information they require for themselves (Rowan et al. 2007). The students will present their work based on problem-solving in seminars, case studies and/or role play to their peers and teachers. Following new learning the material is summarized and integrated into the students' existing knowledge and skills.

10.3 Reflection

Reflection, which essentially involves learning from experience, is another mode of learning that is promoted in the model curriculum, and especially in clinical practice (Murphy, 2004; Wilding, 2008; Branch, 2010).The stages are often described as a cyclical process as reflection should lead to action and then further reflection (Figure 1).

This mode of learning requires the students to keep reflective diaries during their clinical practice and to select incidents to be critically discussed in groups when they are in class or with teachers in individual or small group tutorials. Reflective journaling allows the individual to review patterns of behaviour that are characteristic of individual responses to situations. This internal review process, when combined with feedback received from others who observed a particular event or interaction, offers the opportunity to gain a wider perspective of how others perceive an individual's social-emotional response patterns, and perhaps to identify better (less emotional or more reflective) approaches. Reflection as a process can also be promoted during case study work and other classroom activities (Ruthman et al., 2004).

11. Assessment of knowledge and skills

The ultimate goal of student assessment is the promotion of best practice (Ring et al. 2005). A valid and reliable assessment strategy is essential to ensure that the students achieve the knowledge and skills required to be competent midwives (Taylor, 2009). The importance of using multiple means (approaches) and multiple methods (tools) for evaluation cannot be overstated (Gunathunga & Fernando, 2000; Norman et al. 2002; Fullerton & Ingle, 2003; Leung, Mok & Wong, 2007). Various strategies are presented in Table 2.

Table 2: Assessment formats that may be useful for measuring knowledge and skills

Knowledge	
Examination items developed by the teacher	**Demonstration formats developed by the student**
Matching	Anecdotal recordings (also known as process recordings) - written reflections of a lived experience
Multiple choice	Exhibitions
True-false	Extended answer essay
	Oral essay
	Product items (e.g. portfolios and projects)
	Short-answer essays
	Written critique or review/formal paper
	Demonstration
	Discussion
Skills	
Clinical simulations	
Clinical demonstration	
Objective structured clinical examinations	
Standardised patients	
Performance items (e.g. clinical checklists)	

Sources: Wass et al., 2001; Norman et al., 2002; Newble, 2004; Nehring & Lashley, 2004; Kneebone, 2005; Oermann & Gaberson, 2005; Clifton & Schriner, 2010; Kaplan, 2010; Memon, Joughin & Memon, 2010; Strupe, Huynh & Haines, 2010; Su & Juestel, 2010

Assessment strategies should be:

- action-oriented - actively seeking solutions to problems, trying alternatives;
- teaching-oriented - focused on finding more effective ways to communicate observations and experiences;
- participatory - engaging students in the self-evaluation of their own progress;
- inclusive - including multiple means of assessment in order to provide as many opportunities as possible to gauge the teaching/learning process (Baig, Violato & Crutcher, 2010);
- responsive - offering feedback, incorporating change.
- and, of course, linked to the educational objective and the intended learning outcome.

The assessments should cover both theory and practice and include a range of methods.
The outcomes of student assessment should document:

- a knowledge base for practice;
- cognitive abilities;
- communication skills;
- professional values;
- psychomotor and technological skills essential for delivering care;
- problem-solving, decision-making, and critical-thinking abilities;
- the ability to handle ambiguity, initiate and respond to change;
- the process of learning to learn;
- acceptance of responsibility for one's own actions and decisions;
- thinking and acting like a professional;
- a sense of commitment to be responsible for actions;
- awareness of the need for accountability for actions and decisions related to practice (cognitive dimension);
- acceptance of responsibility for their own care of women (value dimension)

A supportive clinical environment is essential to fair and impartial assessment. Students must feel free to learn. They must feel valued as individuals, able to make progress at a pace that may vary from that of others. They must also appreciate the assessment process as an assisting, not controlling, strategy.

11.1 Assessment of Theory

There will be need for *formative* assessments throughout the programme of study, as, for example, during and on completion of each module (Cleland et al., 2010). There will also be need for *summative* assessment at the end of the programme to assess overall learning and to demonstrate the integration of knowledge and skills (Embo et al., 2010). Formative assessment of student learning should include an assessment of the ability to engage in *critical thinking* (Bulmer Smith, Profetto-McGrath & Cummings, 2009; Forneris & Pden-McAlpine, 2009).

11.2 Assessment of clinical work

Clinical assessment is a process by which judgments are made about learners' competencies in practice. In clinical practice the student initially learns by observation, demonstration, practising under direct supervision, and then as they develop their skills under indirect supervision until the student is assessed as competent. In addition the student gradually moves from simple skills to managing more complex situations which require the knowledge and skills to assess the situation correctly, correlate the data, make appropriate decisions, implement the correct actions competently and evaluate the outcomes. A clear progression from simple tasks towards complexity will thus be practiced throughout the programme, with a gradual increase in independence until the student is pronounced a competent practitioner.

Simulations of practice are often used in the early stages of the learning process. They may also be preferable under the circumstances in which direct observation may be too time-consuming (e.g. when seeking to observe management of critical skills that are used under circumstances that occur with low frequency) (Harvey, 2004). However, because simulations are removed from the actual context of the clinical situation, they do not reflect the very real and competing demands of the actual practice environment, such as time pressure and urgency of the decision-making process (Kneebone et al., 2004; Cowan, Norman & Coompamah, 2005b; Branch, 2005).

Observations of students performing in the actual practice setting are the most direct method. Clinical skills checklists are useful for this purpose. Checklists are used as the external, objective evidence that the student has acquired the ability to translate cognitive knowledge into practical performance of a skill (the correct steps in the correct order, with consideration of client safety). These checklists can be used in simulated practice using anatomical models (Kaplan, 2010), with standardized clients (actor patients who offer scripted responses), as well as in actual patient-care situations (Rhodes & Curran, 2005; Paterson et al., 2004; Carlough & McCall, 2005).

Supportive supervision and feedback are keys to *formative* clinical assessment. Feedback must be:

- precise and specific
- inclusive of both verbal and visual dimensions
- given at a point in time that it can be clearly linked to performance
- adapted to the learner's style
- inclusive of strategies to improve performance
- documented carefully and completely.

Summative clinical assessments should be linked to expected standards of performance. Assessors may be mentors, midwife teachers and, for some skills, e.g. those necessary for life-saving, medical staff. Assessors should themselves be trained to conduct student assessments in fair and objective ways (Fraser, 2000).

12. Making decisions about student performance

12.1 Setting the pass or fail standard

Making decisions about student performance is essential to any assessment of competence. When assessments are used for summative purposes, the score at which a student will pass or fail has also to be defined. The methods by which these decisions are made should be documented, accountable and defensible (Searle, 2000; Howley, 2004; Ricketts, Freeman & Coombes, 2009).

Grading systems have been developed to reflect either normative or criterion-referenced pass or fail standards.. *Norm-based evaluation* compares one learner's performance with the performance of other learners in the group. *Norm-based evaluation is clearly not appropriate when performance must be at a certain level* – as in health professions education, where the public must be protected from practitioners who cannot perform to an agreed standard. This approach to standard setting would also be of particular concern in countries where there are a number of midwifery education programmes. The pass or fail standard for students should not be dependent on the circumstances under which the students acquire their education, but rather, on the basis of a common, and justifiable, expected standard of performance (Stern et al., 2005).

Criterion-based evaluation requires that the students attain certain essential knowledge and skill and meet a clearly defined standard of performance that is established well prior to the time of assessment, and justified on the basis of safety or quality. There are several well established methods for establishing a criterion-referenced pass or fail standard for both classroom and clinical achievement

(Downing, Lieska & Raible, 2003; De Champlain, 2004; Downing, Tekian & Yudlowsky, 2006). These methods have, in common, a focus on the "borderline candidate", the individual whose performance is variable, and "on the margin."

If the student fails to achieve the required standard, the assessment must be repeated. Competency-based education schemes will provide the opportunity for the student to repeat the assessment, acquire additional (remedial) learning opportunities, and/or be tested in a different fashion (for example, substituting an oral for a written examination), but with the same outcome criteria. There is no general standard for the number of times that a student should be allowed to repeat any single assessment. Standards that are set by the individual midwifery programmes should be established with consideration of fairness to other students, and consideration of the impact on the women who receive care from students during the learning process. The standards may need to be approved by the accrediting body (where available). The appropriate number of credits should be awarded after each successful summative assessment.

12.2 Marking

Written assessments (also known as constructed responses) should be marked using well-prepared guidelines. A list of the major elements that students should include in the ideal answer should be prepared in advance. A decision about whether partial credit will be given, should the student provide some, but not all, of the ideal elements, should also be pre-determined. It is helpful to write brief comments on each paper to point out the areas of strength and weaknesses, so students receive feedback on why their response received the score that it was assigned.

Each essay should be marked by a second person that preferably does not know the mark given by the first marker, to ensure marking consistency. Alternatively, to check for marking consistency, a second marker should mark a sample of all students' scripts. It would be necessary to seek the opinion of an additional reader in the event that there is disagreement among those who mark these examinations.

Constructed response items are perhaps easier for teachers to write. However the marking of these items is very expensive of time and effort, and the marking is subject to interpretation and subjectivity unless clear performance criteria have been developed in advance.

Selected response examination formats (e.g. multiple-choice examinations) are objectively scored. There are many challenges to developing this type of examination, and teachers must be well educated in the item construction process. However, well constructed selected response examinations lead to answers that are either correct or incorrect. Scoring may be done by hand, although there are many computer-assisted methods (e.g., document scanners) that can be used for this purpose. Additionally, there are many software programmes that can provide very valuable feedback about properties of the examination items themselves, including the degree of difficulty of each item, and the degree to which a correct response is more likely to be selected by the more competent respondent. This can assist in the identification of candidates who are likely to be attracted to common errors. Additional or remedial education can be targeted for these students.

12.3 Quality considerations in the selection of assessment tools

Clear written criteria and well formulated assessment tools will be required for each assessment. There are a number of technical and practical considerations that are essential when selecting a tool (e.g. a standardised examination, a clinical checklist) that will be used for student assessment.

Validity refers to the relationship between the measurement tool and the purpose for which it is intended. In other words, a valid tool is capable of measuring what it is intended to measure. Evidence in support of tool validity may include demonstration that the content of the tool (e.g. the statements, or questions) has been selected (or affirmed) by experts in that content area, or has been linked to the evidence-based literature. There is also a certain logic that argues that a tool should have the appearance that it is relevant to the purpose. This is often called *face validity*. It serves the purpose of increasing the acceptability of the tool to those with whom it will be used.

Reliability refers to the reproducibility of results obtained from use of a tool. There is a certain degree of measurement error that is associated with any measurement instrument. Nevertheless, a reliable tool will generate similar results (within a certain degree of measurement error) when it is used again, with the same population, under similar circumstances, within a reasonable period of time between measurements. The tool is "trustworthy." The documentation that should accompany any measurement tool should provide the data that was generated when the tool was tested for reliability. There are a number of different approaches to the assessment of reliability. The types of measurement instruments used in student assessment are best assessed for reliability using the approaches known as test-retest reliability (when applied to an individual) and inter-rater reliability (when used by two or more assessors who are each, independently, assessing the same individual or group of individuals). An agreement of 70% between scores achieved on these repeated administrations (the upper limit of "modest correlation") is the minimal acceptable level of evidence of instrument and/or rater reliability ((Raykov & Marcoulides, 2010).

Of course, even the most valid and reliable instrument will not be useful if the process for using the tool is too burdensome or too costly. The *feasibility* of using the tool must be carefully considered as a component of the tool selection effort.

13. Quality assessment

13.1 Assessing quality

Quality in education is assessed by measuring what is provided and then comparing this to what is expected. If this evaluation reveals deficiencies or weaknesses, for example, poor staffing levels, poor standards of teaching or inadequate resources, genuine attempts must be made to correct the problems (Pope, Garrett & Graham, 2000).

13.2 Evaluation of programme by student

The students should have planned opportunities to evaluate the programme at regular intervals throughout the course. Methods of evaluation may include:

- informal group discussion between students and teaching staff
- written comments and/or questionnaires
- informal interviews with a random selection of students.

The evaluation should include all aspects of the course. These include the experience and supervision in clinical areas, the mentoring system, teaching staff and methods of learning, availability of appropriate resources, conduct of assessments and strategy, support given to students and facilities available to them during their programme.

Data obtained from evaluations should go minimally to the Head of Department of the institution offering the course, as well as to those responsible for the day-to-day management of the programme (often called the Programme Management Team). This team are usually required to respond to evaluations and student feedback with appropriate decisions regarding the ongoing development of the programme. Finally evaluation reports are often required by the Board of Examiners where these exist, and sometimes the accreditation and regulatory bodies (Carroll, Thomas & DeWolff, 2006) although often the requirement for these latter bodies is that such reports should be kept on file for use as evidence when the time comes for re-accreditation of the programme or formal validation visits/inspections.

13.3. Auditing of clinical placeaments

Specific tools should be devised for an annual audit of clinical areas where students are assigned for experience. These audits will address the availability of personnel, equipment and supplies that are essential to the provision of health care services that are safe and of high quality. Minimum requirements should be identified for student placements. These minimum requirements can be identified from the information obtained from the audits. (Note that students should not be used to substitute for or to augment facility staffing levels.) Choice of placements for students will then depend on the outcome of the audits, together with previous students' evaluations of the placements, if they have been used for past students.

14. Course Boards

In most institutions the programme is required to be managed by a Programme Management Team and an Examination Board, or their country equivalents.

The Programme Management Team is usually responsible for reviewing the:

- programme
- standards achieved by students
- resources available for the provision of the programme
- students' evaluations
- appointment or nomination of external examiners to the examination board.

The programme management team can vary depending on local rules and regulations but ideally should consist of teachers of the programme, the programme leader, as well as representatives form management and clinical staff for a variety of clinical placement areas. Other members can include lay representatives for women's groups/associations, community leaders etc, and may also include teaching representatives for other disciplines/programmes to ensure consistency of the midwifery programme with other programmes at a similar level.

The Examination Board, comprised of administrators and teachers for the programme, is tasked with using multiple means to assess the outcomes of student education (Dulski, Kelly & Carroll, 2006). The Board is usually responsible for:

- reviewing the overall assessment strategy;
- reviewing the standards attained by students and making suggestions for further improvement of the programme and assessment process;

- examining all or a sample of the assessment and examination scripts to monitor marking standards and observe for consistency and to assess the quality of the students' work;
- observing clinical practice and assessing the level of the students' competence, including their ability to engage in critical thinking and their clinical decision-making capability;
- assessing the support and teaching given by the mentors, the quality of assessments of practice and the resources available in practice placements;
- advising on particular students who are "borderline", or have particular problems associated with the assessment or examination process.

The examination board should ideally include external examiners from other institutions involved in midwifery education so that there is consistency across institutions. (Boursicot, Roberts & Pell, 2006). Ultimately, all standards are policy decisions.

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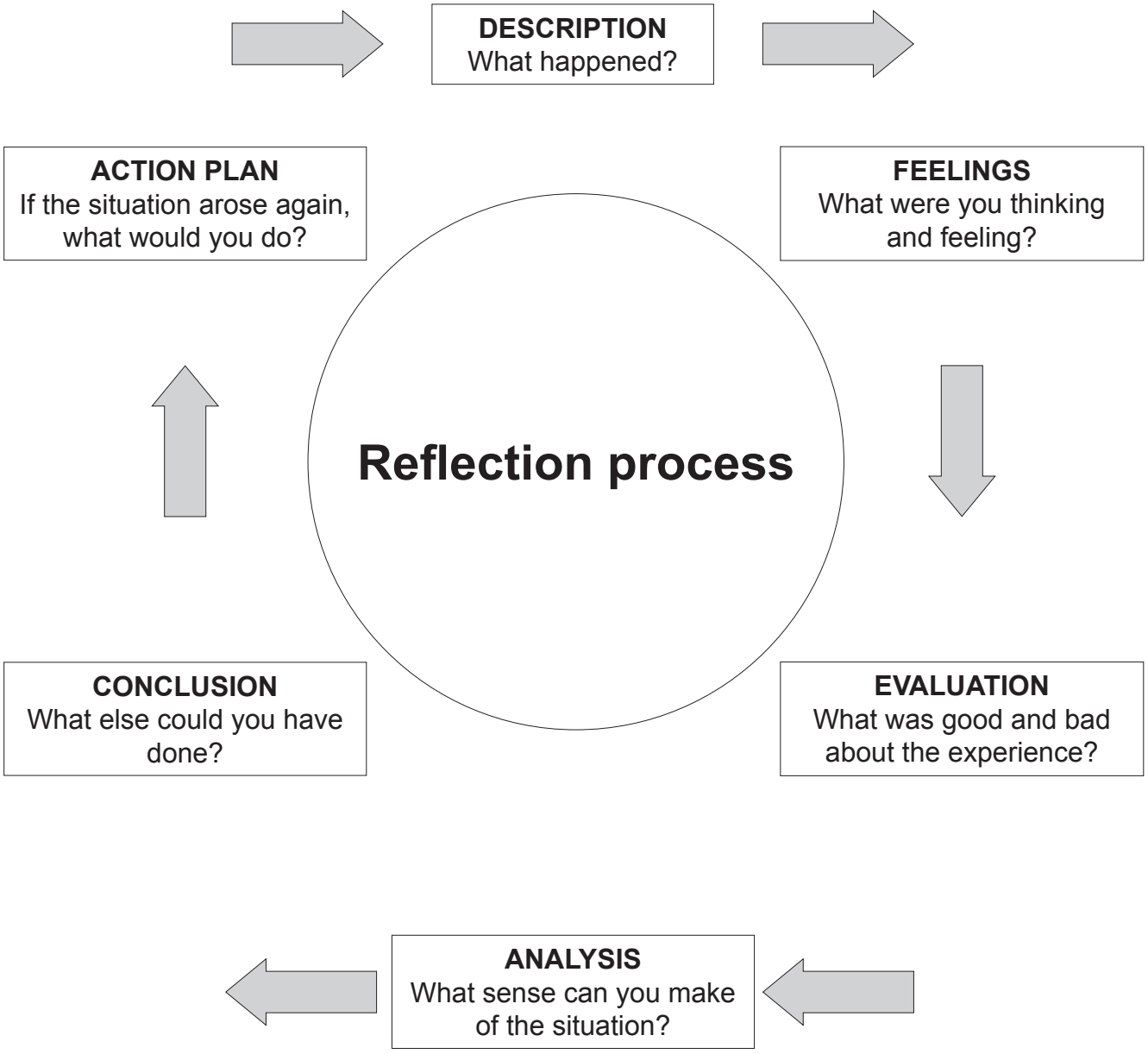
Figure 1: Reflective cycle

Definition: Reflection is a process of reviewing an experience of practice in order to describe, analyse and so inform learning about practice.



ANNEX 1: Framework for Evaluating the Curriculum

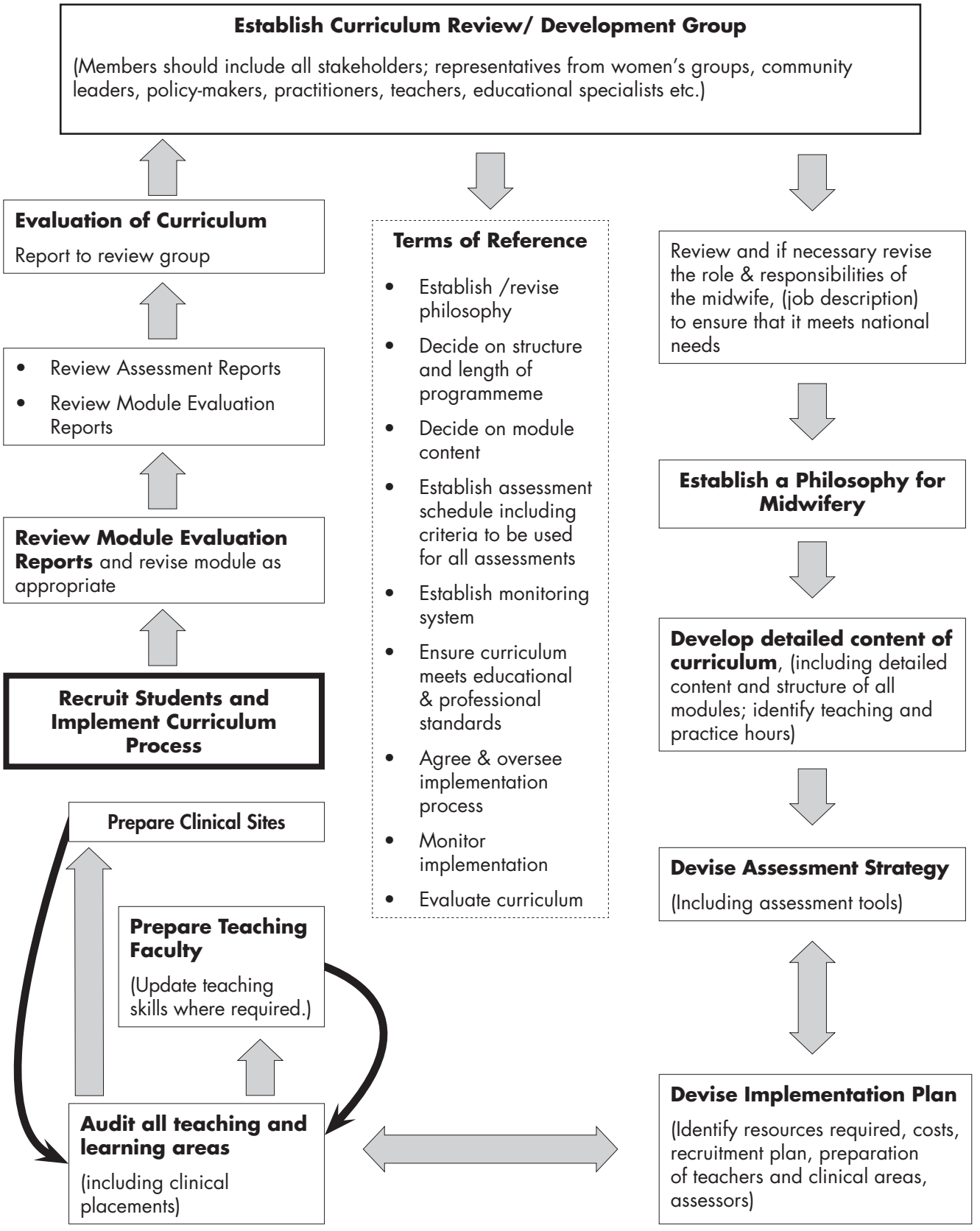
This checklist can be used to assess the curriculum to see where the curriculum needs strengthening. In completing the assessment checklist it is important to;

- check the written curriculum document and all assessment tools and guidelines;
- obtain the view of current and recently completing students, teachers and programme leaders;
- obtain the view of the midwives in clinical practice who supervise students;
- obtain the view of the educational institution supervising the curriculum;
- obtain the views of the regulatory body and professional association where such exists;
- observe teaching and learning being undertaken ;
- observe students in the clinical areas;
- review student records;
- review teaching and learning resources.

	YES	NO	Not Known
The curriculum has been reviewed and revised in the last five (5) years.			
Minimum entry requirement established for the programme are in place and being followed. (Insert appropriate criteria here.)			
A teacher to student ratio has been agreed and conforms to national norms and international standards.			
The curriculum requires approval by the Midwifery Regulatory Authority (the body established by the government to oversee midwifery and grant the right to practice).			
The curriculum is delivered in, or has the approval of, an appropriate educational body/institution.			
The curriculum is at the educational level equivalent to the curriculum of other health care practitioners.			
The curriculum is based on sound educational theories of adult learning that fosters the critical thinking and problem solving skills of students.			
The curriculum has a clear philosophy of midwifery that values midwives working with women in a partnership and recognizing pregnancy and childbirth as a natural life event for most women.			
The curriculum is organized to ensure students can link theory to practice; practice placements allow them to practice what they have been taught in the classroom.			
The curriculum is led by an experienced midwife teacher who has a background in midwifery and has been trained as a teacher.			
Teaching and learning resources are adequate and expose students to recent research findings.			
Students have opportunities to practice in the clinical area under the direct supervision of an experienced midwife and have their practice assessed.			
On completion of the education programme midwives are able to practice as autonomous/self-directing practitioners, (able to practice as outlined in the International Definition of a Midwife).			

	YES	NO	Not Known
On completion of the education programme midwives are able to practice as a fully participating member of a multi-disciplinary team.			
On completion of the education programme midwives are able to provide midwifery care in any setting, community, clinic, health facility, hospital or the clients' own home.			
On completion of the education programme midwives are able to provide all essential life-saving skills to women and newborns.			
All assessments are clearly identified in the curriculum and assessment points are known to the students.			
Clear criteria have been set for all theory and clinical assessments.			
All assessors, including clinical assessors, have been specially prepared for their role.			
The curriculum has a clear and transparent quality improvement mechanism; students are able to give feedback to teachers.			
All assessment tools have been tested for validity and reliability.			
Student records ensure that individual progress can be tracked throughout the programme.			

ANNEX 2: Essential steps in curriculum development to ensure fitness-for-purpose



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