Innovations for Strengthening Global Midwifery

9.1 What Is Health Innovation?

The Cambridge Dictionary (2020) defines innovation as ‘the use of a new idea or method’, whereas health innovation is ‘the development or delivery of new or improved health policies, systems, products and technologies, services and delivery methods that improve people’s health’ (WHO 2020a). Defining features of health innovations are that they respond to unmet needs by employing new ways of thinking and working, and they add value in the form of improved efficiency, effectiveness, quality, safety and/or affordability.

Health innovation falls under the broader umbrella of social innovation which encourages new approaches to tackle issues surrounding poverty, education, health, and other human development problems by making system-level changes (Kimble and Massoud 2016). Innovations to strengthen global midwifery are, of course, health innovations. However, they are broader than this as midwifery follows a holistic model (Yanti et al. 2015; ICM 2014) drawing on social science, psychology and other disciplines. Krubiner et al. (2016) suggest that health innovations can promote women’s empowerment for those working as midwives.

9.2 Policy Drivers for Innovation

In 2018, global policymakers and donors joined together in a global action plan (WHO 2018) to accelerate progress towards the health-related Sustainable Development Goals (SDGs). This action plan calls for innovative ways of working together at policy level, especially to address SDG targets where the pace of progress has not been sufficient; it also advocates for innovative approaches to programme design in fragile and vulnerable states and in disease outbreaks, such as Ebola and COVID-19. The global action plan also supports social innovation for the empowerment of people and communities as co-producers of health and suggests that innovations from the

Expected Learning Outcomes

By the end of the chapter, the reader should be able to:

1. Describe some key concepts in the field of global health innovation.
2. Cite some examples of innovations in midwifery education and midwifery practice and interprofessional working.
3. Outline the process of developing, implementing and evaluating a midwifery innovation.
4. Discuss the enablers and barriers for innovations in midwifery.
5. Suggest some strategies to develop future innovations in midwifery.
private sector and academia can be harnessed for health and health-financing. The plan acknowledges that investment is needed for sustainable scale-up of innovations, to ensure that they reach the people who need them. WHO (2020a) places special emphasis on innovations that focus on the needs of vulnerable populations; however, many health innovations are not targeted at the poorest people in the world and are unaffordable and/or unsustainable for their health systems (Barlow 2017).

Achieving the sustainable development goal (SDG) of healthy lives and well-being for all can be accelerated through innovation (WHO 2018). However, the global goal of universal health coverage (UHC) by 2030 will not be realised unless many different stakeholders work together with communities to find innovative solutions to global health challenges (Acharya et al. 2018). These health challenges are often complex; therefore, health innovation cannot be limited just to the scientific development of products and technologies. Different kinds of innovation such as business and social innovations are also required in order to reach health goals. This enables effective solutions to problems where there are systemic social and environmental issues and ensures financial sustainability to scale up new ideas (WHO 2020b; Stanford Business 2020).

UNFPA’s (2019) global midwifery strategy 2018–2030 prioritises the development of innovations to improve midwifery capacity and quality of care. It promotes partnerships with the private sector on product and process innovations in midwifery, such as introducing and disseminating low-resource setting appropriate technologies, training models, products and solutions and encourages country-specific innovations in midwifery. WHO (2013a) promotes innovation to improve health professional regulation, citing the ICM’s (2018) midwifery regulation toolkit as an example of such an innovation. Additionally, the role of innovation is threaded through WHO’s (2019) framework for strengthening midwifery education. This calls for innovative approaches and radical thinking to re-shape midwifery education for the future. WHO’s seven-step plan for strengthening midwifery education mandates innovative learning techniques for student midwives, use of innovative technology such as e-learning, film, mobile phone apps and simulation, innovative financing mechanisms for strengthening midwifery education and advocacy for dedicated budgets for research and innovation. The framework also champions the role of private sector partnerships, with companies such as Laerdal Global Health (LGH), Merck for Mothers and Johnson and Johnson.

9.3 Responsible Innovation in Health

Health innovations have a poor track-record for sustainability. This may be because they are unaffordable, inaccessible or inappropriate, especially in low-resource settings (Barlow 2017). Technological innovations can contribute to spiralling healthcare costs (Kumar 2011), being quickly adopted whilst having unproven value or indeed posing a risk to health (Dixon-Woods et al. 2011). An example of this is routine continuous foetal monitoring in labour which has been shown to make no difference to infant mortality but is associated with higher rates of caesarean and instrumental births (Alfirevic et al. 2017). In the past, innovations in health care have often been driven by the producers or the financers of a particular innovation, not by the people who are going to use it (usually the healthcare professionals) or those who would benefit from it (patients or clients). This can mean the innovation is not adopted widely and is not sustainable (Ahluwalia et al. 2018). Therefore, a new approach is needed to innovations, one that is based on a real need, is affordable, fits the context, is scalable and does no harm (Bessant 2019).

Responsible Innovation in Health (RIH) is a relatively new way to frame innovation and advocates for the involvement of all stakeholders at every stage of the process for the democratisation of health technology (Silva et al. 2018; Lehoux et al. 2019; Bessant 2019; Ahluwalia et al. 2018; Westerink 2019). In RIH all stakeholders agree
to meet a set of ethical, economic, social and environmental principles, values and requirements when they design, finance, produce, distribute, use and discard sociotechnical solutions to address the needs and challenges of health systems in a sustainable way (Lehoux et al. 2018).

RIH is essential to achieve Universal Health Coverage by 2030, for example through the development of new collaborative strategies to deal with complex issues such as the fight against HIV/AIDS, malaria and tuberculosis or antimicrobial resistance to stop the advance of drug-resistant microbes (Unitaid 2020). Silva et al. (2018) suggest five value domains for responsible innovation in health, and these are summarised in Table 9.1.

RIH embraces the additional concepts of disruptive innovation, frugal innovation and reverse (or bi-direction) innovation. ‘Disruptive innovations’ are ones which make products or services more accessible; they are often cheaper, simpler, smaller and more convenient to use than previous technologies. Romanzi (2015) argues that maternal and newborn health needs disruptive innovation to ensure every woman and her baby has access to high-quality maternity care to meet the sustainable development goals. Another related concept is ‘frugal innovation’ which offers simple and cost-effective solutions to healthcare challenges to more people with minimal use of resources (Arshad et al. 2018). ‘Reverse innovation’ is described as the flow of ideas from lower to higher income settings (DePasse and Lee 2013) and is discussed in Chapter 15 in relation to global midwifery partnerships. Some authors exercise caution over use of the term reverse innovation, suggesting it perpetuates a colonial world view in which the flow of information is expected to go from high-income to low-income countries (Harris et al. 2016; DePasse and Lee 2013; Kulasabanthan et al. 2017).

### 9.4 Innovations for Midwives and Midwifery

Midwifery innovations can be described in two ways: innovations developed by midwives or innovations developed by others for use within midwifery. Both can strengthen midwifery globally and will be featured in this section. These are summarised in Table 9.2.

#### Table 9.1 Value domains for responsible innovation in health (adapted from Silva et al. 2018)

| Value domain                  | Dimension                                                                 |
|-------------------------------|---------------------------------------------------------------------------|
| 1. Population health          | • Does the innovation address a relevant health issue?                     |
|                               | • Is it ethical?                                                          |
|                               | • Does it promote equity?                                                 |
| 2. Health system              | • Has the process been inclusive?                                         |
|                               | • Is the solution dynamic and responsive?                                 |
|                               | • Can the health service provide the level of care required by the innovation? |
| 3. Economic                   | • Does the innovation deliver greater value with fewer resources?         |
| 4. Organisational             | • Does the business model balance value for money with a high-quality innovation? |
| 5. Environmental              | • Is the innovation and the business model eco-responsible?               |

#### Table 9.2 Summary of innovations explored in this section

| Innovations in midwifery practice | 1. Group antenatal care |
|-----------------------------------|------------------------|
|                                   | 2. Midwifery Units      |
|                                   | 3. We Care Solar Suitcase® |
|                                   | 4. The Cradle Vital Sign Alert (VSA) device |
|                                   | 5. Case study: The KangaWrap |
| Innovations in midwifery education| 6. E-learning and mobile apps |
|                                   | 7. Low-fidelity simulators for low-dose high-frequency training |
|                                   | 8. Educational games     |
|                                   | 9. Films                 |
|                                   | 10. Interprofessional education for interprofessional working for interprofessional working |
|                                   | 11. Case study: MCAT meetings in Cambodia |
| Midwives’ associations as innovators| 12. Case study: Online voting in Bangladesh |
9.4.1  **Innovations in Midwifery Practice**

9.4.1.1  **Group Antenatal Care**

Women are recommended to have a minimum of eight antenatal care (ANC) contacts during their pregnancy (WHO 2016a). This traditionally involves a schedule of one-to-one visits with a care provider (Catling et al. 2017); however, as described in Chapter 7 of this book, a new model of group antenatal care (G-ANC) known as ‘Centering Pregnancy’ was piloted in the United States of America (USA) in the 1990s. G-ANC puts pregnant women at the centre of service provision and fosters self-efficacy and social support, enabling women to benefit from the expertise and support of both healthcare providers and peers (Sharma et al. 2018). This is an example of disruptive innovation, which aims to provide more effective ANC by disrupting the societal and other systems and structures that drive poor health and to co-create equitable communities, building collective power (Centering Healthcare Institute 2009–2020). WHO (2016a) recognises G-ANC as having the potential to improve utilisation and quality of care for pregnant women.

9.4.1.2  **Midwifery Units**

A Midwifery Unit (MU) (sometimes called a birth centre) is:

> a location offering maternity care to healthy women with straightforward pregnancies in which midwives take primary professional responsibility for care. Midwifery units may be located away from (Freestanding) or adjacent to (Alongside) an obstetric service (Rocca-Ihenacho et al. 2018:7).

MUs have already been described in Chapter 7 as a model of care; however, they warrant specific exploration in this chapter as an example of an accessible and affordable midwifery innovation (Ernst and Stone 2012). WHO (2018) advocates for more holistic maternity care that promotes a positive birthing experience for women. MUs achieve this by providing a social model of care. This is described as ‘bio-psycho-social model of care that addresses physical, psychological and social needs’ (Rocca-Ihenacho et al. 2018:7). A systematic review of maternal and foetal outcomes by planned place of birth (Scarf et al. 2018) concluded that outcomes in MUs, compared to obstetric units in hospitals, were improved for women, and there was no difference in neonatal outcomes; the review recommended that MUs should be scaled up. In addition to outcomes relating to safety, birth centres provide more positive experiences of maternity care for women/birthing people and cost less than traditional hospital care (Overgaard et al. 2012a, b; Macfarlane et al. 2014a, b; Rocca-Ihenacho et al. 2018). MUs can also encourage innovative ways of providing care and foster fulfilment and empowerment for midwives (Walsh 2007, 2009). However, Walsh et al. (2020) found significant obstacles to MUs reaching their full potential. These included a lack of commitment from healthcare providers to establish MUs as part of essential maternity service provision, an absence of leadership to drive change and lack of capacity and willingness to address women’s information needs.

9.4.1.3  **The We Care Solar Suitcase**  

Reliable electricity and lighting in health facilities are essential for delivering high quality health care (Ouedraogo and Schimanski 2018; Rokicki et al. 2019). However, in many parts of the world midwives lack, or have intermittent supply of, electric power in their workplaces and must manage in the dark or use non-electrified light sources such as candles, torches, paraffin lamps or the light from their mobile phone (if they are able to charge it). Sometimes midwives working alone need to hold mobile phones in their mouths to keep their hands free (Fig. 9.1); this raises the risk of personal infection and inhibits verbal communication. Non-electrified light sources provide low-quality light and may emit toxic fumes or present a fire hazard. Where generators are available, they may break down, there may be no fuel to power them or facilities may have insufficient funds and/or knowledge for repair and maintenance. Lack of continuous electricity makes it impossible for midwives to provide safe, round-the-clock care or to call for help when necessary. Consequently, many health facilities are
closed at night, leaving women with no access to midwifery care.

‘We Care Solar Suitcase®’ (Fig. 9.2) is a technological innovation that enables health facilities to provide 24-h services where there is little or no reliable source of electricity. It comprises a complete solar electric system powering customised medical lights, a foetal Doppler, mobile phones and headlamps (We Care Solar 2020; Rokicki et al. 2019). It can be equipped with additional devices such as a laptop computer programmed with educational materials and an electronic medical record information system, enabling midwives to improve the quality care they provide for women and their newborns (Kagurusi and Foulds 2020). The kit is low maintenance, only requiring a replacement battery every 5 years. Research from Gambia found that light from Solar Suitcases gave health workers increased confidence to manage complications, more autonomy over the quality of care and greater self-efficacy. It also enabled health workers to use both hands when providing emergency care and improved sanitation and infection control measures in health facilities (Eanelli 2019). Further research studies are ongoing to evaluate the impact of Solar Suitcases (Cohen 2018; Rokicki et al. 2019; We Care Solar 2020).

This innovation shows how the sustainable development goals are linked: goal 3 (good health and well-being for all) cannot be achieved without goal 7 (affordable and clean energy). Energy poverty and energy vulnerability have left almost one billion people without access to adequate health care in low-resource countries (Ouedraogo and Schimanski 2018). The device also shows how holistic approach can lead to synergistic effects, such as increased access and improved quality of care. We Care Solar (2015) estimated the cost of deploying a complete Solar Suitcase system at about $2500.

### 9.4.1.4 The Cradle Vital Sign Alert (VSA) Device

The Microlife Cradle VSA Device (Fig. 9.3), a low-cost blood pressure machine, is accurate in pregnancy and specifically designed for low-resource settings. Its traffic-light early warning system alerts midwives and other health workers to the wall and the solar panels are secured to the health centre roof (We Care Solar 2020). The kit is low maintenance, only requiring a replacement battery every 5 years. Research from Gambia found that light from Solar Suitcases gave health workers increased confidence to manage complications, more autonomy over the quality of care and greater self-efficacy. It also enabled health workers to use both hands when providing emergency care and improved sanitation and infection control measures in health facilities (Eanelli 2019). Further research studies are ongoing to evaluate the impact of Solar Suitcases (Cohen 2018; Rokicki et al. 2019; We Care Solar 2020).

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need for escalation of care for women with hyper- or hypo-tension (Cradle Trial 2020; Vousden et al. 2018). Evaluation of the Cradle VSA Device (Nathan et al. 2018) showed that it was easy to use, accurate and perceived positively by health workers. Women and their families reported that the traffic lights enabled a better understanding of their health. It encouraged them to attend their appointments and accept treatment. The Cradle VSA Device is an example of a frugal innovation that has potential to aid midwives in detecting problems, make appropriate decisions and improve outcomes for women and their newborns.

### Case Study in Innovation for Midwifery Practice: The KangaWrap Project

Mothers have carried their babies in cloth wraps for centuries. Kangaroo mother care (KMC) is one of a suite of innovations in maternal and newborn care that could save millions of lives by 2030 (Batson 2016). KMC for premature babies in hospitals started in Colombia in the 1970s (Simkiss 1999) and is now recommended by the World Health Organization (WHO 2015) as a key intervention to improve pre-term birth outcomes.

In 2011 research by midwives in England demonstrated that KMC using a cloth wrap for pre-term or low-birth-weight babies in the postnatal ward setting was highly valued by parents, reduced the length of stay in hospital and improved exclusive breastfeeding rates (Gregson and Blacker 2011). However, parents found the wrap, which had been designed for baby-carrying rather than facilitating KMC, heavy and hot. Therefore, the team set out to develop the ‘KangaWrap’ (Fig. 9.4), a lighter, cooler option. Made from Fair Trade cotton, the wrap not only promotes KMC but provides an income for women producers who might otherwise be exploited or unemployed. The wrap is now widely sold to hospitals, service users, retailers and baby-sling libraries, and the profits are used to fund maternal and child health care in developing communities through charities such as Christian Aid and Asha India (Kangawrap 2020; Christian Aid 2020).

Following the success of the Kangawrap, the same team of midwives developed the ‘KangaWrap Kardi’, a simple garment to help facilitate KMC in the operating theatre after caesarean section and when women are confined to bed in the postnatal ward (Gregson et al. 2016). A further research study found a trend towards increased breastfeeding rates at 48 h and 6 weeks when using the KangaWrap Kardi. The team has also developed a popular video on ‘Baby friendly caesarean section birth’ (Maidstone and Tunbridge Wells NHS Trust 2016), available on YouTube, demonstrating how to achieve KMC in the operating theatre. The team has been invited to share their knowledge and skills across Europe, Africa, Asia and the Middle East.

This example of reverse innovation (an approach developed in a low-resource setting and subsequently adopted in a high-resource setting) by midwives not only improves outcomes for newborns but benefits three groups of women; those giving birth, those making the wraps and recipients of maternal and child health in low-resource settings, thus contributing to gender empowerment. The project also had a positive impact on the satisfaction of the midwives and other staff involved and KMC reduced costs for the health service with shorter stays in hospital (RCM Midwives 2012).

### 9.4.2 Innovations in Midwifery Education

Creative and innovative teaching methods are an essential part of student-centred learning; they accommodate students’ different learning styles and foster creativity in future practitioners (McCormack et al. 2014). Chapter 4 of this book, dedicated to midwifery education, contains a
9.4 Innovations for Midwives and Midwifery

9.4.2 Comprehensive Table of Education Models, Technological Advances, Innovations and Instructional Technologies in Midwifery Education

Complementing that, a few educational innovations will be explored here in greater detail.

9.4.2.1 E-Learning and Mobile Apps

E-learning is cited by WHO (2018) and UNFPA (2019) as an example of innovation in midwifery education. E-learning can enable health workers to stay in their workplaces whilst learning, thus avoiding the service-gaps of traditional classroom-based teaching. It is a flexible and low-cost method of education that is user-centred and easily updated; however, it requires motivation and digital literacy from the learner and can be demanding for those providing the education (Rugeri et al. 2013). Also, in reality not every midwife has access to a smartphone, tablet or computer; therefore, over-reliance on digital learning can increase inequalities and contribute to ‘digital exclusion’ and ‘digital poverty’ (PSE 2020). Even those with access to the requisite technology may not know how to use it. Gudgeon (2018) suggests that midwives may become disempowered and disillusioned when their working environment does not support and enable them to embrace the digital help available. Although the UK’s standards of proficiency for midwives (NMC 2019) include digital skills and technological literacy as essential, these are not part of international midwifery competencies (ICM 2019a).

Arbour (2018) provides a comprehensive pocket guide to mobile applications for maternity care and midwives, mainly developed in the USA; however, she cautions that midwives can become overwhelmed with so many applications available. She suggests ensuring that apps are peer-reviewed or developed by professional sources, to practice using an app and learn its functionality, to verify the accuracy of any tools on the app (e.g. a pregnancy dating calculator), and to ensure that reliance on apps does not replace interprofessional collaboration. A description of e-learning and links to innovative mobile apps for midwives and service users can be found in Chapter 4 of this book.

9.4.2.2 Low-Fidelity Simulators for Low-Dose High-Frequency Training

Simulation is most effective within low dose, high frequency (LDHF) training, an innovative approach that employs short, targeted learning by simulation ‘on the job’ at repeated intervals, reinforced by structured practice settings in the workplace (Jhpiego 2013). This promotes maximum retention of clinical knowledge, skills, and attitudes (LGH 2020). A randomised controlled trial in Nigeria found that, when compared to traditional off-site lecture-style training, simulation-based LDHF training and mentoring in basic emergency obstetric and newborn care was more effective at improving health workers’ skills acquisition and retention (Ugwa et al. 2020). However, the cost of simulators can be prohibitive for midwifery education institutions.

Laerdal Global Health (LGH) has developed a range of low-fidelity simulators and other products to help train and equip birth attendants and

Fig. 9.4 Annie providing KMC to her pre-term son with a KangaWrap (used with permission)
to save lives (LGH 2020). ‘MamaNatalie’ is used in ‘Helping Mothers Survive’ training programmes across 65 countries, a partnership between Jhpiego and LGH that aims to build capacity of all health workers who care for women and newborns on the day of birth and beyond. ‘NeoNatalie’ is used for ‘Helping Babies Breathe’, a newborn resuscitation training programme by the American Academy of Pediatrics, based on WHO guidelines. More than 4000 of these simulators have been donated to LGH’s partners in low-resource settings through the ‘buy one, gift one’ scheme. When one birthing simulator is purchased for use in a high-income setting, one is donated to support the ‘Helping Mothers Survive’ initiative (LGH 2020). These low-fidelity simulators are supported with a range of training and therapy tools to help health workers detect and/or treat birth asphyxia (LGH 2019).

9.4.2.3 Educational Games

The use of creative teaching methods, such as games, in professional education can be motivational and enhance learning of the multiple skills and concepts needed for real-world situations; they can also encourage deeper learning by engaging the right side of students’ brains (Starbuck 2006; Paz 2017). Bartels (2017) suggests that games are serious teaching tools that represent an innovative approach to teaching; they are most effective when thoughtfully designed and carefully analysed after playing and can be used for four basic purposes: discovery of new knowledge, analysis, training and education. Bartels recommends being clear about the game’s objectives, choosing carefully the environment in which the game will be played, considering the players and their roles, and having a clear set of rules that mimics the processes and constraints of the system under study.

Games have their place as an innovative teaching method for midwifery. Maclean and Laisser (2020) advocate that games are cost-effective, suitable for a number of different settings, promote critical thinking and behavioural change and allow midwifery students to learn from their mistakes without endangering lives.

The Charity ‘Hands on for mothers and babies’ has produced the board game ‘Walking with Mrs X’ based on the film ‘Why Did Mrs X Die, retold?’ (see Chapter 2 of this book). ‘Walking with Mrs. X’ provides a stimulating, highly interactive and exciting approach to learning about, and promoting, safer childbirth in many different countries and contexts. An earlier version of the Mrs. X game is still available as part of WHO’s Foundation Module for Safe Motherhood. WHO’s (2008) midwifery education modules also include games to assist learners in managing post-partum haemorrhage, eclampsia and infection. Most recently, a series of games have been developed by the Lugina Africa Midwives Research Network (LAMRN) including a game to improve midwives’ use of the partograph for charting progress in labour, a game called ‘Crisis’ to enhance knowledge about obstetric and neonatal emergencies and another to promote respectful care (Maclean and Laisser 2020; Lavender et al. 2019).

Games add fun to learning and enable student-led discovery (Marshall 2017; Baid and Lambert 2010). However, they must be properly evaluated and any potential actions implemented if their effectiveness is to be fully realised (Bartels 2017; Maclean and Laisser 2020).

9.4.2.4 Films

Films are not new; however, they can offer an innovative solution to the delivery of midwifery education and health worker training where there are barriers to learning such as low levels of literacy, language barriers and lack of transport (McCarthy 2017). Hall (2016) describes how films from the White Ribbon Alliance were used in the UK to teach student midwives about dignity and respectful maternity care. Teaching resources, such as films, that use real-life scenarios can help students tap into tacit knowledge and develop a deeper understanding of their own behaviours and the impact of these in practice (Dewar 2012).

Medical Aid Films (MAF) is a charity that uses film to empower health workers and communities about maternal and child health. They
have produced a large number of films useful for midwifery education in many different countries, contexts and languages. Global Health Media also has an extensive collection of videos of real-life action to meet the learning needs of midwives and other health workers. The White Ribbon Alliance, a movement for reproductive, maternal and newborn health rights, also has some excellent films useful to midwifery educators.

9.4.2.5 Interprofessional Education for Interprofessional Working

Working collaboratively as part of the interprofessional healthcare team is an essential competency for midwives (ICM 2019a). However, such collaboration may be hindered by different professional cultures and stereotypes, physical distance, poor communication, gender inequity, different uses and understanding of language and poor knowledge of each other’s roles and scope of practice (Romijn et al. 2017; Aquino et al. 2016; WHO 2013b). Innovative approaches are therefore essential to address these barriers and to prepare midwives for interprofessional working. WHO (2010) cite interprofessional education (IPE) as an innovative strategy to bolster the global health workforce and to prepare health workers for interprofessional working. The Centre for the Advancement of Interprofessional Education (CAIPE) defines interprofessional education as ‘occasions when two or more professions learn with, from and about each other to improve collaboration and the quality of care’ (CAIPE 2002).

PROMPT (PRactical Obstetric Multi-Professional Training) is an example of an innovation in interprofessional learning for midwives, obstetricians and others in the maternity care team. It started in the UK in 2006 when training for obstetric emergencies as a team was noted to significantly reduce hypoxic brain injuries and injuries after shoulder dystocia and to improve the management of emergency caesarean sections (PROMPT 2020). PROMPT has now developed a range of training packages, and the innovation has been scaled up across the UK and in many other countries and contexts, including Sierra Leone and Zimbabwe. It is cited as an example of best practice in multi-professional obstetric training (NHSE 2016) and has been shown to improve maternal and foetal outcomes as well as saving money for health systems through reductions in litigation (PROMPT 2020).

Case Study in Innovation for Midwifery Education: Midwifery Coordination Alliance Team (MCAT) Meetings in Cambodia

In Cambodia, giving birth is traditionally known as ‘chlong tonle’ or ‘crossing the river’, a dangerous activity that can go badly wrong. In recent years, Cambodia has made impressive improvements in maternal and neonatal mortality (MOHC 2015) and has strengthened its midwives through a number of initiatives including an international midwifery association twinning partnership (RCM 2015). Recent changes in legislation mean that continuing professional development is now a mandatory requirement for midwives to renew their professional licence (Law et al. 2019) but, in the past, there was little in-service training available for midwives (URC 2019). With support from development partners, innovative multidisciplinary MCAT meetings have been taking place every quarter across all areas of Cambodia where every midwife meets with others to learn practical skills, share their experiences and receive supportive supervision (CARE Cambodia 2016). The MCAT meetings, which aim to improve teamwork, relationships and communication and to clarify roles and responsibilities, have changed midwives’ and other health workers’ ingrained and widely accepted practices and built their capacity to solve their own challenges. MCAT meetings have subsequently been scaled up nationally and adopted by the Cambodian Ministry of Health (URC 2019).
9.4.3 Midwives’ Associations as Innovators

Professional associations have a role in promoting and diffusing innovations (Swan and Newell 1995; NAS 2005). Through bringing members together in meetings, conferences and other forums, professional associations can nourish new ideas and innovations and foster interprofessional collaboration (NAS 2005). Umbrella organisations of professional associations also have a role in promoting innovation; for example, the International Confederation of Midwives’ Young Midwife Leader programme challenges young midwives to create innovative projects to address global health challenges (ICM 2019b). More information about midwifery associations can be found in Chapter 6 of this book.

Midwife twinning projects are an innovative method of empowering midwives and strengthening midwives’ associations; in particular, the reciprocal aspect of twinning is considered to be innovative (Cadée et al. 2013; Ireland et al. 2015). ‘twintowin’ is an innovative social enterprise created by midwives that provides made-to-measure support to organisations and individuals that want to start a Twinning project (twintowin 2020). The project has developed a mobile app for twinning with support from the WeObservatory for eHealth (WeObservatory 2015). Midwives’ association twinning is described in detail in Chapter 15 of this book.

Case Study of a Midwives’ Association as an Innovator: Online Voting in Bangladesh

Midwifery is a new profession in Bangladesh. In 2017 the Bangladesh Midwifery Society (BMS) entered into an international twinning partnership with the Royal College of Midwives (RCM) in the UK. The partnership plan included development of a new membership data management system for BMS, and delivery of a democratic election for new executive committee members, the first since the organisation was founded. Working with a local digital technology consultant in Bangladesh, and with the RCM’s data analyst in the UK, BMS developed a new online membership database which allows members to join and pay their membership fees using a mobile phone. The database, using a member’s phone number as their unique identifier, was designed to include a voting function so that members could vote on any society matter remotely from a mobile phone or other device. The first remote election of officers was held in September 2018 and was hugely successful, enabling midwives from all over the country to vote democratically for their chosen leaders. It saved significant costs as every member was able to vote and did not have to travel to the capital city to do so. It was the first known example of online voting for any purpose in Bangladesh, catching the interest of news media and government. Thus, midwives led the way in a technological innovation.

9.5 Lessons in Midwifery Innovation from the COVID-19 Pandemic

At the time of writing, the world is in the midst of the COVID-19 pandemic. This has certainly posed many challenges for midwives and for the wider health sector but has also provided opportunities for innovation. Digital communication can overcome physical distancing restrictions (Farao 2020) and provide opportunity for sharing information with large numbers of people en masse. However, an ‘infodemic’ can also occur during a pandemic, where health professionals become saturated with large amounts of data (Zaracostas 2020). Midwives need accurate information to reduce the confusion caused by fear-based rhetoric broadcast on social media (O’Connell et al. 2020).
Midwives are at the core of the response to the pandemic (Bick 2020) and, around the world, have responded in innovative ways to challenges posed by COVID-19, offering video consultations and online clinics for women, hosting antenatal clinics in football stadiums, developing antenatal education videos accessible on popular social media sites and facilitating antenatal care groups via Zoom (Stephenson 2020; Furuta 2020). In addition to the many challenges, COVID-19 has also provided opportunities for innovation in midwifery education. In at least one setting, COVID-19 caused rapid digitalisation of curriculum and teaching, achieving more progress in the digitalisation of midwifery education in a few months than in the last decades (Luyben et al. 2020). In some places, COVID-19 has given student midwives additional clinical learning opportunities in interprofessional teams, thus enhancing their education (Luyben et al. 2020).

Professional Midwives’ Associations have also demonstrated innovative responses to the pandemic. For example, in the UK the Royal College of Midwives formed an immediate collaborative partnership with the Royal College of Obstetricians and Gynaecologists. Working with an expert clinical advisory group and several midwifery professors, they provided rapid evidence reviews and clinical guidance to inform the required swift reconfiguration of maternity services to ensure that women and their families continued to receive high-quality care. In Bangladesh, where the supply of personal protective equipment for midwives was problematic, the Bangladesh Midwifery Society (BMS) joined forces with a woman’s organisation to sew washable masks for midwives. The masks, displaying the BMS logo, were distributed to midwives across Bangladesh and came with instructions for use, plus information about joining the association and accessing online education resources. This initiative had the additional benefits of providing an income for the women manufacturing the masks and building stronger relationships between BMS and the women’s development sector.

9.6 Challenges in Innovation for Midwives

McKellar et al. (2009) highlight that a negative culture in midwifery practice can make change and innovation difficult. They suggest that midwives may experience grief when not able to practice according to the ideals of their profession. This grief feeds negative workplace cultures and may be fuelled by the frustration, exhaustion and stress resulting from changes and innovations that have been introduced without proper evaluation of their impact on midwives’ workload and experiences. This resonates with the WHO’s (2016b) ‘Midwives Voices, Midwives Realities’ report which showed that midwives from across the world were frustrated by the realities they experience. Additionally, midwives knew what changes and innovations were required to improve the quality of care for women, but their voices were not being heard. This was attributed to gender discrimination, disrespect and lack of status. Where midwives do develop good innovations, these may not be scaled up because of midwives’ lack of influence at policy level and their lack of power to influence widespread diffusion and adoption of innovations.

Identifying existing innovations can prove difficult for midwives as, if they have been published, this may be in sources from many different disciplines, making the literature searches complicated (Leyersdorff et al. 2013). Technological innovation has the potential to improve global health; however, it also brings new challenges, such as criminal activities linked to cyber and biological weapons, piracy of medical devices, fraud and theft of personal data (Ahluwalia et al. 2018). Poor regulation, in health and other sectors, also hampers innovation. It may be outdated or irrelevant, thus becoming an unnecessary burden, or may be too
9.7 Turning Ideas into Innovations

Health innovation is often described as linear, or as a cycle with different phases such as identifying needs and challenges, developing ideas for solutions, testing ideas, analysing solutions and supporting implementation (CHI 2016). Such linear approaches may be unhelpful and inefficient. In reality, health innovation is almost never straightforward, and the different steps overlap each other in complex ways (Gutiérrez-Ibarluzea et al. 2017; Nolte 2018). However, use of the innovation cycle may be helpful to consider how midwives might turn their own ideas into innovations.

When identifying needs and challenges, a stakeholder analysis is a good starting point as collaboration with all stakeholders is important at every stage of the innovation process (Ahluwalia et al. 2018). An example of a stakeholder analysis tool is given in the additional resources for reflection and study. Remember that collaboration may be required with stakeholders outside of health care (Leyersdorff et al. 2013) and ensure that service users participate at every stage of the project. Collaborators on the production of an innovative toolkit to reduce caesarean section rates highlighted the importance of co-production in innovation and of finding in-house solutions when change is needed (Brodick et al. 2011). Action research can provide a helpful framework for ensuring collaboration for innovations and change (McKellar et al. 2009; Kemp et al. 2018).

It is important to undertake a literature search to identify whether a similar idea or innovation already exists; this may be in a different field. Hospital, university and professional association libraries can help with literature searching. Next is the development of ideas for solutions; again, there may be a need to look outside of midwifery and health care for the solutions needed. Lateral thinking tools such as Edward de Bono’s (2016) ‘Six Hat Thinking’ can help with finding creative approaches. When testing ideas, the people using the innovation must be the ones to test it out, and such testing must be done in real-life situations. All stakeholders should be consulted when analysing solutions; often the people most crucial to the success of an innovation are not the midwives themselves. For example, Chamberlain (2008) describes the importance of involving security guards in a maternity quality improvement project in Uganda. The last stage, supporting innovation, relies on the success of every other stage in the process. Attention to detail, getting the governance right, having the right people on board and communicating clearly will make all the difference.

Unfortunately, few healthcare innovations are successfully implemented, scaled up or sustained, and therefore, few produce real change (Zietmann et al. 2019; Geerligs et al. 2018). Côté-Boileau et al. (2019) argue that an additional 3Ss (spread, sustainability and scale-up) must be considered alongside the stages already described. The ‘Diffusion of Innovation Theory’ (Rogers 2003) describes how some people are more ready to adopt innovations than others. Understanding this theory and developing strategies to get the least-willing adopters on board may be important in sustaining and scaling-up midwifery innovations.

9.8 Monitoring and Evaluation of Innovations

Monitoring and evaluation are vital to the success of innovation. Regular monitoring of implementation activities gives assurance as to how the innovation is being delivered. For example, does the innovation function consistently as it should? Do the realities of practice lessen the functionality of the innovation? Is the content and the delivery of the innovation pitched correctly to get the intended result? How well are the users of the innovation delivering it? Conversely, evaluation is a periodic, in-depth analysis that attributes some output, outcome or economic value to the innovation; for example, is the intervention being used and by whom? Has it led to behaviour change? Is it cost-effective compared to existing services?
What impact is the innovation having (WHO 2016c)? Allocating sufficient budget and expertise for monitoring and evaluation is essential during the planning phase (MAMA 2018; Nolte 2018). However, it is rare to have sufficient emphasis on monitoring and evaluation (Cadée et al. 2013). In the UK, consultant midwives have a specific remit for research, evaluation and planning new services (Cooke 2018); this role could support midwife innovations in the future.

9.9 The Future of Innovation by and with Midwives

As midwives already know the solutions to providing high-quality maternity care (WHO 2016b), they must be at the table with health innovators and entrepreneurs as they design new approaches to health care (Langway 2017). High-quality midwifery leadership is essential in supporting innovation (NHS England 2016). Byrom et al. (2011) describe transformational leadership in which, through trusting her colleagues, a midwife leader can build a virtuous circle of organisational trust. This creates a spirit of positivity which allows creativity and innovation to flourish. Social franchising, where midwives can own and operate their own practices supported by a clinical franchise (e.g. promoting reproductive health and family planning services), may provide a way forward for midwifery innovation and empowerment (Krubiner et al. 2016).

Collaboration is essential, especially with maternity service users and beneficiaries. This will enable the contextual suitability of innovations and allow for the democratisation of health technology which is a key for achieving universal equitable health care (Ahluluwalia et al. 2018; Mutsvangwa 2018). Guy’s and St. Thomas’s Charity (2020) set out five principles for involving people in health innovation, listed in Table 9.3.

Finally, supporting innovation to strengthen global midwifery and contribute to the achievement of global health goals can only happen with sufficient funding for innovations and where global markets support innovation by competitive pricing and sustained production (WHO 2018).

### Table 9.3 Five principles for involving people in health innovation (Guys and St. Thomas’ Charity 2016)

| 1. Experts are everywhere. Listen intently |
| 2. Balance leadership with sharing power |
| 3. Go to where people are and use a shared language |
| 4. Involve at all stages: think ‘who’, ‘how’ and ‘when’? |
| 5. Build in appropriate time and resources on all sides |

### Key Messages

#### Principles

Innovation by midwives and for midwifery services has the potential to improve efficiency, effectiveness, quality, safety and/or affordability of maternity care. However, many innovations are not sustained in the long term. There is a supportive policy environment for innovation, and there are interesting examples from practice, education and midwifery associations across the world. Collaboration with all stakeholders, especially midwifery service users, at every stage of the process is a key to success along with robust monitoring and evaluation.

#### Policy

Innovation is needed to reach the health-related SDGs and to strengthen midwifery for the future. Global health policy supports innovative approaches to developing midwifery education, regulation and practice, especially for fragile and vulnerable populations. Social innovation and new forms of partnership across different sectors are encouraged and will require sufficient funding and support from global markets. Future innovations must be responsible. Midwives must have a seat at the table when new approaches are designed.

#### Practice

Innovation has the potential to transform midwifery practice and benefit midwives, those who work with midwives and others from different disciplines. Responsible innovation in health demands that those who will use and benefit from the
innovation must be involved at every stage of the design and implementation. Innovations should be targeted at the populations who need it most. Digital innovations can make high-quality midwifery care more accessible for those with digital access. Midwives who want to turn their ideas into innovations may find the five value domains of responsible innovation to be a helpful framework.

Additional Resources for Reflection and Further Study

Read ‘The art of involving people in health innovation: lessons from the frontline’ by Guy’s and St. Thomas’ Charity https://www gstcharity.org.uk/what-we-do/our-strategy/convene/art-involving-people-health-innovation. Reflect on a health innovation that has been introduced in your workplace. To what extent were the ‘five principles for involving people’ followed in the introduction of that innovation? How could you use these five principles if you were involved in developing a midwifery innovation in the future?

Download a free paper copy (or buy a boxed set) of the board game ‘Walking with Mrs. X’ from Hands on for Mothers and Babies http://www.hofmab.com/board-game. Consider how you could use this with your colleagues or students to consider the barriers that women in your community or country face in accessing high-quality maternity care and how these might be overcome.

Reflect on your own digital competence. If you feel comfortable with technology and have access to it, explore some of the applications and resources mentioned in this chapter and in Chap. 4. How can you help your colleagues to improve their digital competence? If you feel digitally excluded, consider how you can address this to improve your confidence in using learning and practice technologies and innovations.

Consider whether high-frequency low-dose training could improve professional education in your workplace and familiarise yourself with some of the low-fidelity simulators developed for this purpose.

This chapter has identified that collaboration with all stakeholders is essential for successful innovation. Download a free resource on stakeholder analysis here https://improvement.nhs.uk/documents/2169/stakeholder-analysis.pdf and use it to identify the stakeholders for any idea that you might wish to develop into an innovation.

Look at MAF films at https://www.medicalaidfilms.org/watch-2/—there is an MAF film about the Cradle VSA device and many other topics of interest to midwives. Consider how you might use these resources in your practice or teaching.

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