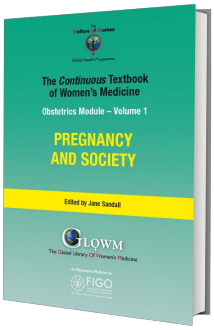
This chapter should be cited as follows:
Chamberland-Rowe C, Lawford K, *et al*, *Glob. libr. women's med.*,
ISSN: 1756-2228; DOI 10.3843/GLOWM.415573



The Continuous Textbook of Women's Medicine *Series* **– Obstetrics Module Volume 1**

PREGNANCY AND SOCIETY

Volume Editor: Professor Jane Sandall*, King's College, London, UK*

Chapter

Who Provides Maternity Care? Variations in the Maternity Workforce

First published: February 2021

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INTRODUCTION

All countries face a common maternity workforce goal: to develop an integrated and collaborative network of maternity care workers who are equipped and supported to achieve effective and cost-efficient maternity care. A country's income level can influence the degree and shape of the challenges faced in the pursuit of this goal, as well as the resources, policy levers, and incentives at a country's disposal to address these challenges.

In this chapter, we provide an overview of the health workforce trends that shape the provision of maternity care. We begin by highlighting the importance of the health workforce to achieve improved maternal health outcomes. We then provide a series of internationally recognized definitions for the cadres that provide maternity care. Once we have outlined *who* provides maternity care, we explain *how* the maternity workforce is configured into different models of care and scopes of practice across contexts. Finally, we deploy the Tanahashi framework for Health Service Coverage[1] to explore *what* maternity workforce trends are influencing effective coverage of maternity care across four dimensions: availability, accessibility, acceptability, and quality.

Throughout this text, we endeavor to recognize the contribution of all cadres of health workers in the provision of maternity care. In line with international guidance (see Box 1), this chapter also presents midwifery as the primary cadre responsible for low-risk maternity care. Highlighting the foundational contribution of midwifery allows us to compare and

contrast the integration of this profession into maternity care systems across contexts, and to explore the gendered power dynamics that persist within these systems.

Box 1 International guidance on midwifery-led maternity care

Midwives that are appropriately educated and regulated, based on standards set forth by the International Confederation of Midwives, have the competencies required to deliver 87% of maternity care.[2] In this chapter, we conform with the approach adopted in the State of the World's Midwifery Report:

Starting from the premises that pregnant women are healthy unless complications, or signs thereof, occur, and that midwifery care provides preventive and supportive care with access to emergency care when needed, [Midwifery 2030] promotes woman centered and midwife-led models of care, which have been shown to generate greater benefits and cost savings than medicalized models of care.[2]

A 2016 Cochrane review by Sandall and colleagues[3] compared the morbidity and mortality, effectiveness and psychosocial outcomes of midwifery-led continuity of care models, with other models of care – including obstetrician and family physician-provided care. The authors found that birthing people at low risk of obstetrical complications who accessed midwife-led continuity of care models: (1) experienced lower rates of obstetrical intervention; (2) were more likely to be attended by a known midwife; (3) did not incur any additional risk of complication or adverse maternal or neonatal health outcomes; (4) displayed higher rates of satisfaction; and (5) demonstrated cost-saving effects compared to other models of care. Accordingly, the authors deemed that: *"most women should be offered 'midwife-led continuity of care'. It provides benefits for women and babies and we have identified no adverse effects. However, we cannot assume the same applies to women with existing serious pregnancy or health complications, because these women were not included in the evidence assessed".*[3]

The National Institute for Health and Care Excellence (NICE) Guidelines on intrapartum care for healthy women and babies[4] reinforce these findings, stating that midwifery-led units offer lower rates of interventions, without any difference in neonatal outcomes compared to obstetrical units. As a result, these guidelines recommend midwifery-led units as a particularly suitable setting for both nulliparous and multiparous low-risk birthing women.[5] The 2018 WHO Recommendations for Intrapartum Care for a Positive Childbirth Experience affirm midwifery services as influencing positive childbirth experiences and recognize the midwifery workforce as effective professionals in maternal and child health programs.

WHY IS THE HEALTH WORKFORCE IMPORTANT FOR THE ACHIEVEMENT OF TARGETED MATERNAL HEALTH OUTCOMES?

Globally, approximately 80% of birthing people deliver with a skilled attendant, such as a doctor, nurse, or midwife.[6] Despite these gains, severe inequities are revealed when we disaggregate these global averages and account for income groups. [Throughout this chapter, we use the term gender-inclusive term "birthing people" to recognize gender diversity within the birthing population. We have, however, maintained the original terminology used in direct quotations. Some of these quotations, therefore, refer to "women" and/or "mothers".] While nearly all birthing people in high-income countries (HIC) deliver with skilled personnel, only 70% of birthing people in low- and middle-income countries (LMIC) access skilled intrapartum care.[7] Importantly, 98% of global maternal deaths would be preventable if unwanted pregnancies were prevented, skilled birth attendance was provided, and obstetrical complications were managed through quality referral systems.[8,9,10,11] Furthermore, 83% of all maternal deaths, neonatal deaths, and stillbirths could be prevented through universal scale-up of midwifery with a scope of practice encompassing both family planning services and maternal and newborn interventions.[12]

The interventions and systems required to improve maternal mortality and morbidity, including the development of a fit-for-purpose maternity workforce, have been identified, have demonstrated high return on investment, and are readily available in many HICs.[2,13,14] These lingering disparities, therefore, present a moral imperative to the global community.

Van Lerberghe and colleagues[15] outlined a common pathway to health system strengthening and improved maternal

health outcomes through four sequential actions:

1. *'Extension of a close-to-client network of health facilities, resulting in improved access to and uptake of facility birthing and hospital care for complications;*
2. *Scale-up of the workforce providing professional birthing care to respond to the growing demand;*
3. *Reduction of financial barriers to access to further enhance uptake of care; and*
4. *Attempts to improve quality of care.'*[15]

This sequence of progress aligns with current global focus on universal health coverage, which encompasses increasing coverage of essential interventions, broadening the package of services offered, and ensuring financial protection.[2] This common path also acknowledges the importance of accounting for not only availability and access, but also the acceptability and quality of care provided by the health workforce.

Globally, colonization has greatly and negatively affected various health outcomes of indigenous peoples, which has global implications on maternal and child health outcomes. See Box 2 for additional information on colonization.

Box 2 Legacies of colonization

Indigenous peoples experience heightened barriers to access maternity care and display significantly higher rates of maternal mortality and morbidity than the general population. In order to address these inequities, the United Nations have highlighted the need to (1) collect better disaggregated data to inform effective interventions; (2) tackle discrimination within and beyond the health and social care systems; and (3) render maternity care services more physically, financially, and culturally accessible.[16]

The *United Nations Declaration on the Rights of Indigenous Peoples*[17] draws attention to the negative impacts of colonization, in that the General Assembly is *"concerned that Indigenous Peoples have suffered from historic injustices as a result of, inter alia, their colonization and dispossession of their lands, territories and resources, thus preventing them from exercising, in particular, their right to development in accordance with their own needs and interests".*[17]

Colonialism is a process through which one group takes control of another group's lands, resources, and governance authority and maintains that group in a state of subordination based on beliefs of racial and cultural inferiority of the subordinated group.[18] Colonialism is underpinned by imperialistic ideas of expansion and the exertion of power for the sake of control and domination of the colonized lands. Canada, the United States of America, New Zealand, and Australia, for example, are all countries that are founded on the process of colonization. Colonization has aggressively and violently imposed patriarchal, gendered dichotomies, and Euro-western ideologies, epistemologies, and ontologies at the expense of indigenous peoples, which has resulted in the decimation – and sometimes complete erasure – of some indigenous peoples.

Colonization has also resulted in the dominance of the Euro-western biomedical model, which is significantly underdeveloped compared to the time-before-time practices of indigenous peoples. Colonizing countries have transplanted their knowledges, sciences, and histories onto indigenous lands at the expense of indigenous peoples. Colonizers have attempted to eradicate indigenous knowledge holders, medicine people, midwives, and others who contributed to individual and community well-being since time-before-time. The medicalization of maternity care and birth is a direct result of colonization.

Examples of decolonizing midwifery services: Six Nations Birthing Centre in Canada; Maori midwives in Aotearoa (New Zealand); and Aboriginal midwives in Australia.

Linking economic development, workforce densities and maternal health outcomes

Extant evidence reveals a significant positive correlation between a country's level of economic development and health workforce density.[19,20] In 2013, while HICs displayed an average combined workforce density of ten doctors, nurses, and midwives per 1000 population, this average workforce density changes to 4.3 for upper middle-income countries, 2.5 for lower middle-income countries, and 0.9 for low-income countries.[21] This relationship is attributed to a country's increased propensity and capacity to invest in health and workforce development as their gross domestic product per

capita increases.[19]

The relationship between economic development and workforce density sheds light on global disparities in maternal health when we consider this evidence in combination with studies that have found increased workforce densities to be associated with:

1. Higher rates of skilled birth attendance;[22,23]
2. Higher levels of quality of care;[24] and
3. Lower rates of maternal mortality and morbidity.[20,25,26]

As a result, workforce densities are a common target indicator used in the monitoring and evaluation frameworks of global health initiatives targeting improved maternal health outcomes (see Box 3 for examples of these initiatives).

Box 3 The Global Strategy for Women's, Children's and Adolescents' Health, 2016–2030[27]

In 2010, *Every Woman Every Child* established the Global Strategy for Women's and Children's Health as a final push toward the fulfillment of the Millennium Development Goals. The second iteration of this strategy, which is aligned with the Sustainable Development Goals, was governed by the vision of achieving *"a world in which every woman, child and adolescent in every setting realizes their rights to physical and mental health and well-being, has social and economic opportunities, and is able to participate fully in shaping prosperous and sustainable societies".*[27]

The strategy's objectives included ensuring universal access to sexual and reproductive health care services and rights. Acknowledging the critical importance of investments in the health workforce to the achievement of the strategy's objectives, the monitoring and evaluation framework for this strategy included sustainable development goal (SDG) indicator 3.c.1, which reflected the number of health workers per 10,000 population, by categories, geographic distribution, and place of employment. The strategy estimated that the global scale-up required to achieve a sufficient number of health workers to achieve targeted outcomes would involve an additional 675,000 nurses, doctors and midwives and 544,000 community health workers and other cadres of health professionals by 2035.

The strategy explicitly outlined a series of health workforce policies that were required to promote its successful implementation and ensure that health workers are supported and equipped to provide quality care, including:

1. *National health workforce management plans;*
2. *Adequate recruitment, training, deployment and retention of health personnel;*
3. *Accreditation and certification of health personnel;*
4. *Processes and guidelines to authorize rational redistribution of tasks among health workforce teams (task shifting);*
5. *Adequate managerial and leadership capabilities at all levels of the health sector;*
6. *Standards for supportive supervision of health personnel; and*
7. *Human resources frameworks for health-sector emergency management.*

WHO PROVIDES MATERNITY CARE?

In 2018, the World Health Organization, the United Nations Population Fund, United Nations Children's Fund, the International Confederation of Midwives, the International Federation of Gynecology and Obstetrics, and the International Pediatric Association released a joint statement[28] defining skilled health personnel providing care during childbirth, also known as skilled birth attendants (Box 4).

Box 4 Definition of skilled health personnel providing care during childbirth[28]

"Skilled health personnel, as referenced by SDG indicator 3.1.2, are competent maternal and newborn health (MNH) professionals educated, trained and regulated to national and international standards. They are competent to: (i) provide and promote evidence-based, human-rights-based, quality, socioculturally sensitive and dignified care to women and newborns; (ii) facilitate physiological processes during labor and delivery to ensure a clean and positive childbirth

experience; and (iii) identify and manage or refer women and/or newborns with complications.

In addition, as part of an integrated team of MNH professionals (including, in alphabetical order, anesthetists, doctors [such as obstetricians and pediatricians], midwives and nurses), they perform all signal functions of emergency maternal and newborn care to optimize the health and well-being of women and newborns.

Within an enabling environment, midwives educated and regulated to International Confederation of Midwives (ICM) standards can provide nearly all of the essential care needed for women and newborns. (In different countries, these competencies are held by professionals with varying occupational titles).”*[28]

While human resources, and the presence of a skilled attendant at birth, are critically important to maternal health, the full benefits of skilled birth attendance can only be achieved if skilled attendants have access to the skills, resources, and enabling environments that are required to deliver quality care. Accordingly, Lassi and colleagues[11] defined skilled birth attendance as:

> *'the process by which a pregnant woman and her infant are provided with adequate care during pregnancy, labor, birth, and the postpartum and immediate newborn periods, whether the place of delivery is the home, health center, or hospital. In order for this process to take place, the attendant must have the necessary skills and must be supported by an enabling environment at various levels of the health system, including a supportive policy and regulatory framework; adequate supplies, equipment, and infrastructure; and an efficient and effective system of communication and referral/transport'.*[11]

It should also be noted that health workers who fit within the international definition of a skilled attendant are not the only cadres of health workers involved in the provision of maternity care. In some cases, instability in fragile systems can preclude health workers who otherwise fulfill the competencies defined in this international definition from gaining the necessary regulatory recognition. Furthermore, in all settings, a number of supporting cadres, including nurses, auxiliaries, and lay health workers, are critical to the provision of a comprehensive package of maternal health services. Acknowledging that maternity care involves interprofessional collaboration, there is considerable international variability in: (1) models of maternity care; (2) the cadres involved in these models of care; and (3) the titles, roles, and scopes of practice that these cadres adopt within the organization of maternity care. The following glossary provides a list of various health worker cadres involved in the provision of maternity care (Table 1).

Table 1 Glossary of health worker cadres involved in the provision of maternity care.

Title	International definition
Midwifery	
Midwife	*“A midwife is a person who has successfully completed a midwifery education program that is based on the ICM Essential Competencies for Basic Midwifery Practice and the framework of the ICM Global Standards for Midwifery Education and is recognized in the country where it is located; who has acquired the requisite qualifications to be registered and/or legally licensed to practice midwifery and use the title ‘midwife’; and who demonstrates competency in the practice of midwifery.”*[29]
Indigenous midwife	Indigenous peoples who are trained as midwives and provide midwifery care to indigenous people, families, and communities. In some contexts, indigenous midwives are registered with a regulatory body but some are not registered. Some indigenous midwives are responsible to their particular indigenous community, like the indigenous midwives at Six Nations, Ontario, Canada.
Nurse-midwife	*“A person who is legally licensed/registered to practise the full scope of nursing and midwifery in her country”*[30]
Nursing	
Nurse	*“The nurse is a person who has completed a program of basic, generalized nursing education and is authorized by the appropriate regulatory authority to practice nursing in*

Title	International definition
	his/her country. Basic nursing education is a formally recognized program of study providing a broad and sound foundation in the behavioral, life, and nursing sciences for the general practice of nursing, for a leadership role, and for post-basic education for specialty or advanced nursing practice. The nurse is prepared and authorized (1) to engage in the general scope of nursing practice, including the promotion of health, prevention of illness, and care of physically ill, mentally ill, and disabled people of all ages and in all health care and other community settings; (2) to carry out health care teaching; (3) to participate fully as a member of the health care team; (4) to supervise and train nursing and health care auxiliaries; and (5) to be involved in research."[31]
Advanced practice nurse	*"A registered nurse who has acquired the expert knowledge base, complex decision-making skills and clinical competencies for expanded practice, the characteristics of which are shaped by the context and/or country in which s/he is credentialed to practice. A master's degree is recommended for entry level"*[32]
Physicians	
Obstetrician/ gynecologist*	*"Obstetricians and gynecologists are physicians who by virtue of satisfactory completion of an accredited program of graduate medical education, possess special knowledge, skills and professional capability in the medical and surgical care of women related to pregnancy and disorders of the female reproductive system. Obstetricians and gynecologists provide primary and preventive care for women and serve as consultants to other health care professionals."*[33] *Some general surgeons are also trained to provide surgical obstetrical care, including cesarean sections.
Family physician/ general practitioner	*"Family doctors are medical specialists trained to provide health care services for all individuals regardless of age, sex, or type of health problem. They provide primary and continuing care for entire families within their communities, address physical, psychological and social problems, and coordinate comprehensive health care services with other specialists as needed. Family doctors may also be known as family physicians or general practitioners. They differ from general doctors who may work in the community without further specialist training following medical school."*[34]
Anesthesiologist/anesthetist	*"Anesthesiology is the medical science and practice of anesthesia. It includes anesthesia for surgical, obstetric and trauma care, and areas of practice such as perioperative medicine, pain medicine, resuscitation, and intensive care medicine. An anesthesiologist is a qualified physician who has completed a nationally recognized specialist training program in anaesthesiology. In some countries, the term anesthetist is used instead of anesthesiologist."*[35] p.1
Auxiliary cadres	
Auxiliary midwife/ midwifery associate professional	*"A health worker assisting in the provision of maternal and newborn health care, particularly during childbirth, who possesses some of the competencies in midwifery but is not a fully qualified/licensed midwife."*[2]
Auxiliary nurse-midwife	*"A health worker assisting in the provision of maternal and newborn health care, particularly during childbirth but also in the prenatal and post-partum periods, who possesses some of the competencies in midwifery but is not a fully qualified/licensed nurse-midwife."*[2]
Maternity support worker	*"A Maternity Support Worker (MSW) is an unregistered employee providing support to a maternity team, mothers and their families. The MSW undertakes duties in a maternity setting, under the direction and supervision of a registered midwife, for which midwifery training and registration are not required. MSWs complement the care that midwives provide to mothers and babies."*[36]
Doula	*"a trained professional who provides continuous physical, emotional and informational support to a mother before, during and shortly after childbirth to help her achieve the*

Title	International definition
	healthiest, most satisfying experience possible."[37]
Community health worker	*"Community health workers provide health education and referrals for a wide range of services, and provide support and assistance to communities, families and individuals with preventive health measures and gaining access to appropriate curative health and social services. They create a bridge between providers of health, social and community services and communities that may have difficulty in accessing these services".*[38] Their roles include providing education regarding family planning and breastfeeding, delivering home-based preventative and curative care, and promoting uptake of maternal health behaviors and services.
Traditional birth attendant	A traditional birth attendant is *"a person who assists the mother during childbirth and who initially acquired their skills by delivering babies themselves or through an apprenticeship to other [traditional birth attendants]"* [39]

HOW IS THE MATERNITY WORKFORCE CONFIGURED?

Scope of practice and models of care

Models of care can be defined as *"the way healthcare services are designed and delivered".*[40] Sandall and colleagues[3] outline a typology of six principal models of care adopted in the provision of maternity care (Table 2).

Table 2 Typology of models of maternity care.[3]

Model of care	Definition
Midwifery-led continuity model of care	*"The midwife is the lead professional in the planning, organization and delivery of care given to a woman from initial booking to the postnatal period".* This model of care involves: *"continuity of care; monitoring the physical, psychological, spiritual and social well-being of the woman and family throughout the childbearing cycle; providing the woman with individualized education, counseling and antenatal care; attendance during labor, birth and the immediate postpartum period by a known midwife; ongoing support during the postnatal period; minimizing unnecessary technological interventions; and identifying, referring and coordinating care for women who require obstetric or other specialist attention".*
Team midwifery	*"[Midwives] provide continuity of care to a defined group of women through a team of midwives sharing a caseload".*
Caseload midwifery	*"[Midwives] aim to offer greater relationship continuity, by ensuring that childbearing women receive their ante-, intra- and postnatal care from one midwife or her/his practice partner".*
Obstetrician provided care	*"Obstetricians are the primary providers of antenatal care for most childbearing women. An obstetrician (not necessarily the one who provides antenatal care) is present for the birth, and nurses provide intrapartum and postnatal care".*
Family doctor-provided care	*"Obstetric nurses or midwives provide intrapartum and immediate postnatal care but not at a decision-making level, and a medical doctor is present for the birth".*
Shared models of care	*"Responsibility for the organization and delivery of care, throughout initial booking to the postnatal period, is shared between different health professionals".*

A health profession's scope of practice refers to *"what health professionals can (and cannot) do, to whom, where, and how".*[40] As is represented in Figure 1, health professions' scope of practice is shaped by a dynamic array of micro, meso,

and macro-level factors.[41] A health workers' scope of practice is often actively constrained as they move from what health professionals are trained to perform, to what they are allowed to perform within regulatory structures, to what they are enabled to perform within organizational environments. As a result, both theoretical and actualized scopes of practice shape the different roles within models of maternity care.

BARRIERS		ENABLERS
MACRO	Health care professional accountability/liability concerns	• Educating professionals and courts on changes to legislation that recognize the principles of shared care models
	Educational needs/requirements that inhibit professionals working to full or optimal scope	• Establishing practicums and residencies that foster inter-professional competencies • Post-licensure credentialing for continued competency development over the course of a career
	Rigid legislation/regulations	• Expanding adoption of more flexible legislative frameworks that can be interpreted at the local setting
	Payment models that do not support changes in scopes of practice	• Alternative funding (e.g., bundled or mixed payment schemes) to include all health care professionals and to be aligned with desired outcomes
MESO	Communication across multiple care settings	• Implementation and upkeep of electronic medical records essential for all respective health care professionals (and for patients themselves) to have timely access to the most up-to-date information on treatment and status
	Professional protectionism	• Representation of the interests of professions in the context of collaborative care arrangements and inter-professional standards/overlapping scopes of practice
	Accountability	• Broader application of collaborative performance measures and an overall quality assurance framework through involvement of accrediting bodies
	Availability of evidence	• Systematic monitoring and evaluation (with specific focus on inputs and outputs) to estimate cost incurred for introducing change and the long-term return on investments
MICRO	Professional hierarchies	• Change management team: a designated role for managing changes in scopes of practice and models of care
	Professional cultures (lack of trust and role clarity; job protectionism, turf wars, task escalation)	• Continuing professional development to cultivate team thinking and develop levels of trust around relative competencies • Team vision: to reinforce that the ultimate goal is the improved well-being of the patient; who provides the care is secondary to the quality and accessibility of services provided
	Communication among health care professionals	• Instilling group mentality: internalization of shared responsibility across health care professions • Scheduling of regular meetings for health care team members to consult on appropriate care strategies and problem-solving strategies; integrating information communication

BARRIERS		ENABLERS
		technologies • Co-location to have different types of health care professionals and services functioning in a shared space

Figure 1 Barriers and enablers: optimal scopes of practice within collaborative care arrangements at the macro, meso, and micro levels.[41]

Models of practice also inform the ways in which health workers enact their roles within maternity care systems. Models of practice reflect *"how health professionals undertake their scope of practice. Attention to these different models of practice can make more apparent the unique ways in which different healthcare professionals provide the same service".*[40] For instance, physicians and midwives adopt very different approaches to the provision of maternity care.

Historical data demonstrate that the integration and professionalization of midwifery represents an effective means of achieving reduced maternal mortality rates.[8,42,43,44] Despite the known benefits of midwifery integration into formal systems of care, successful implementation of midwifery-led continuity of care can present a number of challenges associated with establishing policy, regulatory, legal, and practice environments that support midwives' professional autonomy, and enable them to practice to optimal scope.[2,8,45] Fundamental differences between the philosophies and models of practice of midwives and physicians can also present obstacles to effective interprofessional collaboration between these two professions.[46,47] Furthermore, gendered workforce dynamics and the dominance of medicine that is ingrained in the formal structures of health care systems limit the recognition, status, agency, and integration of midwifery within the organization of maternity care. A case study from The Netherlands is presented in Box 5.

Box 5 Promising example of midwifery integration: case study of The Netherlands

Maternity care in The Netherlands is based on the principle that pregnancy and birth are fundamentally physiologic processes. This midwifery-led approach to maternity care was achieved through the development of consensus on the common goals and interests of consumers, policy makers, midwives, and the medical community.[48] The model established in the 1970s was characterized by a strong and independent midwifery profession, and educational programs that emphasize close cooperation between obstetricians and midwives, high rates of home birth, and minimal use of unnecessary obstetrical interventions.[49] The division of roles between independently practising midwives (who take care of normal pregnancy and childbirth) and obstetricians is defined in the List of Obstetric Indications (LOI). The LOI designates the most appropriate maternity care worker for birthing people with defined medical or obstetric conditions. As of 2013, more than 80% of all pregnant people began their maternity care with an independently practicing midwife.[49] Though, in recent years the number of conditions defined on the LOI has continually increased, which has resulted in more birthing people transferring from midwifery to obstetrical care. Additionally, The Netherland's once high home delivery rate has dropped from 40% in 1985 to 22% in 2010; a trend that is expected to continue. Indeed, the medicalization of childbirth has dramatically altered the Dutch maternity care landscape in recent years.[50] These trends have been attributed to cultural shifts, shifts in the midwifery workforce, and shifts in the gynecological workforce, which have eroded the once common interests of stakeholders within this system of maternity care (see De Vries and colleagues[49] for an excellent review of contributing factors) In response, midwives are establishing midwife-led and managed birthing centers alongside hospitals in growing numbers; whether or not this is a solution to the slow disintegration of the once enviable Dutch maternity care system remains unseen.[51]

Task shifting

Task shifting initiatives can involve: (1) substitution and delegation of tasks amongst existing cadres; (2) the creation of new cadres; or (3) the delegation to non-professionals.[52] These initiatives have proven to be effective means of remedying skill imbalances, workforce shortages and condensing workforce scale-up timelines.[52] See Box 6 for more

information about the World Health Organization's evidence-based recommendations aimed at optimizing health worker roles for maternal newborn health. Task shifting and sharing initiatives can, however, garner opposition from professional bodies due the struggle over jurisdictions within maternity care's system of professions,[53] and claims that it would affect patient care and patient safety.[54]

A narrative synthesis of task shifting in maternal and reproductive health in LMICs conducted by Dawson and colleagues[54] found that shifting and sharing clinical tasks can constitute a cost-effective way of increasing access to obstetric surgery, abortion, anesthesia, contraceptive and family planning services, and antenatal care without compromising quality of care and outcomes. Lay and community health workers have also proven to be particularly effective in delivering preventative maternity care intended to decrease the risk of maternal and neonatal morbidity and mortality.[55] The role of lay health workers in the maternity workforce varies as a function of a country's level of economic development. While their roles are largely constrained to health promotion, counseling, and support in HIC, their roles can encompass a broader range of services in LMICs. This broader range of services can include the distribution of supplements, contraceptives, and products, diagnosis and treatment of childhood illness, the management of uncomplicated labor, and referral of pregnancy and labor-related complications.[56]

Task shifting to auxiliaries and associates represents a longstanding practice in many contexts that supports midwives in their provision of maternity care. For example, in the United Kingdom maternity support workers (MSWs) are a well-established cadre in maternity care. Sandall, Manthorpe, and Mansfield[57] explain that a depleting obstetrical workforce and the need to free midwives' time for their extending clinical role has led to greater use of these support workers. MSWs are trained in clinical practice and perform some tasks that are typically performed by midwives.[58] Similarly, in The Netherlands, the maternity care assistant (MCA) role has been an integral facet of the Dutch maternity care system since the 1980s.[59] MCAs support Dutch midwives in caring for birthing people and newborns. Dutch MCAs are embedded within the client's family home. The MCA works in the client's family home to provide education, breastfeeding support, care for older siblings, and general household tasks for at least three hours a day for up to ten days. The MCA's position within the home and alongside the family has been associated with favorable maternal and infant health outcomes; if the MCA detects any possible health issues in the postpartum mother or infant she immediately conveys these concerns to the midwife.[60] Finally, in Ontario, Canada birth center aides (BCA) are employed by Ontario's two free-standing birth centers, located in Ottawa and Toronto. BCAs work in the birth centers 24/7, conduct clinical reception duties, provide client and family support, coordinate hospital transfers, ensure a safe and comfortable environment, and assist midwives in non-clinical duties.

A number of ethical considerations arise in the design of task shifting initiatives. In much of the literature, the value of these cadres in addressing workforce shortages rests on four factors. First, these cadres require limited training, which allows for expedient deployment compared to the time lag required to train more skilled professionals. Second, these auxiliary cadres represent cost-effective alternatives to highly-paid and highly-trained professionals. Third, the knowledge, skills, and scope of practice of these cadres can be tailored to local needs. Finally, given that these cadres are tailored to meet local needs and receive variable levels of accreditation, the transferability and portability of their skills is constrained, limiting their professional and geographic mobility.[61,62,63] Therefore, without careful consideration of their ethical ramifications, task shifting initiatives run the risk of subsidizing health systems through unpaid or underpaid labor, and of constraining the career advancement opportunities afforded to the health workers upon which they so heavily rely.

Task shifting initiatives are also not divest of potential gender and equity implications. For example, task shifting initiatives can unduly depend on women's labor that is expected to assume these tasks with minimal, if any, support and remuneration from the formal health system. Under these circumstances, these initiatives can perpetuate imbalances in the gendered division of labor, and further solidify the gender inequities present within the health workforce.[40,64,65]

Box 6 Optimizing health worker roles for maternal newborn health[39]

Optimizing health workers roles through the rational redistribution of tasks between cadres can serve to reduce access inequities and improve the cost-effectiveness of care systems. In light of the variable success of task shifting initiatives, the World Health Organization released a report[39] in 2012 detailing evidence-based recommendations

regarding which key maternal and newborn health interventions could be safely and effectively delivered by the various health worker cadres involved in the provision of maternity care. For example, the report deemed there is sufficient evidence to recommend the use of lay health workers to promote healthy behaviors and care-seeking.

The report acknowledged that the successful implementation of task shifting initiatives are highly dependent on local sociocultural and political contexts. Indeed, the report offers policy-makers a workbook to guide the evaluation, adaptation, and adoption of task shifting initiatives. The report also encourages policy-makers to consider the complementary actions that are required to support successful implementation of task shifting initiatives, including: (1) aligning regulations and scopes of practice; (2) providing appropriate training and supportive supervision; (3) establishing appropriate referral mechanisms; (4) securing adequate supply chains; and (5) providing commensurate remuneration and incentives.

WHAT MATERNITY WORKFORCE TRENDS ARE INFLUENCING EFFECTIVE COVERAGE OF MATERNITY CARE?

Building on the Tanahashi Framework for Health Service Coverage,[1] the World Health Organization has conceptualized effective coverage of essential interventions as a function of four interconnected health workforce dimensions: (1) availability; (2) accessibility; (3) acceptability; and (4) quality.[66] In the following section, we use this framework to structure our discussion of maternity workforce trends that shape systems' capacity to achieve effective coverage of essential maternity care interventions in line with the State of the World's Midwifery Report[2] (see Box 7) .

Box 7 State of the World's Midwifery[2]

In 2014, the United Nations Population Fund and the World Health Organization released the State of the World's Midwifery report.[2] The report presented Midwifery2030 as a strategy to promote the availability, accessibility, acceptability, and quality of midwifery personnel in support of the achievement of universal health coverage. The goals and actions proposed within the Midwifery2030 framework span all levels of the health system, including:

1. Creating an *enabling system environment* through supportive public policy, planning and funding;
2. Creating an *enabling professional environment* through quality education, continuous professional development, and appropriate professional regulation and association; and
3. Creating an *enabling practice environment* through effective resource management, supportive supervision, and seamless referral and collaboration between a team of health workers involved in the provision of person-centered maternity care.

Availability of the maternity workforce

While health workforce shortages represent a challenge at all income levels, LMICs with a high burden of maternal mortality face more acute shortages of maternity care workers who have appropriate training to perform essential maternal health interventions.[42] The dual burden of high population growth rates and limited health systems capacity in many low-income settings exacerbates the needs-based shortage of health workers through 2030. For example, between 2013 and 2030, the need for health workers, based on the SDG Index Threshold Density of 4.45 doctors, nurses and midwives per 1000 population (see Box 8), is set to increase by 42% in low-income settings, compared to a 6% increase in HICs.[21] The Index Threshold Density has been adjusted upwards since 2006 to reflect health workforce needs to meet the SDGs as well as providing important data targets.[67] These resource-constrained systems must display considerable workforce growth just to maintain rates of skilled birth attendance, and nearly insurmountable grown if they wish to improve these rates of coverage and achieve global development goals. Based on current trends, workforce growth is not projected to be adequate to meet these increases in need. As a result, the needs-based shortage of health workers in low-income countries is set to increase by 33% between 2013 and 2030, whereas all other income categories are set to decrease (but not completely alleviate), their needs-based shortage of health workers over the same time period.[21]

Many of the countries that display the highest burden of maternal mortality would require a considerable (5–10%), or even extraordinary (over 10%) yearly average exponential growth rate in their workforce in order to achieve this index threshold by 2030.[20]

Campbell and colleagues[68] outlined four strategies that have been deployed to increase the supply of health workers. From an international perspective, some countries, such as Cuba, train workers for export, and others practice international recruitment of skilled personnel. On the domestic front, task shifting, and the scale-up of domestic training capacity represent mechanisms to address shortages and improve the availability of skilled birth attendants. HICs have the necessary resources and incentives to make use of all of these strategies, often at the expense of the supply of health workers in LMICs. LMICs, however, do not necessarily have the necessary conditions and resources to attract international candidates, and must therefore recruit, train, and deploy domestic resources despite limited educational production capacity.

Beyond headcount, the availability of skilled birth attendants is shaped by the participation rates, activity rates, and practice patterns present within the workforce. The use of unadjusted headcounts can generate overestimates of available service capacity, since these estimates do not account for: (1) the presence of part-time employees within the workforce; (2) the time maternity care workers dedicate to non-clinical tasks; (3) the time that maternity care workers dedicate to other sectors of care; or (4) variability within and between cadres of maternity care workers in the volume and types of services provided. In order to remedy issues of availability, high levels of turnover, attrition, and absenteeism must also be addressed through comprehensive health workforce management strategies.

Box 8 Global targets and maternity workforce to population ratios

In 2006, the World Health Report[69] set 2.28 skilled health workers per 1000 population as a minimum threshold to achieve 80% coverage of skilled birth attendance. In order to establish a minimum threshold of health worker requirements for coverage of the broader range of services associated with universal health coverage and the achievement of the Sustainable Development Goals, the World Health Organization developed an SDG Index Threshold.[21] This threshold defines 4.45 doctors, nurses, and midwives per 1000 population as the minimum density of health workers required to attain a median level of achievement for a composite SDG index that weights twelve health targets based on their global burden of disease.

In 2016, the World Health Organization employed this threshold to estimate the needs-based health workforce requirements between 2013 and 2030 to achieve universal health coverage and the Sustainable Development Goals.[21] Supply projections indicate that between 2013 and 2030, the global health workforce will increase by 55% from 43 million to 67.3 million health workers. For the same time period, the global needs-based shortage of health workers is only projected to decline by 17% from 17.4 million to 14.5 million health workers.

The use of workforce-to-population ratios as thresholds to assess workforce sufficiency can present a number of benefits including their ease of use and understanding by decision-makers, their minimal data requirements, and their utility for international benchmarking and comparison. These ratios do, however, present a number of limitations. First, high-level ratios can mask geographic maldistribution and skill mix imbalances.[70] Second, normative thresholds assume that population health needs and service requirements are homogenous across contexts and time.[71,72] Adjacently, normative thresholds only reflect workforce availability, without accounting for variation in the configuration, productivity, and quality of the workforce across contexts and time.[62,71,73,74]

Recently, adjusted service target-based approaches to maternity workforce planning have emerged as a more robust methodology to assess alignment between current and projected workforce supply and population health needs.[72,75,76] This approach to maternity workforce planning involves a series of sequential steps:

1. Use evidence-based frameworks to define a list of key maternal health interventions;
2. Estimate the total service requirements associated with universal coverage of the identified interventions based on demographic and epidemiological data;
3. Allocate the service requirements across cadres with relevant scopes of practice;
4. Convert service requirements into a corresponding workforce capacity requirement for each cadre included in the

planning exercise; and
5. Compare workforce capacity requirements with projected workforce supply.

Accessibility of the maternity workforce

Barriers of access can often impede optimal utilization of the available health workforce. Access to maternity care is shaped by a number of key dimensions,[66] including:

1. *Spatial accessibility:* the geographic distribution of health workers, and the availability of appropriate transportation infrastructure;
2. *Temporal accessibility:* the proportion of time that health facilities are open and appropriately staffed;
3. *Physical accessibility:* the attributes of the physical infrastructure of health facilities, including whether they are disability-friendly;
4. *Organizational accessibility:* the strength of referral networks to connect patients with appropriate health workers; and
5. *Financial accessibility:* the formal and informal financial costs associated with the use of available services.

Achieving equitable access to maternity care requires policy development processes that make use of all available data to design a maternity workforce that is aligned population health needs (see Box 9). Misalignments between the geographic distribution of health workforce service capacity and population service requirements are reflective of trends in health worker mobility and migration. International migration of health workers results in net gains for high-income destination countries and net losses for LMIC. Furthermore, health worker mobility within countries results in a concentration of the available health workforce in urban settings, while their rural and remote counterparts face heightened challenges in the recruitment and retention of health workers.[2,22]

Box 9 Conducting a Sexual, Reproductive, Maternal, Newborn and Adolescent Health Workforce Assessment: A Handbook[77]

In 2015, the United Nations released a handbook[77] on conducting a sexual, reproductive, maternal, newborn and adolescent health (SRMNAH) workforce assessment, which it defines as:

'a process of convening and discussing policy on SRMNAH workforce issues [...] It helps a country understand who does what and where, and to explore why the workforce is configured in this way, including historical, financial and policy influences. It also provides a future projection and policy options to support workforce planning for a resilient health system.'[77]

The handbook explains that SRMNAH workforce assessments can and should be integrated into broader health workforce and health sector planning. These assessments are designed to answer the following research questions:

1. What is the appropriate SRMNAH workforce?
2. How is it best deployed to equitably deliver essential SRMNAH interventions at scale and quality? and
3. What (including costs) needs to be put into place to achieve universal access?

Organized into three phases, the assessment framework provides the key questions and core indicators to guide quantitative and qualitative data collection, analysis, and presentation. These assessments:

1. Gather information on existing policies, guidelines and regulation, and the current performance of the SRMNAH workforce;
2. Identify gaps in access and promising practices to improve performance; and
3. Formulate and test costed policy scenarios, with stakeholder engagement.

Guided by the Tanahashi framework for effective coverage,[1] the framework includes measurements of the availability (supply and skill mix aligned with population health needs), accessibility (spatial, temporal, physical, organizational, and financial), acceptability (age, gender, language, religion, social and cultural values), and quality (competencies, skills, knowledge and behavior) of care.

Acceptability of care provided by the maternity workforce

High levels of interpersonal communication, cultural competency, and credibility are of utmost importance in the provision of acceptable maternity care because of the cultural and social values that are related to pregnancy and childbirth.[8,43] Enhancing the cultural acceptability, safety, and humility of care (see Box 10) have been identified as means of addressing the disproportionate burden of maternal mortality and morbidity faced marginalized populations, including indigenous peoples. Systems that engage with communities in the elaboration of policies and in the delivery of care that is responsive to local needs can increase acceptability of care, enhance patient satisfaction and achieve sociocultural quality.[10,19,24,78] Familiarity with patients and an understanding of the social and cultural practices of the community can promote positive attitudes and behaviors among maternity care workers, which encourages care-seeking behavior and patient satisfaction.[79] In many cultural contexts, the intimate nature of maternity care predicates that culturally acceptable care be delivered by female maternity care workers. Additionally, in multilingual contexts, the availability of maternity care services in a birthing person's preferred language of communication influences the accessibility, acceptability, and quality of this care.

Box 10 Cultural acceptability, safety & humility

Cultural acceptability

Cultural acceptability calls upon maternity care workers to adhere to medical ethics and culturally appropriate care.[80] The goal of cultural acceptable healthcare is to eliminate discrimination on the basis of gender, sexuality, race, and/or faith, which results in inhumane care.[80] When maternity care lacks cultural acceptability, for example, patients choose to have unattended births because of the discrimination and resulting poor quality of care available to them.[80] Through patient privacy, sensitivity, and enhanced communication skills, maternity care workers can ensure the patient is respected when accessing care, thus improving health outcomes through practices of cultural acceptability.[80]

A patient-centered and culturally appropriate approach to maternity care requires maternity care workers to consider language barriers, cultural practices, and individual preference in their interactions with patients. By focusing on the patient, the maternity care workers can deliver quality care that aligns with the patient's cultural background.

Cultural safety

Cultural safety calls upon maternity care workers to build an environment in which patients feel safe and experience no assault.[81] In some healthcare institutions, maternity care workers can act paternalistically by making decisions for patients without proper patient consultation or consent.[81] Maternity care workers can take the first step in building more culturally safe environments by recognizing the legacy of colonialism, marginalization, and discrimination that has made accessing healthcare dangerous for particular patients, such as indigenous peoples, difficult – and even insurmountable. Culturally safety is built by acknowledging and overcoming systems of oppression. By sharing knowledge and listening, mutual respect between the patient and maternity care worker can develop that will ensure patient autonomy in all aspects of care.[81]

Cultural humility

Cultural humility calls upon maternity care workers to engage in a process of self-reflection to understand how their own culture affects patient interactions.[82] It is not the right of the maternity care worker to acquire knowledge about a patient's culture, but rather it is the responsibility of the maternity care worker to create a space in which the patient's worldviews can be incorporated into care.[82] When maternity care workers demonstrate cultural humility, they are resisting the imposition of paternalistic, racist, and colonial narratives into their encounter with the patient.[82] Cultural humility is key to preventing patients from experiencing marginalization when accessing healthcare.[82]

Quality of care provided by the maternity workforce

Globally, approximately two-thirds of pregnant people receive at least four antenatal care visits and approximately

three-quarters of birthing people deliver with a skilled attendant, but this progress has not been met with commensurate gains in maternal mortality rates.[10,78] Consequently, a minimum of eight visits is now recommended.[5] In light of the slow progress of maternal mortality rates despite increasing rates of facility-based deliveries, quality of care is gaining attention on the international stage as an important determinant of maternal and neonatal outcomes. Evidence suggests that disrespect and abusive treatment is pervasive in maternity care[83] and that dissatisfaction with the quality of care received during childbirth is common.[42] To counter this unacceptable behavior that only serves to perpetuate inequities, a grassroots movement has been establish with global reach: Respectful Maternity Care. Now organized through the White Ribbon Alliance, Respectful Maternity Care has developed a range of resources all aimed at achieving universal rights of people and newborns.[84]

Quality of care is of vital importance for the promotion of skilled birth attendance and facility-based deliveries as its effects on care seeking behaviors can amplify geographic barriers of access.[42] When the quality of the nearest facility is perceived to be inadequate, birthing people will often bypass this facility in favor of a further facility that is perceived to provide more satisfactory service.[68,78] Negative attitudes and behaviors amongst maternity care workers may also incite patients to turn to traditional birth attendants or to delay seeking appropriate care, both of which can have an effect on maternal health outcomes by increasing patients' risk of maternal morbidity and mortality.[79]

Health system strengthening constitutes an essential input to quality improvement efforts since challenges surrounding quality of care can be interpreted as a consequence of the poor working conditions faced by maternity care workers themselves.[83] Workforce shortages, heavy workloads, poor health workforce management practices, competency gaps, and the absence of appropriate equipment and supplies severely impede the provision of quality maternity care.[42,79,85] Midwives also report disrespect, harassment, and lack of security in the workplace and in their community, which affects their self-worth and their ability to provide quality care.[79,85] Filby, McConville, and Portela[45] presented moral distress and burnout as the consequence of the confluence of sociocultural, economic, and professional barriers to the provision of quality care by midwifery personnel in LMICs. The authors further postulated that in states of moral distress and burnout, midwives are *"disempowered to provide quality of care"*[45] despite a deep commitment and desire to serve their community. Broader health system strengthening is, therefore, required to allow for the emergence of environments that support maternity care workers in the provision of quality care.

Fixed-period accreditation of training institutions and programs, and continuing education and supervision mechanisms linked to the re-licensure of attendants, have also been presented as strategies to support accountability and quality of care.[2,8,62,86] In line with these strategies, the recently revised definition of what constitutes a skilled birth attendant exhibits an explicit focus on the provision of effective quality care, which highlights the importance of appropriate standards of practice that are supported by accredited education programs, in-service training, and regulations.[28] The emergence of the private sector in the education and employment of health professionals presents new challenges for regulation, accreditation, and quality assurance; without appropriate action, this trend could constrain governments' policy levers and management capacity to a subset of the workforce.[87,88]

Box 11 Standards for Improving Quality of Maternal and Newborn Care in Health Facilities. Geneva, Switzerland: World Health Organization[89]

In 2016, the World Health Organization published a quality of maternal and newborn health care framework[89] to guide quality improvement efforts at the system, facility, and individual levels. This framework encompasses eight domains of quality of care, including cross-cutting domains related to the availability of competent and motivated human resources and essential physical resources, and six standards for the promotion of quality of care. To improve the provision of care, the framework highlights the need for actionable information systems, functional referral systems, and evidence-based practices for routine care and management of complication. The framework also highlights the need for effective communication, respect and preservation of dignity, and emotional support to the experience of care.

CONCLUSION

In this chapter, we have provided a brief overview of: (1) *who* provides maternity care; (2) *how* this maternity workforce is configured into different scopes of practice and models of care, and (3) *what* maternity workforce trends are influencing the availability, accessibility, acceptability and quality of maternity care.

When examining the maternity workforce across contexts, it is clear that cost-effective and appropriate maternity care is inherently interprofessional. Collaboration within the maternity workforce is vital to the development of effective referral mechanisms and to ensuring access to appropriate levels of care.[56] Each cadre within the maternity workforce has their own set of knowledge and skills that must be recognized and leveraged to make optimal use of the existing maternity workforce in service of quality maternity care.[78,90] Such an approach requires cadres within the maternity workforce to set aside professional protectionism to develop strong, collaborative, respectful, and supportive relationships within integrated maternity care teams.[14]

The path to improved maternal health outcomes is clear: strengthened health workforce planning, policy, deployment, and management capacity are necessary to ensure that the right to health for every birthing person, everywhere, is upheld through access to skilled and supported maternity care workers.

PRACTICE RECOMMENDATIONS

Data and evidence

- **Collect comprehensive, standardized, comparable data across of cadres of the maternity workforce that is linkable to population health data.**
- **Use these data to inform robust and integrated maternity workforce planning that promotes better alignment between maternity workforce supply, distribution and mix with population health needs.**

Education and training

- **Offer interprofessional pre-service education and in-service training to all maternity care workers to foster greater understanding, respect, and collaboration between cadres of maternity workers.**
- **Establish stringent accreditation, certification and continuing professional development mechanisms to ensure continuing competency, and promote workforce responsiveness.**

Funding, financing and remuneration

- **Mobilize public funds to support the development of a fit-for-purpose and cost-effective maternity workforce.**
- **Invest in broader health system strengthening efforts that are conducive to: (1) recruitment into the workforce; (2) provision of quality care; (3) care team well-being; and (4) sustained maternity workforce participation.**

Leadership, governance and regulation

- **Promote accountability across all levels of the maternity care system to ensure that the maternity workforce is supported by enabling system, professional, and practice environments.**
- **Recognize the value of Indigenous midwives in the provision of culturally appropriate and clinically safe care to indigenous peoples.**

CONFLICTS OF INTEREST

The authors of this chapter declare that they have no interests that conflict with the contents of the chapter.

LIST OF ACRONYMS

BCA – Birth Center Aide

HIC – High-income Countries

ICM – International Confederation of Midwives

ILO – International Labor Organization

ISCO-08 – International Standard Classification of Occupations

LMIC – Low and Middle-income Countries

LOI – List of Obstetric Indications

MCA – Maternity Care Assistants

MHW – Maternity Health Workforce

MNCH – Maternal, Newborn, and Child Health

MNH – Maternal and Newborn Health

MSW – Maternity Support Workers

SDG – Sustainable Development Goals

SRMNH – Sexual, Reproductive, Maternity, and Newborn Health

UNFPA – United Nations Population Fund

WHO – World Health Organization

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