

### Addressing Critical Gaps in Health Workforce in Nepal's Maternal Healthcare System

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A nation's capacity to achieve its health objectives relies heavily on the proficiency, dedication, and strategic deployment of the health workforce.<sup>1</sup> Nepal's efforts to address human resource challenges, particularly in maternal and child health, have experienced achievements and ongoing challenges.<sup>2</sup> The country must continue to invest in comprehensive strategies that address geographical, economic, and educational disparities to improve healthcare service quality and accessibility. Enhancing the effectiveness of health systems goes beyond increasing the workforce size; it involves initiatives to evaluate and strengthen the health workforces' recruitment, distribution, retention, and productivity. Strategies include exploring innovative approaches for pre-service and in-service training, implementing or refining incentives to address distribution and retention issues, and, when suitable, task-shifting—delegating tasks to less specialized health workers.<sup>3</sup>

The health workforce (human resources) is one of the six building blocks of a health system.<sup>3</sup> In this commentary, we focus on the human resources aspect of the challenges in improving the health system in Nepal. In doing so, we draw upon the experiences of the Nick Simons Institute, an organization that has worked in Nepal for more than 15 years.<sup>4</sup> The Institute's primary mission has been to innovate solutions in rural healthcare by providing support to hospitals, training human resources, and advocating for enhancing the healthcare system in alignment with the Ministry of Health and Population (MoHP) in Nepal.

#### The State of Human Resources for Maternity Services in Nepal

The World Health Organization's (WHO) global strategy for Nepal suggests allocating six health workers per 1,000 in population across all cadres.<sup>5</sup> However, Nepal continues to face a shortage of health workers in practice.

According to the Nepal Health Facility Survey conducted in 2021 only 73% of the posts sanctioned by the Ministry of Health and Population were filled, marking a slight improvement from 71% reported in a similar survey conducted in 2015. In 2023, the fulfillment rates for consultants and physicians/general practitioners were only 54% and 42%, respectively, in federal and provincial hospitals. The situation is more dire in local-level hospitals, with only 23% of the posts of physicians/general practitioners filled.<sup>6</sup>

The Human Resources for Health Strategic Road Map<sup>7</sup> provides a comprehensive overview of the availability and needs of the various cadres of the health workforce in Nepal. The table below shows the current situation and future needs.

As of the fiscal year 2020/21, Nepal faces large gaps in all five types of medical/health professionals – general

physicians, OBGYN, anesthesiologists, anesthesia assistants, and midwives, amongst other cadres. The most substantial gap (8,000) remains in midwifery. The disparity between the production and utilization of human resources in healthcare remains a major challenge in Nepal.<sup>5</sup>

Another report from the Ministry of Health and Population published in 2021 has estimated the projection of HRH to be higher.<sup>23</sup> However, the gap in these health cadres does show a serious problem that needs to be addressed. The Lancet Commission on Global Surgery (LCoGS) recommends using the density of specialist surgical workforce density (as a metric) for monitoring universal access to safe, affordable surgical and anesthesia care.<sup>8</sup> The target is to have 20 specialists (surgical, anesthesiology, and obstetric doctors) per 100,000 population (to ensure comprehensive healthcare coverage). A study by Ross et al. 2023 conducted in 25 remote districts of Nepal found that Specialist SAO density was very low at 0.4 per 100,000 for the whole study population.<sup>9</sup> Caesarean sections (CS) were performed in 27 hospitals in 21 districts (84%); however, four districts performed no CS.

In recent years, human resources in Nepal have been produced domestically through public and private sector investments; however, there is a pressing need for quality assessment and regulation in their production, as they form the foundation of quality health services. A study in 2019 revealed that SBAs, on average, exhibit a deficiency in both knowledge and clinical skills, failing to meet the 80 % standard required to pass training.<sup>10</sup> This could be attributed to various reasons; a few facilities were conducting a minimal number of deliveries, with only 7% meeting the WHO's recommended volume to maintain competence. Likewise, another study assessed the quality of antenatal care (ANC) in 17 primary public hospitals across Nepal, showing a significant gap in the performance of recommended tasks.<sup>11</sup> The providers, mainly nursing staff performed only 22 out of 59 required tasks on average, showcasing the variations across the provinces and the level of education.<sup>10</sup>

Nepal's healthcare system faces a dual challenge: a shortage of healthcare professionals and difficulties in retaining the existing workforce. At another level, for those currently providing services, the quality of services needs to be improved.

#### Expanding the Availability of and Access to General Practitioners

While grappling with the continued shortage of specialist doctors in the health care system, Nepal could give more attention to producing and creating positions for generalist doctors. These generalist doctors can play a multifaceted role, maximizing progress toward maternal health and performing tasks carried out by specialist doctors, such

as surgeons, radiologists, and physicians, among others, to manage life-threatening conditions. This approach also aligns with the MoHP's (Ministry of Health and Population) 'task shifting' as a conceptual change representing the short- and medium-term solution to addressing the shortage of medical doctors, especially in rural settings in the country.<sup>12</sup>

In Nepal, the MDGP (MD in General Practice) program was established many years ago as a specialized postgraduate initiative to tackle the scarcity of specialist doctors in rural areas.<sup>13</sup> These doctors not only provide primary care but are also trained to perform critical life-saving surgical and obstetric procedures, including cesarean sections, appendectomies, and laparotomies.

A 2006 study tracking MDGPs trained between 1982 and 2005 found that 87% of MDGPs remained in Nepal. Among them, 61% worked outside Nepal's capital, with 35% contributing their services to government facilities.<sup>9</sup> Similarly, to address the shortage of medical anesthesiologists in rural areas, Nepal introduced Anesthesia Assistants (AAs). Comprising of nurses and other paramedics, AAs undergo a 12-month AA training under the National Academy of Health Sciences (NAMS). A 2014 survey revealed that 81% of trained AAs were still actively working in hospitals capable of providing surgical services.<sup>14</sup>

In a separate study<sup>9</sup> that aimed to assess the effectiveness of a generalist workforce led by a MDGP and non-physician anesthetist in facilitating surgical delivery through task-

anesthesiologists or anesthesia assistants, nursing staff, and other supporting personnel. However, the HRH projection for the next few years of these health cadres does not align to function as a cohesive team effectively. The projected number of anesthesiologists/anesthesia assistants is far less than MDGP/OBGYN.<sup>7</sup>

### Skills Enhancement and Retention of the Health Workforce

According to a 2021 MMR report, 46% of deliveries among deceased women were assisted by doctors, while 19% by staff nurses/midwives. Of these women, 56% had vaginal deliveries, and 38% had undergone cesarean sections. Among those who died during pregnancy, delivery, or the postpartum period (n=611), 85% had experienced at least one ANC visit. Among those who died during delivery and the postpartum period (n=412), 53% had attended all four ANC visits. Notably, 74% received treatment from doctors for their last illness or health problem, and 12% from staff nurses/midwives/ANM.<sup>15</sup>

The data represented here reflects maternal and child health services provided by health facilities through health workers, including doctors and nursing staff. The knowledge and skills necessary for these maternity services are acquired during the Advanced Skilled Birth Attendant (ASBA) for doctors and Skilled Birth Attendant (SBA) for nurses training programs. Despite initial training, knowledge retention and skills may diminish over time, influenced by factors like limited exposure to clients, an

**Table 1. Existing Situation and Needs of Five Cadres of Medical/Health Professionals, Nepal**

Health Professionals	Total Production 2020/021	Working as of 2020/021	Estimated Need for 2020/021	Estimated Need by 2030/031	Gap between Working and Needed as of 2020/021
MDGP	367	349	1,115	1,223	766
OBGYN	876	832	1,232	1,351	400
Anesthesiologist	592	562	763	837	200
Anesthesia Assistant	97	92	213	234	121
Midwife	0	0	8,000	8,776	8,000

shifting across 25 rural and remote districts in Nepal, they found that the density of specialist surgeons, anesthetists, and obstetricians (SAO) was 0.4/100,000. In contrast, the density of the team led by MDGP-supported by non-physician anesthetists was notably higher at 3.1/100,000 or eight times more. The presence of a generalist team was positively associated with a two-fold increase in cesarian section (CS) availability. Furthermore, the MDGP-led team carried out the essential functions of other specialist doctors, such as surgeons (appendectomy, orthopedics, and laparotomy) and radiologists (USG of pregnant women), and others.<sup>9</sup>

These limited programmatic experiments provide encouraging results to build upon. The Government of Nepal should prioritize creating new positions for generalist doctors, such as MDGPs. This approach could make access to doctors and care more convenient and easier than before and contribute to minimizing preventable maternal deaths.

Health workers cannot operate in isolation; they require a strong team and efficient teamwork. For instance, performing a cesarean section necessitates a collaborative effort from a team comprising MDGP or OBGYN,

inadequate enabling environment, and incomplete teams, among others. One potential solution to retaining skills post-training is through on-site coaching and mentoring.

As Nepal continues to invest in SBA training, concern arises regarding the effectiveness and retention of SBA skills in the field. A study conducted by Ruma et al. in 2019 indicated that despite substantial investments in SBA programs, these healthcare workers struggle to receive adequate training or sufficient practice to maintain clinical competence and knowledge.<sup>10</sup>

To address concerns about the competence of skilled birth attendants (SBAs) and the effectiveness of their training, a unique initiative called the Follow-Up Enhancement Program (FEP) was introduced in 2011.<sup>16</sup> The FEP was collaboratively developed by the National Health Training Center (NHTC) and the Nick Simons Institute (NSI); the FEP aimed to establish an innovative system of supportive supervision. The program involves directly evaluating the clinical proficiency of SBAs who have undergone in-service training at their respective work sites. The program seeks to assess the knowledge and skills of SBAs post-training, identify reasons for any weaknesses, evaluate the practical

experience SBAs have gained in conducting deliveries and essential maternity procedures, examine factors influencing the implementation of acquired tools, and provide recommendations for the future.<sup>16,22</sup>

In 2023, a study was conducted to assess the effectiveness of FEP. One year after undergoing pre-FEP assessments, SBAs were tracked for follow-up. The study examined the knowledge and clinical competencies of SBAs in hospitals where FEP was implemented and those where it was not. The study found that a single FEP session resulted in a 9% increase in knowledge scores, a 29% improvement in clinical skills scores, and a 7% enhancement in enabling environment scores.<sup>16</sup> The FEP program played a vital role in retaining the knowledge and clinical skills of SBAs while also contributing to improving the working environment. Improvements were observed in maintaining the working environment, team support, and the availability of equipment and supplies. SBAs demonstrated motivation as the FEP allowed for on-site coaching, continuously enabling them to address any gaps in their skills and knowledge. Moreover, FEP also encouraged and enhanced the ability of SBAs to conduct deliveries according to protocol, further improving the quality of care. The study did not, however, find increases in the number of deliveries conducted by SBAs following FEP.

A related project, USAID's Strengthening Systems for Better Health Activity, has been operating since 2018 in remote districts of Karnali and Lumbini Provinces. The project involved providing onsite coaching and mentoring on maternal, neonatal, and child health to the nursing staff of health facilities. The outcomes revealed that onsite mentoring and coaching sessions helped nursing staff effectively manage childbirths and address complicated births that might otherwise be referred to higher-level centers.<sup>17</sup>

These instances highlight training interventions that can be implemented to motivate health workers, enhance their skills, and promote job retention. The approach of on-site coaching and mentoring emerges as a valuable strategy for improving the capabilities of healthcare professionals and addressing challenges in maternal and child health services.

#### Onsite Midwifery-led Birthing Unit (OMBU)

Globally, evidence shows that investing in midwifery is central to enhancing the quality of care and has the potential to reduce stillbirths and maternal and neonatal mortality by 80%.<sup>18</sup> Nepal's 2019 National Health Policy aimed to promote and expand professional midwifery and nursing services, focusing on delivering quality health services.<sup>19</sup> Complementing this, as part of the long-term strategy of the Skilled Birth Attendant (SBA) Policy, Nepal initiated a midwifery program in 2016. The government has also formulated guidelines for deploying midwives in hospitals, with the selection of hospitals based on the number of deliveries conducted.<sup>18</sup> The 'Onsite Midwifery led Birthing Unit' (OMBU) is being established in a few hospital premises. The OMBUs are managed by midwives caring for low-risk, uncomplicated pregnancies/deliveries and referring complicated cases to obstetricians.<sup>18</sup>

The implementation of a midwifery-led birthing unit was first introduced in Patan Hospital in 1995 and subsequently at the Paropakar Maternity and Women's Hospital (PMWH).<sup>20,21</sup> Nick Simons Institute (NSI) is assisting

Bharatpur Hospital in establishing and operating such a unit. A comparative study conducted to assess the efficacy of the Birthing Centre (BC) against an adjacent Consultant-led Maternity Unit (CNU) at Patan Hospital found that after appropriate screening, intrapartum care for low-risk deliveries is effectively provided by midwives. Furthermore, women delivering at the BC are more likely to attend both postnatal and family planning clinics. Midwifery-led care appears to lead to lower rates of iatrogenic procedures with cost-effective services.<sup>20</sup> Similarly, an assessment at the PMWH (undertaken in 2019/20) concluded that nurses working independently at the BC are competent providers of good-quality care during labor and delivery.<sup>18</sup>

Emerging evidence from Nepal suggests, thus, that a midwife-led birth center has the potential to serve as a facility for triaging patients. It lessens the burden on the hospital's operating theatre and associated staff and, at the same time, provides care to low-risk pregnancies more efficiently and effectively. Expansion and scaling up the OMBU, with appropriate monitoring, supervision, support, and periodic evaluation, could help minimize the 'third delay' (delay in getting care once the patient arrives at a health facility premise). At the same time, as reviewed earlier, there is a wide gap between the number of midwives available and current and projected needs. Investing in recruiting and training a new cadre of midwives and placing them in new facilities should be a priority for addressing the lack of human resources in maternal healthcare in Nepal.

In conclusion, we recognize that there may be several other approaches aimed at bolstering the healthcare system in Nepal, all of which could play a role in reducing preventable maternal deaths. However, despite the many possibilities, the three strategies we have emphasized – mobilization of general practitioners, skill enhancement, and midwifery-led birthing units – are particularly noteworthy. NSI has actively contributed to these areas, drawing from first-hand experiences in monitoring and evaluating their effectiveness. Devoting greater attention to these approaches and interventions is expected to yield the desired results, significantly impacting in Nepal's journey towards achieving a faster decline in maternal mortality. Future efforts should also evaluate these approaches to inform future HRH strategies to ensure sustainable progress in maternal healthcare outcomes.

#### ABBREVIATIONS

AA	Anesthesia Assistant
ANC	Antenatal Care
ANM	Auxiliary Nurse and Midwife
ASBA	Advanced Skilled Birth Attendant
BU	Birthing Unit
CNU	Consultant-led Maternity Unit
CS	Caesarean Section
FEP	Follow-up Enhancement Program
HRH	Human Resource for Health
LCoGS	Lancet Commission on Global Surgery
MDGP	MD in General Practice
MMR	Maternal Mortality Ratio
MoHP	Ministry of Health and Population
NHTC	National Health Training Center
NSI	Nick Simons Institute
OBGYN	Obstetrics and Gynecology
OMBU	Onsite Midwifery-led Birthing Unit



PMWH Paropakar Maternity and Women's Hospital  
SAO Surgical, Anesthesiology, and Obstetric  
SBA Skilled Birth Attendant  
WHO World Health Organization

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