



# Nepal Health Sector Support Programme III (NHSSP – III)

**REPORT ON THE PROCESS AND LESSONS LEARNT  
FROM  
THE SAFE MOTHERHOOD AND NEWBORN HEALTH PROGRAMME REVIEW  
&  
THE SAFE MOTHERHOOD AND NEWBORN HEALTH ROAD MAP 2030**

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## CONTENTS

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List of Abbreviations .....	4
Executive summary .....	5
1 Background .....	8
2 Review and Road Map Development Process .....	9
3 Key Findings and Lessons from the SMNH programme Review .....	11
3.1 Policies and Programmes On SMNH .....	11
3.2 Key Findings from the SMNH Data .....	11
3.3 Lessons from SMNH Programme review .....	14
3.3.1 Family Planning .....	14
3.3.2 Abortion .....	16
3.3.3 Antenatal Care (ANC) .....	16
3.3.4 Obstetric Care .....	17
3.3.5 Caesarean Section and Medicalisation of Birth .....	19
3.3.6 Postnatal Care (PNC) .....	19
3.3.7 Quality of Care .....	20
4 Road Map Recommendations .....	22
4.1.1 Family Planning .....	22
4.1.2 Abortion .....	23
4.1.3 Antenatal Care .....	23
4.1.4 Delivery Care .....	24
4.1.5 Postnatal Care .....	26
5 Conclusion .....	27

## LIST OF ABBREVIATIONS

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ANC	Antenatal Care
ANM	Auxiliary Nurse Midwife
BNA	Bottleneck Analysis
BEONC	Basic Emergency Obstetric and Newborn Care
CAC	Comprehensive Abortion Care
CB-NCP	Community Based Newborn Care Package
CEONC	Comprehensive Emergency Obstetric and Newborn Care
CPR	Contraceptive Prevalence Rate
DFID	Department for International Development
EDP	External Development Partners
FCHV	Female Community Health Volunteer
FPAN	Family Planning Association of Nepal
GoN	Government of Nepal
INGO	International Non-Governmental Organisations
IUCD	Inter-uterine Contraceptive Device
JAR	Joint Annual Review
MgSO <sub>4</sub>	Magnesium Sulphate
MMR	Maternal Mortality Rate
MoHP	Ministry of Health and Population
MSI	Marie Stopes International
NAR	National Annual Review
NDHS	Nepal Demographic and Health Survey
NFHP	Nepal Family Health Programme
NGO	Non-Governmental Organisation
NHFS	Nepal Health Facility Survey
NHSSP	Nepal Health Sector Support Programme
NMSS	Nepal Micronutrient Status Survey
PHC/ORC	Primary Health Care Outreach Services
PHCCs	Primary Health Care Centres
PNC	Postnatal Care
PSI	Population Services International
SDG	Sustainable Development Goals
SBA	Skilled Birth Attendants
SLC	School Leaving Certificate
SMNH	Safe Motherhood and Newborn Health
USAID	United States Agency for International Development
WHO	World Health Organisation

## EXECUTIVE SUMMARY

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Nepal's Demographic Health Surveys (NDHS) show that the pregnancy-related mortality ratio in the country decreased significantly over a decade: from 539 deaths per 100,000 live births in 1996 to 281 in 2006<sup>1</sup>. However, a similar reduction was not seen in the subsequent decade. Pregnancy-related mortality ratio for 2016 was 259, indicating that it may have stagnated since 2006, despite improvements in institutional deliveries and other maternal health service uptake indicators. The Ministry of Health and Population (MoHP) therefore asked for a review of the Safe Motherhood and Newborn Health (SMNH) Programme, in order to understand what had and had not worked and identify key strategies, in the form of a Road Map to reduce maternal and newborn mortality to meet the Sustainable Development Goals.

Led by the Family Welfare Division (FWD), a Technical Committee with members from various stakeholders in Nepal co-ordinated the Review and Road Map development process. This document provides a summary of the process, the learning from the review and highlights the key steps laid out in the Road Map.

A range of policies and programmes for SMNH have been implemented since the early 1990s, and the SMNH Programme Review focused in particular on the Safe Motherhood and Newborn Health Long-Term Plan (2006-17). Key results of relevance to the SMNH Review and Road Map, that emerged from analysis of existing data such as the Nepal Demographic and Health Surveys, and Nepal Health Facility Surveys, showed that:

- a. There was no change in the leading causes of maternal deaths
- b. The rate of pregnancies was high and contraceptive use was low among teenagers
- c. Short birth-intervals persisted, particularly among certain groups of women
- d. It was unclear how strongly socio-economic and locational factors influenced maternal mortality, but these were found to be strongly associated with newborn mortality.
- e. Perinatal mortality rate (stillbirth and newborn mortality) has declined, although newborn mortality continues to comprise half of under-five mortality.
- f. There were several missed opportunities in delivering quality services along the continuum of care and as package of services.
- g. Disparities in utilisation persisted and awareness remains limited among various groups of women.

For the purposes of this document, learning from the SMNH Review has been used to draw out lessons and look more closely at:

- the extent the Programme has tried to address the main causes of maternal death – haemorrhage and pre/eclampsia and eclampsia;

- how the Programme has tried to reduce the life-time risk of maternal death through reducing overall fertility, and in particular by focusing on women who are most at risk, such as reducing teenage pregnancy and increasing birth intervals; and
- how the Programme has addressed asphyxia which is still the main cause of Newborn death.

The review showed that:

1. The Long-Term Plan (2006-2017) was not very specific about reducing the lifetime risk of maternal mortality through reduced fertility and increased family planning.
2. Young people prefer not to seek SRH services in the public sector; and clinic based youth-friendly services in the private sector are also not appealing to them. Pharmacies are the preferred option for young unmarried people to seek services.
3. The current model of providing clinic based adolescent friendly services may also not reduce unwanted pregnancies among young married women as they are under significant social pressure to have a child and seek advice from family members and peers.
4. The only way to encourage women to have longer birth-intervals has been post-partum family planning. Despite several opportunities where birth-spacing and family planning could have been discussed by health workers with women over the pregnancy and postpartum period by providing information and counselling, these have not been taken up in an effective way.
5. Comprehensive abortion care (CAC) services were included as integral to basic emergency obstetric and newborn care (BEONC) and comprehensive emergency obstetric and newborn care (CEONC), but medical abortions seem to have become more widespread as women choose to buy this medication from pharmacies.
6. Information and counselling during pregnancy for compliance with ANC care, birth-preparedness, knowledge on complications has been relatively neglected, despite overall increases in ANC visits.
7. The Long-Term Plan targets for the establishment of birthing centres and CEONC sites have been exceeded, but functionality of the obstetric service sites needs to improve. Shortage of trained staff has severely hampered service delivery, in particular the provision of caesarean sections. Appropriate deployment of trained staff, frequent transfer of staff and difficulties in getting doctors willing to go to remote hospitals are all still critical problems, particularly in remote locations. Referral from a birthing centre (BC) or BEONC to a site where obstetrics and newborn complications are well managed is still a neglected area.
8. The Government of Nepal's (GoN) current protocol on postnatal care (PNC) includes 3 postnatal checks – at 24 hours, 3 days and 7 days after birth – and all checks are to be

provided at a health facility, contrary to the recommendation in the Long-Term Plan which indicates that PNC should be provided by a health worker at home or at the health facility. But only about half of the women and newborns who have facility-based births receive PNC at 24 hrs of birth and most of those who do not have facility-based births do not receive it until two days after delivery.

The data analysis and the Programme review led to a set of recommendations which were laid out as the Road Map. These cover family planning, safe abortion, ANC, delivery care including BEONC, CEONC, birthing centres and referrals; health care financing, quality of care and postnatal care.

## 1 BACKGROUND

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Nepal's Demographic Health Surveys (NDHS) show that the pregnancy-related mortality ratio in the country decreased significantly over a decade: from 539 deaths per 100,000 live births in 1996 to 281 in 2006<sup>1</sup>. However, a similar reduction was not seen in the subsequent decade. The pregnancy-related mortality ratio for 2016 was 259, indicating that it may have stagnated since 2006<sup>1</sup>. This stagnation was despite an increase in access and use of health services over the same time period, including institutional improving from 18% in 2006 to 57% in 2016<sup>1</sup>. Given this situation and that the Safe Motherhood and Newborn Long-Term Plan (2006-2017) had just come to an end, the Ministry of Health and Population (MoHP) asked for a review of the Safe Motherhood and Newborn Health (SMNH) Programme. The purpose of the review was to understand what had and had not worked and identify key strategies, in the form of a Road Map, to meet the 2030 Sustainable Development Goal (SDG) 3 specific target of reducing the maternal mortality ratio to approximately 70 per 100,000 live births by 2030. Nepal aims to reduce the maternal mortality ratio to 125 by 2020, and 70 by 2030. But these targets cannot be achieved unless the MoHP addresses any existing gaps that are slowing down progress, and approaches the safe motherhood agenda with a renewed strategic approach and commitment. This imperative led to the review of the Safe Motherhood and Newborn Health Programme and the development of the Safe Motherhood and Newborn Health Programme Road Map 2030.

This document provides a summary of the process, the learning from the review and highlights some key recommendations from the Road Map.

## 2 REVIEW AND ROAD MAP DEVELOPMENT PROCESS

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The Family Health Division (FHD) called for a stakeholders meeting in December 2017 to discuss the determinants of maternal and newborn health, in response to concerns expressed by multiple stakeholders (including policy-makers and media) over the stagnant pregnancy-related mortality ratio from 2006 to 2016. After a number of meetings, in March 2018 the FHD, now merged with Child Health Division and renamed as the Family Welfare Division (FWD) commissioned a review of its Safe Motherhood Programme with the following objectives:

1. Analyse the progress made against Nepal Health Sector Strategy (NHSS) programme targets
2. Describe processes and factors that have determined successes or failures of the Safe Motherhood and Newborn Health Programme.
3. Identify and prioritise strategic interventions and activities for the Safe Motherhood and Newborn Health Programme Road Map 2030.

For the purpose of the review, FWD formed five thematic groups led by a Senior Programme Manager with membership representing development partners, international non-governmental organisations (INGOs) and academic institutions. A consultant supported the thematic groups to review the programme's successes and challenges. The root causes of the challenges were identified through a bottleneck analysis (BNA)<sup>1</sup> and recommendations were developed to address the challenges. A Technical Committee co-ordinated the Review and Road Map development process.

The process of BNA was complemented by an extensive literature review of national and international publications including reports of the Joint Annual Review (JAR-2018) organised in early 2018 by the Ministry of Health and Population (MoHP) and External Development Partners (EDPs)<sup>2</sup>, the Nepal Demographic and Health Survey (NDHS) 2016, the Nepal Health Facility Survey (NHFS) 2015, and the Nepal National Micronutrient Status Survey (NMSS) 2016 specifically on its maternal and newborn health, nutrition and related components.

The lessons learned from provincial and national annual reviews (NAR) in December 2018 also contributed to the Review Report. The draft report was shared with national and international experts for comments and then widely discussed with all levels of the government, with key partners

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<sup>1</sup> [https://www.unicef.org/health/files/BNA-Ghana-April\\_2015\\_Final.pdf](https://www.unicef.org/health/files/BNA-Ghana-April_2015_Final.pdf)

<sup>2</sup> JAR\_Report\_Progress\_of\_the\_Health\_Sector\_2018

and health stakeholders through two central level workshops in November 2018 and February 2019, and three provincial workshops in December 2018.

There were both challenges and opportunities in the review process. The main challenge was frequent changes in the leadership within FWD. This meant support for the review process had to be obtained each time, which caused delays to the review. This has also meant that review of major programmes such as the Aama Programme, and clarity on strategies such as promoting emergency contraception have had to be delayed for a later time. These would further complete the picture of the current status and potential future steps. Although federalism delayed the review process due to the movement of key officials, it also created opportunities by making provincial consultations possible. These were advised by the current FWD Director, as they had not initially been planned. Feedback from field visits and provincial consultations were extremely valuable to shape the recommendations in the Road Map as these recommendations are based on the situation on the ground.

Two key documents have been co-produced with the MoHP and SMNH Technical committee. These are: (i) the SMNH programme review (Attachment 2) and (ii) the draft<sup>3</sup> SMNH Road Map (Attachment 1).

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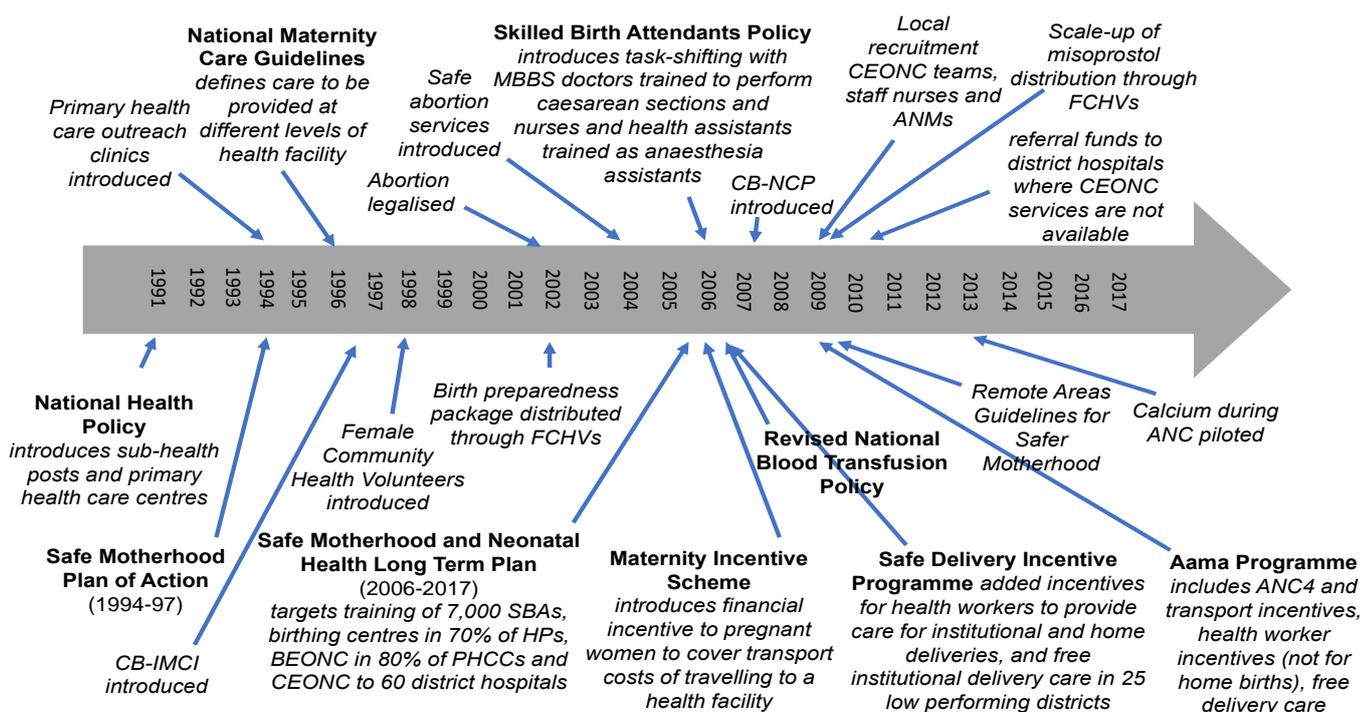
<sup>3</sup> The draft Road Map is being submitted as annex to this PD. The final one will be ready tentatively by May/June 2019, as the GoN has requested for the Road Map to be costed after BHCS package is costed by MoHP. The final version of the Road Map will include the costing as well as the final Results Framework (currently a draft version is annexed to the Road Map). The draft Result Framework includes final/agreed goal indicators, and the outcome level indicators need final agreement between the SMNH working group and the M&E working group. Output level indicators will be developed when Provincial Governments develop their 5 years plans and will be measured annually and sourced from the HMIS.

### 3 KEY FINDINGS AND LESSONS FROM THE SMNH PROGRAMME REVIEW

#### 3.1 POLICIES AND PROGRAMMES ON SMNH

A range of policies and programmes for SMNH have been implemented since the early 1990s (figure 1). Given the breadth of policies and programmes, the SMNH Programme Review led by FWD focused in particular on the 2006-17 Safe Motherhood and Newborn Health Long-Term Plan which set ambitious targets for scaling-up access to skilled birth attendance, safe abortion services and basic and comprehensive Emergency Obstetric and Newborn Care.

Figure 1 Selection of Policies and Programmes for Safe Motherhood and Newborn Health



#### 3.2 KEY FINDINGS FROM THE SMNH DATA

Before reviewing the activities of the 2006-17 Safe Motherhood and Newborn Health Long-Term Plan in detail, available data on maternal and newborn health was reviewed from datasets such as the NDHS, NHFS and the NMSS. The analysis focused on understanding when, where and how mothers and newborns die and if this had changed over time. Key results of relevance to the SMNH Review and Road Map, that emerged were:

**No change in the leading causes of maternal deaths:** The leading causes of reported maternal deaths from 28 hospitals over a four-year period (2015-18) were post-partum haemorrhage (17%) and eclampsia (19%)<sup>2</sup>. This meant that the leading causes of maternal death had not changed since the 2008/9 Maternal Mortality and Morbidity Study<sup>3</sup>. Between the two study periods, maternal deaths

due to infection had increased and indirect deaths such as non-communicable diseases have become an increasingly important cause of death. Data from the same 2015-18 source, indicated that most maternal deaths happened in a health facility and nearly half (47%) of maternal deaths occurred 48 hours after delivery, and 30% in the late post-partum period (from 48 hours after birth to up to six weeks after).

**Rate of pregnancies are high and contraceptive use is low among teenagers:** A woman's lifetime risk of maternal death is reduced if the number of pregnancies are reduced. Fertility has been falling in Nepal but the teenage (15-19 years) pregnancy rate has been constant at 17% over the past two Nepal Demographic and Health Surveys and is highest in Province 2 (27%). This is a concern as the risk of maternal mortality is high for adolescent girls, and pregnancy and complications of childbirth are the leading cause of death among 15-19 year old girls globally. Alongside these high rates of teenage pregnancy, contraceptive use among married teenagers (15-19 years) in Nepal is low (23% for all methods compared to 15% for modern contraceptive methods)<sup>1</sup>.

**Short birth-intervals persist:** Short intervals between births are known to increase risks of morbidity and mortality to mothers and newborns. The proportion of babies born within a short interval (less than 24 months) in Nepal, has remained constant at 21% since 2011. Birth intervals were shorter amongst certain groups of mothers, such as those less than 19 years of age, living in the Terai and/or in Province 2 and in rural areas, and among those who had lost a child from the previous pregnancy<sup>1</sup>.

**Unclear how socio-economic and locational factors influence maternal mortality but they are strongly associated with newborn mortality:** NDHS 2016 does not include any data analysis on the direct relationship between maternal mortality or pregnancy-related mortality and poverty, caste/ethnicity or geographic location, as the number of maternal deaths are too small to make such associations. But their influence on newborn mortality rate is strong and the disparities are stark as shown (Table 1). A newborn with a mother who is poor, uneducated and living in a rural or mountainous area, has a higher chance of death, than a newborn with mother who is wealthy, educated and living in an urban area.

**Table 1: Neonatal Mortality Rates by Different Characteristics, NDHS, 2016**

Characteristics	Neonatal Mortality per 1,000 live births
National	21
Mountain	35
Terai	28
Rural	26
Urban	16
No education	36

SLC plus education	12
Lowest wealth quintile	36
Highest wealth quintile	12

**Perinatal mortality, stillbirth and newborn mortality has improved:** The perinatal mortality rate has declined from 45 per 1,000 births in 2006 to 31 in 2016 and the stillbirth rate has also declined from 22 per 1,000 births in 2006 to 15 in 2016. Newborn mortality comprises half (54%) of under-five mortality<sup>1</sup> with a decline from 61% in 2011. The most common causes of newborn death are respiratory and cardiovascular disorders of the perinatal period (31%) and complications of pregnancy, labour and delivery (31%). Within respiratory and cardiovascular disorders, perinatal asphyxia accounted for more than half of the deaths. Most newborn deaths (57%) occurred within the first 24 hours of life, with 17% occurring within one hour and 40% from one hour to 23 hours.

**Missed opportunities in the continuum of care for delivering quality services:** The data analysed how many and which women and newborns received the entire package of antenatal, delivery and postnatal services and found that in 2016, 84% of women had one ANC visit, but among them only 76% of woman had the first ANC visit on time, and only 59% of women received four ANC visits as set out in the GoN's protocol. About 45% of mothers who delivered at a facility reported they received post-partum care within 4 hours of delivery and just 57% reported they received post-natal care within 48 hours of delivery<sup>1</sup>. This suggests that a large proportion of women and newborns are missing out on care during the postnatal period when they are more vulnerable to mortality and morbidity.

**Disparities in utilisation of services persist and women's awareness of danger signs in pregnancy remains limited:** Women's low social status and inability to make decisions related to their own health, plus poor knowledge of obstetric and newborn danger signs, are mediated by how poor she is, her caste or ethnicity, and where she lives. These factors play a significant and overlapping role in the social determinants of maternal health and the under-utilisation of maternal health services. There are consistent disparities among different caste and ethnic groups in the use of antenatal care and delivery care in a health facility. Poverty plays a critical role with women in the highest wealth quintile more likely (90%) to deliver at a health facility compared to 34% of women in the lowest quintile. Only 41% of women know that abortion is legal<sup>1</sup>. Women also still have low awareness of danger signs with only 40% of women able to list at least 3 danger signs during labour and delivery (HHS 2012).

### 3.3 LESSONS FROM SMNH PROGRAMME REVIEW

There is substantial learning to be gained from the 2006-17 Safe Motherhood and Newborn Long-Term Plan implementation (included in detail in the SMNH Review - Annex 1). For the purposes of this document, the key lessons have been identified and examined more closely in terms of:

- the extent to which the Programme has tried to address the main causes of maternal death – haemorrhage and pre/eclampsia and eclampsia;
- how the Programme has tried to reduce the life-time risk of maternal death by reducing overall fertility, and in particular by focusing on women who are most at risk, such as through reducing teenage pregnancy and increasing birth intervals; and
- how the Programme has addressed asphyxia, which is still the main cause of newborn death.

#### 3.3.1 Family Planning

The 2006-2017 Safe Motherhood and Newborn Long-Term Plan was not very specific about reducing the lifetime risk of maternal mortality through reduced fertility and increased family planning. Part of the reason for this omission could be that from 2001 to 2007 and from 2007 to 2012, the USAID funded Nepal Family Health Programme (NFHP) focused on family planning, Female Community Health Volunteers (FCHVs) and newborn health; and had worked very closely with the Child Health Division (CHD) of the Department of Health Services (DoHS). In contrast, the Safe Motherhood and Newborn Long-Term Plan was under the leadership of the Family Health Division and Safe Motherhood was considered an area that was supported by DFID. In summary, family planning fell through a gap between programme implementation, communication between programmes and government, and development of government plans. Further, to reduce high-risk pregnancies the Long-Term Plan should have focused on adolescent pregnancy and reducing birth intervals, but these too were not strongly covered. A costed implementation plan for FP (2015-20) was developed focusing on the low contraceptive prevalence rate (CPR) among certain groups including adolescents, post-partum women and the migrant population. GoN is now monitoring FP performance based on FP 2020 indicators.

**Adolescent pregnancy:** In 2000, the National Adolescent Health and Development Strategy was developed and a national programme started in 2008 which piloted adolescent friendly health services<sup>4</sup> in 26 public health facilities. By 2015, this had increased to over 1,000 public health

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<sup>4</sup> Health facilities are certified as having adolescent-friendly services when they have trained staff, relevant information materials, deliver services in a confidential way, have adolescent-friendly opening hours and two adolescents in the Health Facility Management Committee

facilities. Around the same time, a mobile application was developed by the MoHP and donor partners to provide adolescents with accurate information in an engaging and accessible format.

The success of the adolescent-friendly services and the mobile application are difficult to assess. There is no data on the use of the mobile application, although some evidence shows a decline in the number of young people attending public sector health facilities for family planning.<sup>1,4,5</sup> NGO partners such as MSI, FPAN and PSI have family planning services that are targeted towards youth and are designed based on qualitative and quantitative data about young people's sexual behaviour. The data indicates that the unmarried youth population use pharmacies to obtain either condoms or emergency contraception and get information from their peers. Once married, young men and women tend not to use contraception until after their first child is born<sup>5</sup>.

The key lesson identified in the SMNH review was that young people prefer not to seek services in the public sector, and that youth-friendly services in clinic based settings in the private sector also do not appeal to young people. Instead, pharmacies are the preferred option for young unmarried people seeking services. The current model of providing clinic based adolescent friendly services will also not reduce unwanted pregnancies among young married women as they are under significant social pressure to have a child and seek advice from family members and peers. Successful interventions to reduce teenage pregnancy among married women lie outside the health sector as they are more closely linked to changing social and cultural values.

**Birth intervals:** The key programme intervention to encourage women to have longer intervals between births has been post-partum family planning. NDHS 2016 data indicates that only 13.3% of women said they were given information on family planning in the post-partum period<sup>1</sup>. NHFS, 2015 reported that in only 1.1% of all health facilities did health staff discuss post-partum family planning during an ANC visit. At health posts 2.3% of staff did discuss this, but none of the zonal hospitals (0%) did.<sup>6</sup> This survey also held exit interviews with post-partum women after they had been discharged from the health facilities and only 25.1% of women reported that family planning had been discussed. About 41% of women who gave birth in a primary health care centre and 24% women who gave birth in a zonal hospital reported this, but none of the women who gave birth in a birthing centre at a health post had discussed post-partum family planning.

Another key issue is a shortage of staff who are trained to provide long-term post-partum family planning methods, such as intrauterine contraceptive devices (IUCD) and implants. All health staff including Auxiliary Nurse Midwives and Staff Nurses who are trained as Skilled Birth Attendants can provide implants after 8 days in-service training. The 2015 NHFS however, reported that in the 24 months prior to the survey only 2.1% of health workers in Nepal had received training in post-partum family planning, although this increased to 5.4% of staff in zonal hospitals.

The key lesson for family planning in the SMNH Programme review is that there are many opportunities where birth spacing and family planning could have been discussed by health workers with women over the pregnancy and postpartum period. Providing information and counselling needs to improve and, additionally, strategies to increase the availability of IUCD and implants also need to be considered. Interventions to reduce teenage pregnancy among married women need multi-sectoral approaches.

### **3.3.2 Abortion**

The 2006-2017 Safe Motherhood and Newborn Long-Term Plan viewed comprehensive abortion care (CAC) services as integral to BEONC and CEONC and had a target of providing CAC services (medical and surgical abortion, and post abortion family planning) in all district hospitals by 2009. NHFS reported in 2015 that 85.5% of district hospitals that offered normal vaginal delivery services also offered CAC services. However, medical abortion is becoming more widespread as more women are choosing to buy medical abortion tablets from pharmacies. However, the MoHP is not yet able to address how to regulate medical abortion services from pharmacies. The 2016 NDHS reported that of the women who had an abortion, 72% had a medical abortion. Services were sought mostly at government facilities (31%), followed by private facility (27%), and 27% of women bought abortion medicine and took the medicine at home. About 13% chose to go to NGO managed facilities. NDHS 2016 also indicated that nearly 27% of pregnancies to women aged 35-49 end in abortion and this indicates a missed opportunity to encourage this age group to take up long-term family planning services.

### **3.3.3 Antenatal Care (ANC)**

ANC is a key strategy for providing care to a pregnant woman and her unborn baby throughout the pregnancy, and providing information for birth preparedness and delivery, as well as for identifying complications in pregnancy. But information and counselling has been relatively neglected, despite overall increases in ANC coverage. The 2006-2017 Safe Motherhood and Newborn Long-Term Plan does not specifically outline targets for ANC but indicates that a successful outcome of behaviour change activities would be: the proportion of pregnant women who receive 4 focused ANC check-ups, with tetanus toxoid, iron supplementation, de-worming and counselling for danger signs. ANC coverage increased from 46% in 2006 to 84% in 2016, and of those women who had ANC, 59% of them had 4 ANC visits (NDHS).

The timeliness of the 1<sup>st</sup> ANC visit is important for the health worker to be able to provide appropriate care that is relevant for gestational age and to encourage compliance with ANC supplements. Although NDHS 2016 reports that of those women who had any ANC, 76% had their first ANC visit on time, this does not necessarily indicate an early contact. GoN's ANC protocol

indicates that the first ANC visit should be before 16 weeks which is already well into the second trimester of pregnancy. The content of ANC service delivery is poor with only 0.2% of all health facilities providing all 5 components of ANC specified in service delivery protocols<sup>6</sup>. Although most poor women seek ANC services at health posts, compliance to service delivery protocols is particularly poor in these settings as only 4% of health posts are able to conduct haemoglobin tests, 5% urine protein tests and 3% urine sugar tests.

The key ANC measures for preventing deaths from haemorrhage are providing iron and folate supplements and deworming to all pregnant women; and misoprostol for those who are likely to give birth at home/without a trained health professional. The 2016 NDHS reported that 91% of pregnant women took any iron supplements. Approximately 70% of women took them for 90 days but only 42% took them for the recommended 180 days. Province 2 has the highest proportions of women with moderate/severe levels of anaemia and yet has low levels of 90-day iron tablet compliance and de-worming compliance. NDHS 2016 indicates that 14% of women whose birth was not assisted by a health professional received misoprostol tablets (from an FCHV or a health worker), and 13% took them, indicating that if misoprostol is distributed to women the compliance is high<sup>1</sup>. Misoprostol to prevent PPH following a home birth is currently implemented in 42 districts, but the major problem has been availability of misoprostol at health facilities and with FCHVs, for example the NHFS showed that only 30% of health facilities providing delivery care had misoprostol available (NHFS 2016)

Preventative ANC measures for pre/eclampsia and eclampsia are regular blood pressure measurement, urine protein detection and calcium supplements and health facilities should have a stock of magnesium sulphate. NDHS 2016 reported that 91% of women had their blood pressure taken and 76% reported having urine samples taken during an ANC visit<sup>1</sup>. Whilst, calcium supplementation is not yet a national programme in Nepal, 70% of health facilities that offer normal delivery services, however, did have injectable MgSO<sub>4</sub><sup>6</sup> available.

The key lesson for ANC is that all aspects of ANC need to improve, and that the health system needs to provide accurate information and that availability and distribution of misoprostol need to be ensured considering PPH still is the major cause of maternal deaths.

### **3.3.4 Obstetric Care**

The central strategy of the 2006-2017 Safe Motherhood and Newborn Long-Term Plan was institutional delivery and skilled birth attendance (SBA). The Long-Term Plan included ambitious targets for scaling-up services, such as, by 2017, training 7,000 SBAs; establishing birthing centres in 70% of health posts, Basic Emergency Obstetric and Newborn Care (BEONC) in 80% of primary health care centres and Comprehensive Emergency Obstetric and Newborn Care (CEONC) in 60

district hospitals. Nepal exceeded the Long-Term Plan targets for the establishment of birthing centres and CEONC sites, with government HMIS data from 2018/19 showing that 89 government and 100 private health facilities report that they provide caesarean section services, 158 government health facilities are BEONC sites and 1,862 health posts have birthing centres.

The functionality of these obstetric service sites needs to improve. Though oxytocin is available in almost all health facilities providing delivery care, storage under 2-8 degrees is not currently the policy nor the practice. Providing health facilities with a fridge to store oxytocin and other medications (vaccines) is required. The shortage of trained staff has severely hampered service delivery, in particular the provision of caesarean section. In 2011 the GoN provided additional funds to hospitals to be able to directly contract health workers to provide CEONC services. At the same time, sanctioned posts were also created for Doctors and Anaesthesia Assistants at 28 hospitals. Despite this, appropriate deployment of trained staff, frequent transfer of staff and difficulties in getting doctors willing to go to remote hospitals are all still critical problems, particularly in remote locations.

The Long-Term Plan recommended setting up birthing centres to provide more women with access to institutional delivery. Its target of establishing birthing centres in 70% of health posts triggered resources to be allocated from the Family Health Division's budget to set up birthing centres and for free delivery from the Aama Programme. However, the majority of birthing centres (95%) do not have the physical facilities, medical equipment, basic furniture and essential drugs as outlined in the Safe Motherhood Programme Guidelines<sup>7</sup>. Birthing Centres are staffed with Auxiliary Nurse Midwives who should receive in-service SBA training. On average, only half of health workers in a birthing centre had received SBA training and only 56% had received newborn resuscitation training. Only half counselled pregnant mothers on danger signs in pregnancy and only 56% washed their hands with soap and water before a vaginal examination.

Referral from BC/BEONC to a site where obstetrics and newborn complications are well managed is still a neglected area. FHD develop a referral guideline for MNH during 2015. However, the guideline was not endorsed nor implemented.

Management of newborn asphyxia was not included in the Long-Term Plan but in 2007, the Community Based Newborn Care Programme (CB-NCP) was introduced as a pilot in 10 districts. This programme paid FCHVs to make postnatal home visits to provide essential newborn care, identify and provide first line management of newborn complications and refer. Management of asphyxia with a bag and mask was included as one of the interventions but was later on dropped based on findings from an evaluation in 2007. The evaluation showed that the number of asphyxiated babies in the community was very low, as more women were starting to give birth in a

health facility and that FCHVs rarely attended a birth even if the mother gave birth at home. This also meant that FCHV's were not retaining their skills in the use of bag and mask.

The key lessons from the review are that there are more CEONC sites than needed, especially in the private sector. There are too few BEONC sites and those that exist appear to have low case-loads and/or poor functionality and there are a large number of birthing centres that provide poor quality of care. In areas that have good access, women are choosing to travel to give birth in tertiary facilities, which means that BEONC and birthing centres in these areas are often under-utilised. In remote areas, women are giving birth in BEONC and birthing centres but when complications do occur women and/or newborns need to be referred immediately and formal referral mechanisms are often not in place.

### **3.3.5 Caesarean Section and Medicalisation of Birth**

There has been an increase in caesarean section rate at the national level from 4.6% of live births in 2011 to 9.6% in 2016, which is still well within the WHO reference range of between 5 to 15%. Evidence however shows that caesarean section rates are high among women who gave birth in private hospitals (35%), among wealthier women (28%), and in Provinces 1, 3 and 4. But these rates are still very low for poor women and Province 6 (2%)<sup>1</sup>. It is likely that many women who need a caesarean section may not getting this service, while some women may be undergoing caesarean section even though it may not be medically indicated.

The way in which obstetric services are financed can have unintended consequences and encourage an increase in non-medically indicated caesarean sections. Private health care providers empanelled in the Social Health Insurance Scheme get reimbursed for their services at rates that are higher than the Aama Programme, in particular for caesarean section services. This could set a perverse incentive and could, at least in part, contribute to unnecessary caesarean sections at private facilities. This issue has not been examined closely, however, and there may be other drivers for the increase in caesarean section rates.

### **3.3.6 Postnatal Care (PNC)**

Postnatal care in the 2006-2017 Safe Motherhood and Newborn Long-Term Plan focused on health workers providing early PNC care (within 72 hrs of the birth) at home or at the health facility and Female Health Community Volunteers making postnatal home visits to advise new mothers and their families about caring for mother and baby. PNC in the Long-Term Plan was measured by the percentage of women who knew to wait for at least 24 hours to bathe their newborn and to keep it wrapped and warm. GoN's current protocol on postnatal care includes 3 postnatal checks – at 24 hours, 3 days and 7 days after birth – and all checks are to be provided at a health facility, contrary

to the recommendation in the Long-Term Plan which indicates that PNC should be provided by a health worker at home or at the health facility. The first postnatal check is particularly important given that most newborns die within 24 hours of birth. NDHS 2016, indicated that approximately half of the mothers and newborns (54%) had a postnatal check within 24 hours of birth. However, among women who did not give birth at a health facility, the majority (87%) did not have a postnatal check within 2 days of birth; and 62% of mothers from poorer families had no postnatal check compared to 16% from wealthy families<sup>1</sup>.

While 56.7% of mothers and babies reported receiving post-natal care within 48 hours of delivery, timing of PNC raises the question of how long post-partum women and babies stay at the health institution after delivery. 45% of mothers and 46.9% of babies received PNC within 4 hours, 9.4% mothers and 6.9% babies received care within 4-24 hours and 2.3% mothers and 3% babies received care within 1- 2 days. This data correlate with findings from over-crowded hospitals where women and babies are discharged 4-6 hours after delivery due to space constraints as well as poor awareness in the community.

### **3.3.7 Quality of Care**

The central strategy of the 2006-2017 Safe Motherhood and Newborn Long-Term Plan was to increase awareness of and access to obstetric services and there was less focus on quality. Towards the end of the Long-Term Plan GoN with the support of donor partners started to develop a number of tools to improve quality at different levels of the health system including clinical mentoring and the development of service standards. As a part of continuing education that can contribute to service quality, the National Health Training Centre (NHTC) provides follow-up refresher programmes for Skilled Birth Attendants, Paramedics, operating theatre management and Anaesthesia Assistants. GoN also provides on-site clinical mentoring for Skilled Birth Attendants, family planning and safe abortion services.

GoN has trained more than 8800 SBAs since 2007. However, the retention of skills by these trained SBAs is poor. A recent assessment by Nick Simon Institute (2013-16 data) of 511 SBAs shows they had very low skills, with the total clinical skills score being 48% (hospital staff 51% and BC/BEONC staff 46%). Very low numbers of cases were handled by these staff with 42% of them assisting less than 4 deliveries per month and only 7% assisting 15 deliveries per month which is the minimum recommended by the WHO to retain skills. Poor quality of training was also mentioned as a reason for this poor skills retention (NSI ppp 2018 during review).

GoN has developed Minimum Service Standards (MSS) for all levels of health facilities. These outline the minimum standards required in terms of governance, management of human resources, finances, information and quality, clinical management and the management of support services

that health facilities are expected to have in place. However, to date, the structure to monitor the quality of maternal and newborn services and what is expected in terms of inputs, outputs and outcomes and how this might be measured, is yet to be agreed.

## 4 ROAD MAP RECOMMENDATIONS

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The data analysis and programme review led to a set of recommendations which were laid out as the Road Map. The key recommendations are provided below:

### 4.1.1 Family Planning

- Emergency contraception is the method of choice for most young people and is widely available in pharmacies across the country. But emergency contraception is not included in the National Family Planning Programme and is not available at government health facilities. This is because there is some apprehension among government stakeholders about promoting emergency contraception as a method of family planning. The Road Map recommends that its inclusion in the National Family Planning Programme and in the Basic Health Care Services package should be considered.
- A greater emphasis on information and counselling on post-partum family planning during ANC, after delivery and before discharge from a health facility and during PNC visits is needed. Better provision of information and appropriate counselling could also assist in reducing the discontinuation rates of implants and IUCDs as the 2016 NDHS reported that the main reason for women discontinuing implants and IUCDs was 'concern for health'. Improved information and counselling can help reduce women's concerns.
- There are different models for providing long-term family planning methods, in particular implants and IUCDs. The first model could be to consider having a dedicated and trained family planning provider in the ANC, maternity and post-natal wards of high-case load hospitals. The other option is to employ trained health workers to visit lower-level facilities to provide all five methods on dedicated days. Providing FP services during immunisation clinics would increase post-partum women's easy access to FP services. This could be rolled out at scale.
- Developing a clear understanding of the key sociocultural and context-specific barriers to addressing adolescent sexual and reproductive health is essential in order to address teenage pregnancy rates. This information could then be used to provide appropriate information, counselling and/or accessible sexual and reproductive health services. NDHS 2016 data indicate that Province 2 has the highest teenage pregnancy rate, the lowest demand for family planning, the second lowest contraceptive prevalence rate and the highest levels of female sterilisation. Understanding the socio-cultural barriers to teenage pregnancy in this Province and how some young women and their families have navigated these barriers would be an important place to start.

#### **4.1.2 Abortion**

- In Nepal, abortion services can only be legally provided by a certified provider and at a certified site, which means that buying medical abortion from a pharmacy and using it at home is illegal. However, this practice is unlikely to change given the anonymity that a pharmacy provides to women and their partners. There is good evidence in Nepal that trained providers can identify gestational age and provide medical abortion services safely in a pharmacy setting. GoN should deliberate on the existing evidence and consider whether more research is needed or if the evidence is sufficient, to consider changing the law and regulating the distribution of medical abortion through trained providers in pharmacy settings.

#### **4.1.3 Antenatal Care**

- GoN's ANC protocol needs to change so that the first ANC visit is at 12 weeks of pregnancy as recommended by WHO. This will assist in providing timely and appropriate information according to gestational age and will provide an opportunity for women to take the full course of Iron and Folate supplements.
- WHO recommends that all women should have 8 ANC contacts during pregnancy. The Road Map recognises that this may be challenging for Nepal and recommends 4 formal ANC visits and that service providers should encourage women to have 4 additional ANC contacts.
- The quality of the information provided by a health worker during ANC is critical. A woman's experience of the first ANC contact will often determine whether she will come back for care and whether she will encourage her peers to use the service. The accuracy of the information provided and the way in which it is provided needs to improve. FWD's plan to develop MNCH card with critical information could improve the delivery of health messages.
- Preventative ANC measures for haemorrhage include ensuring that women who plan to give birth at home are given misoprostol tablets in the later stages of pregnancy. Birth preparedness and misoprostol are already part of the ANC programme but provision needs to be strengthened.
- For most women, ANC will be provided in a health facility and it should continue to be a facility-based service. It should also be made available everyday unlike the current practice of few days a week. For those women who live in remote and mountainous areas primary health care outreach services are also important. Primary health care outreach centres (PHC/ORC) do provide ANC but PHC/ORC services need to be extended to more remote locations so that women living in mountainous areas have access to a PHC/ORC clinic within 30 minutes. ANC services at PHC/ORC need to be strengthened to be more

comprehensive, including the monitoring of foetal growth and foetal heart rate. For this to be possible, PHC/ORC will need to be located at a fixed site and in a building with a least one room so that privacy and confidentiality are ensured.

#### **4.1.4 Delivery Care**

##### **CEONC and BEONC:**

- The only new CEONC sites established over the next five years should be in remote and mountainous areas, where such services do not exist. At existing sites in both the public and private sector it would be better to focus on improved functionality and quality. Particular areas of focus should be: the management of human resources; and the deployment, transfer and the retention of staff. The retention of skills also needs to be considered by rotating providers for short-periods from low case-load health facilities to high case-load sites and organising locum staff to cover any absence.
- Hospitals with high case-loads should be able to cater for low-risk as well as high-risk women. To manage low-risk women, on-site birthing units should be set-up located within the premises of high case-load health facilities so that there is quick access to CEONC services and management of complications if needed. The on-site birthing units should provide all BEONC signal functions and should be managed by Skilled Birth Attendants (staff nurses and ANMs) and in the future by midwives, to provide safe, cost-effective and positive birth experiences. On-site birthing centres should become models of care, that prioritise what matters to women, provide respectful maternity and newborn care, effective communication and allow companionship during labour and birth.
- Alongside on-site birthing units at overcrowded CEONC sites, there should be systems for the management of obstetric emergency triage on admission at referral hospitals, to counter any delays in receiving and managing women with complications.
- Given that the average time taken from the onset of a post-partum haemorrhage to death is 2 hours and the average time to death is even quicker in the case of an asphyxiated newborn, ideally all women in Nepal should live within a 2-hour radius of a CEONC site. In areas of the Terai with good transportation this should be the model of care. In areas where there is no CEONC site within 2 hours, a BEONC site will be needed with clear referral pathways to be able to transfer women and newborns with complications to a CEONC site. The functionality of BEONC sites in general, needs to improve.

##### **Strategic Birthing Centres:**

- In remote, mountainous areas, where there are no CEONC or BEONC sites within 2 hours, the Local Government needs to consider establishing strategic birthing centres in existing

health facilities. The birthing centres will not need to be located in every health post but need to be strategically placed so that all women can have access.

- The strategically located birthing centres need to provide services for normal delivery plus obstetric first-aid and newborn resuscitation. In case any complications arise, they should have clear and immediate referral links to the nearest CEONC site.

#### **Referral:**

- Referral costs for maternal and newborn complications are now free and are provided as part of the Basic Health Care Services Package. But referral pathways, including transport, need to be clearly established by Local and Provincial Governments. These should include which vehicles or air transport are available and needed; how different levels of health services communicate with each other and with communities; who is responsible for referring women and providing care during referral; and the care that needs to be set up on arrival at the receiving facility.
- In remote and mountainous locations, high-risk pregnant women should be encouraged to come to a CEONC referral site to await delivery and Local Governments and/or Provincial Governments should make sure that CEONC referral sites have the infrastructure and equipment to accommodate these women and their care-providers and that their costs are covered. These considerations should be part of the referral framework between Local and Provincial Governments.

#### **Health Posts:**

- If the recommendations above are followed, there will be many Health Posts that do not have delivery services. These health posts should focus on providing high quality facility-based and outreach services for family planning, ANC and postnatal care.
- Local Governments will need to ensure better tracking of pregnant and postpartum women, including an understanding of where women plan to give birth and where they might go after birth.

#### **Financing of Care:**

- GoN should consider different ways of reimbursing health care providers for services from the Aama and the Social Health Insurance Programmes, such as equalising fees for vaginal births and caesarean sections or paying by output based on an expected ratio between vaginal births and caesarean sections. GoN should consider testing these new ways of reimbursement for a defined period of time alongside rigorous monitoring and evaluation to arrive at the most useful option.

### Quality of Care:

- Regular monitoring of caesarean section is good practice. Hospitals with CEONC services should monitor caesarean section rates using WHO’s Robson classification criteria and the Federal Government should conduct periodic studies using WHO’s C-model in both public and private health care facilities.
- It would be helpful to carry out an in-depth study of mothers’ (including disabled mothers’) experience of care received, in particular during health facility delivery, to understand whether care is patient focused, dignified and respectful. This information could be used to develop best practice in on-site birthing centres and in strategic birthing centres.
- Minimum service standards need to be expanded. These could be accompanied by on-site clinical mentoring focusing on the continuum of care. The aim would be to improve service readiness, staff skills and practice. Monitoring using a dashboard approach should be used to ensure implementation by Local or Provincial Government, or at individual hospitals.

#### 4.1.5 Postnatal Care

- Ensure all mothers and babies are discharged from health facilities at least 24 hours after birth and that the PNC check for mothers and newborns is integrated into the discharge protocol. This will mean that health facilities will need to have an appropriate space for women and their newborns which encourages women to stay longer than at present.
- In order to comply with the 2015 WHO PNC guidelines, the frequency of PNC checks needs to increase from 3 to 4 visits and the PNC schedule needs to change as outlined below in Table 2.

*Table 2: Recommended New Schedule and Timing for PNC visits*

PNC check (for mother & newborn)	Facility Delivery	Home Birth
24 hours after birth	At facility and integrated into discharge protocol	Home visit by ANM or midwife as soon as possible but within 48 hours of birth
3 days after birth	Home visit by ANM or midwife	Home visit by ANM or midwife
7 – 14 days after birth	Home visit or health facility visit	Home visit or health facility visit
6 weeks after birth	Health facility visit	Health facility visit

- The Road Map also recommends that some PNC visits are carried out by health providers in a women’s home. For women who give birth at home this will require FCHVs to identify home births and to inform local health facility staff. For women who give birth in a hospital, health care providers will have a responsibility to take more details during discharge of where a mother plans to stay during the post-partum period and will need to pass this information on to the nearest health facility.

## 5 CONCLUSION

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The 2006-17 Safe Motherhood and Newborn Long-Term Plan set ambitious targets for SBA and institutional delivery which defined the framework for how obstetric services at health facilities have been organised and delivered over the past 10 years. This strategy was incredibly successful at encouraging women to give birth at health facilities and this achievement cannot be highlighted enough. However, this focus came at the expense of high rates of teenage pregnancy, short birth-intervals, sub-optimal newborn care and a relative neglect of the importance of ANC and PNC services in preventing maternal and newborn deaths. It is also clear that the model of having birthing centres at health posts has not worked effectively, and sub-optimal care in some areas appears to mean that women are actively choosing to give birth at tertiary facilities.

Now is the time to pay attention to reducing the main causes of maternal and newborn deaths, improving ANC and PNC, focusing on high compliance with proven interventions and identifying high-risk women and newborns. High case-load tertiary facilities should provide quality services for both high-risk and low-risk women and on-site birthing units should be rapidly established to promote a model of care for low-risk women and encourage a positive childbirth experience. This is particularly important given that in most of South Asia the model of providing obstetric care is dominated by physicians and an over-medicalisation of birth.

The approach that is proposed for remote mountain areas of having strategically located birthing centres will need to be closely monitored and evaluated. The key here, will be to ensure that well-managed and resourced referral mechanisms that are site specific are set up and agreed by Local and Provincial Governments. The test of the rural model for childbirth will be whether these referral mechanisms can function to successfully manage maternal and newborn complications and save lives.

Multi-sectoral approaches which go beyond the remit of the Road Map also need to be considered by the MoHP and GoN. For example, to improve sexual and reproductive health amongst teenagers, collaborative efforts between MoHP and other Ministries should be considered. A focus on implementing the existing school curriculum on sex education and life skills, which is comprehensive and was a compulsory subject until 2018. Many teachers are reluctant to discuss the content of the curriculum and creative ways to deliver the content and then to continue the conversation with peer groups need to be considered. Examples of peers working together to keep vulnerable girls in school, including by developing life skills, has been developed by Voluntary Services Overseas (VSO) and their Sisters for Sister project, which is funded by DFID, and could be expanded to include sex education.

Finally, the Road Map's success will be largely dependent upon how well it is implemented across Provinces and Local Government. Efforts have been made to engage Provincial and Local

Government actors during the development of the Road Map but the Federal Government and donor partners will need to support the development of 5-year activity level plans and to ensure that these plans are effectively monitored. Monitoring whether women are receiving all services across the continuum of care (4 plus ANC visits, institutional delivery and 4 PNC visits) will be important alongside monitoring equity and ensuring that all activities are focused on reducing the inequalities in access to and utilisation of maternal and newborn health services.

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<sup>1</sup> Ministry of Health, New ERA and ICF (2017) “Nepal Demographic and Health Survey, 2016”

<sup>2</sup> Ministry of Health, World Health Organisation, Nepal (2018) Maternal and Perinatal Death Surveillance

<sup>3</sup> Pradhan A. et al. (2010) “Nepal Maternal Mortality and Morbidity Study 2008/9” Department of Health Services, Ministry of Health

<sup>4</sup> Regmi S et al (2016) “Access to family planning services by young people in Nepal – barriers and evidence gaps A review of the literature”

<sup>5</sup> Sherpa LY et al (2018) “Mapping the Consumer Journeys of Nepalese Youth to Access Voluntary Family Planning and Contraception” PSI, Nepal

<sup>6</sup> Aryal, KK., Dangol, R. et al (2018) “Health Services Availability and Readiness in Seven Provinces of Nepal”. DHS Further Analysis Reports No. 115. Rockville, Maryland, USA: ICF

<sup>7</sup> Ministry of Health (2014) “Results from Assessing Birthing Centres in Nepal”