

## Safe Delivery Care: Policy, Practice and Gaps in Nepal

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### ABSTRACT

Delivery care is regarded as safe when it is attended by a skilled birth attendant either at health facility or home. Childbirth practices differ from place to place and are determined by availability and accessibility of health services. After National Health Policy (1991), Nepal has focused on safe motherhood policies and programmes. Maternal mortality ratio decreased nearly fourfold between the years 1990 to 2011. The country is likely to achieve the Millennium Development Goal (MDG) 5. However, indicators of the MDG 5: skilled care at birth and institutional delivery rates are very far from the targets. From the initial findings of limited studies, safe delivery incentive programme has been successful for increasing the skilled care at birth and institutional delivery and reducing the maternal mortality twofold between the years 1990 to 2011. In spite of numerous efforts there is a wide difference in the utilization of skilled care at birth among the women by area of residence, ecological regions, wealth quintiles, education status, age and parity of women, caste ethnicity and so forth. This difference indicates that current policies and programmes are not enough for addressing the low utilization of safe delivery care throughout the country.

**Keywords:** *delivery practices; gaps; Nepal; place of delivery; safe delivery care policy.*

### INTRODUCTION

There is unanimous consensus at international level on the definition of safe delivery. Safe delivery is regarded as that which is attended by skilled birth attendants either at health facilities or homes.<sup>1,2</sup> In 1999, for the first time WHO, UNICEF and World Bank jointly defined skilled birth attendant as "exclusively referring to people i.e. midwives, nurses and doctors with midwifery skills who have been trained to proficiency in the skills necessary to manage normal deliveries and diagnose, manage or refer obstetric complications..."<sup>3</sup>

Childbirth practices differ in places, countries, cultures and are determined by availability and accessibility of the health services.<sup>4,5</sup> From early history, childbirth care was accepted as a humanitarian act and attended

by midwives either at home or any convenient place to the woman. Women were given priority for care with culturally respected environment during the natal period.<sup>6,7</sup> It is a complicated process which is not under the control of the woman giving birth.<sup>1,6</sup>

Globally, one-third of deliveries take place at home without skilled health workers.<sup>8</sup> There is a huge gap between the developed and developing countries with respect to child birth practices. In developed countries almost all deliveries are attended by skilled health

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workers in the hospital, on the other hand nearly two-thirds deliveries handled by traditional midwives or alone at home in developing countries.<sup>9-11</sup>

For reducing the maternal mortality and morbidity, skilled intra-natal care is a crucial input. There is worldwide consensus to increase the access of skilled care at birth and provide better quality emergency care services to reduce the high morbidity and mortality. Most of the countries have agreed to integrate skilled care including emergency obstetric care services at birth into their national health care system.<sup>12,13</sup>

For achieving the Millennium Development Goal 5, South East Asian and African countries ought to decrease the maternal mortality at a higher rate (5.5%); currently the annual decrease rate is only 2.5%. In almost all African countries, the average annual decline rate is less than one percent and they are less likely to achieve MDG by 2015.<sup>9,14-19</sup>

Most of the maternal deaths occur during labor, delivery and the early postpartum period. The major direct causes of the maternal mortality are obstetric hemorrhage (25%), infections (15%), unsafe abortion (13%), eclampsia (12%) and obstructed labor (8%).<sup>20,21</sup> More than 50% maternal deaths are directly related to home delivery practice which is common in developing countries particularly in Sub-Sahara Africa and South East Asia.<sup>22,23</sup>

### Safe delivery care in Nepal

Nepal being a country of geographical diversities most of the part consists of mountains and hills where is very difficult to reach the health facilities in right time.<sup>24</sup> Many maternal deaths (11 to 13%) occur in the transit to the hospital. Technically these deaths are excluded from the health records.<sup>25</sup>

Despite the high prevalence rate of home deliveries (64.7%), only 5.7% pregnant women used clean delivery kit during home delivery in Nepal.<sup>26</sup> The use of the clean delivery kit was found statistically significant (odd ratio/chance 0.52) in reducing neonatal mortality (57%), sepsis and other infections.<sup>27</sup>

However, maternal mortality of Nepal has declined noticeably even though the proportion of births attended by skilled persons, delivery conducted at health facilities and access to emergency obstetric care are not increasing as per the expectation. Everyday nearly six women die of pregnancy and related causes, only one-thirds (35.3%) women delivered at health institutions and only 36% women sought skilled care at birth.<sup>28</sup>

As a signatory country of Millennium Declaration, Nepal is facing the huge challenge of reducing the high maternal mortality ratio by increasing the utilization of skilled birth attendants. Nepal started the Maternal Incentive Scheme (2005) to address the financial barrier for seeking skilled care at birth and reduce the emergency obstetric related maternal deaths.<sup>14</sup> The incentive schemes consist of conditional cash transfer to the women who deliver at health facilities, exemption of user fees for those residing in the least developed one third of districts and cash incentive to the health workers who conduct delivery either at health facility or home. Subsequently, Nepal has changed Maternal Incentive Schemes into Safe Delivery Incentive Programme, 2005.<sup>29</sup>

For strengthening the safe delivery programme, there were formulated the Safe Motherhood and Neonatal Health Long Term Plan, 2006–2017 and the National Policy on Skilled birth Attendants (SBAs), 2006. In 2009, Government formulated National Free Delivery Policy and launched Rastriya Aama Surakchhya Karayakram (Safer Motherhood Programme) throughout the country.<sup>30</sup>

Regardless of the maternal health care incentives i.e. conditional cash transfer, free delivery care and cash incentive for health workers still nearly two-thirds (64%) pregnant women deliver their baby at home without skilled health workers in Nepal.<sup>26,31</sup> Very limited (5.7%) households used clean delivery kit.<sup>27</sup> This article assesses the safe delivery care related policies, programmes and the factors associated with delivery practices and policy implementation gaps in Nepal.

### Why this review ?

In spite of the few delivery complications, it is well documented that skilled care at birth can minimize most of the intra-natal and postpartum complications, reduce maternal morbidity and mortality and improve child survival rate. Safe Delivery Incentive Programs must inspire the women for moving to the health institutions and SBAs for delivering their baby. After implementation of the Safe Delivery Incentive Programme in Nepal; institutional delivery and SBA care at birth have increased nearly two fold between the years 2006 to 2011, from 19.1% to 36.1%. However, the proportion of skilled care at birth and institutional delivery are very far from the indicators of the millennium development goal 5.<sup>28</sup>

There is limited evidence on underlying causes of low utilization rate of institutional delivery and SBA care in Nepal. Research on maternal health issues is a priority agenda of the stakeholders, governments and others health and development partners as also stated in the

government's policy documents.

## METHODS

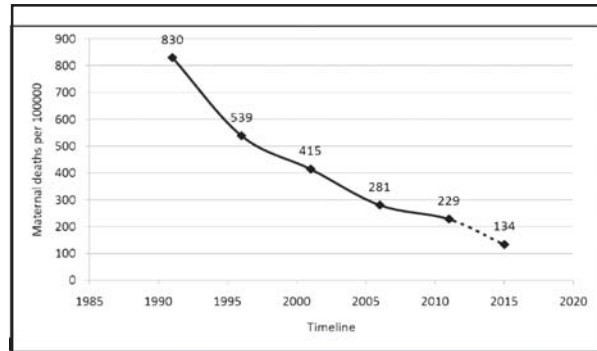
We adopted online search method for obtaining the scientific literature. The main sources for searching are Pubmed, ScienceDirect, Google Scholar, Cochrane review databases, World Health Organization, Averting Maternal Death and Disability, Ministry of Health and Population Nepal WebPages published between the years 2000 to 2013. We searched literature by using key words: "Nepal" and "safe delivery care policies/programs", "associated factors of delivery practices", "remaining gaps in utilization of skilled care at birth", "home delivery", "institutional delivery", "places of delivery", "maternal incentive schemes", "conditional cash transfer", "free delivery care", "safe motherhood policy/program" "delays in delivery care" and "financial/barriers for seeking delivery care". Published and grey literature was reviewed for getting the further information on safe delivery care policies and factors associated with delivery practices in Nepal. We screened search results as per the objectives, designs, methods, settings and findings of the studies and organized by using referencing software Zotero Standalone.

### Maternal mortality

Globally, around 287,000 women died due to pregnancy related causes in 2010. Maternal mortality ratio is extremely high in under developed countries. Nearly one-third maternal deaths occurred in south Asia and more than two-thirds happened in Sub-Sahara Africa. Between the period 1990 to 2010, the global maternal mortality rate come down three percent annually which is below the target (5.5%) set by the Millennium Development Goal.<sup>32</sup> Women in developing countries have high pregnancy rate (total fertility rate, 3.9) and their lifetime risk of death due to high pregnancy is also high compared the women of the developed world.<sup>32</sup>

Despite continuous efforts, a woman dies every four hours. The major causes of maternal death are haemorrhage (24%), eclampsia (21%), infections (9%), unsafe abortions (7%) and obstructed labour (6%) are the leading causes of maternal deaths in Nepal.<sup>25,31</sup>

However, Nepal is on track in achieving MDG target of reducing maternal mortality ratio which has declined from 850/100,000 live births in 1990 to 415 in 2000 and further to 229 in 2011.<sup>30</sup> Maternal mortality trend of Nepal is presented in (Figure 1).<sup>14,31-37</sup>



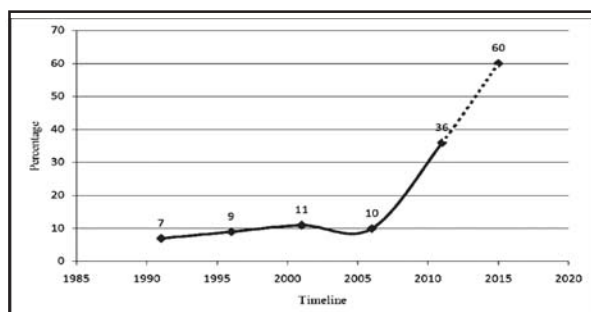
**Figure 1. Trend of maternal mortality in Nepal, 1990-2011**

### Delivery practices: home vs. institution

Childbirth attended by skilled health workers is indispensable to reduce the maternal and neonatal deaths. The proportion of births attended by SBAs is more than 90% in WHO's Europe, America and Western Pacific regions. However, Africa, South East Asia and Eastern Mediterranean regions need to progress from the current despondent situation where Africa region has only 48% skilled birth attendance rate. With 59% skilled birth attendance, South East Asia and East Mediterranean regions follow the Africa region.<sup>9,32</sup>

In Nepal, between the years 2006-2011, nearly two-thirds deliveries occurred at home without skilled birth attendants. On the other hand, in the rural areas, among the institutional deliveries, nearly six percent childbirths were conducted by other untrained health workers i.e. health assistants (HA), auxiliary health workers (AHW), maternal child health workers (MCHW) and village health workers (VHW).<sup>31</sup>

The proportion of skilled care at birth has been to be varied by residence, socio-economic status, geographical regions, educational status, age and parities of the women. Nearly three-fourths (72.3%) in urban areas, 35% in semi-urban areas and 17.5% in rural areas women attended health facilities for delivery respectively.<sup>38</sup> The details of skilled care at birth in Nepal are shown in (Figure 2).<sup>14,31-37</sup>



**Figure 2.** Trend of skilled care at birth in Nepal.

### Factors associated with delivery practices

As a major public health problem, high home delivery practice prevails in most of the under developed countries. These countries have almost all similar reasons for home delivery practices. Socio-cultural factors, perceived benefit/need of skilled attendance, economic and physical accessibility have prominent role in childbirth at home.<sup>39</sup>

Nepal Demographic Health Survey (2011) revealed that maternal mortality ratio of Nepal had declined from 530 to 229 per hundred thousand live births between the years 1996 to 2011. Despite this tremendous achievement, there are nearly two-third women who deliver their baby out of health facility without skilled care attendants.<sup>31</sup>

We have found several studies on the contributing factors of delivery practices in Nepal. The main findings are lack of transportation, long distance to the health facility, unfriendly provider's attitude, poor service delivery systems and physical infrastructure, women's age above 35 years, high parities, low education status, low perceived attitude towards safer pregnancy and delivery care, rural residence, gender inequality, traditional socio-cultural practices and faiths towards delivery care, low decision making power and socio-economic status of women, geographic constraints as important factors.<sup>39-41</sup> Among these factors distance to the health facility, age of mother s(<20 & >35), number of parity and gender disparity have inverse relationship with seeking the skilled care at birth.<sup>25</sup>

### Safe delivery policies and programmes

Following the Nairobi Conference (1987) and its 10<sup>th</sup> anniversary meeting, Nepal started safe motherhood programmes by collaborating with donors in very limited areas. National Safe Motherhood Program (2002–2017), Safe Abortion Policy (2003), Safe Delivery Incentives Programme (2005) and Skilled Birth Attendants Policy

(2006), National Free Delivery Policy (2009) have been promulgated for achieving the MDG 5. Safe delivery incentives seem successful for addressing the three delays of delivery care and increase the clients flow to health facilities.<sup>42-44</sup>

During 30 years from 1960 to 1990, numbers of hospitals were established at district, zonal, regional and central levels and many health centres and health posts were established at the local level. However, the maternal and child health status of the Nepal did not improve as the nation's aspiration.<sup>45</sup> After restoration of the democratic system since 1990, Nepal promulgated numerous policies and programs for improving the health status of women and children which are given in table 1.

**Table 1.** Policies and programmes on maternal, neonatal and child health in Nepal.

Policies/Programmes	Endorsed Date
Second Long Term Health Plan (1997 – 2017)	1997
Safe Motherhood Policy (1998)	1998
National Safe Motherhood Program (2002–2017)	2002
National Safe Abortion Policy (2003)	2003
Maternal Incentive Scheme (2005)	2005
Safe Motherhood and Neonatal Health Long Term Plan (2006–2017)	2006
National Policy on Skilled Birth Attendants (2006)	2006
National Free Delivery Policy (2009)	2009
Nepal Health Sector Programme Implementation Plan II (2010 – 2015)	2010

Nepal considers maternal and child health as a central agenda for developing the health policies and programmes. Over the last two decades, Nepal had had substantial progress by reducing the maternal mortality, from 539 to 229 per 100 thousand live births between the years 1996 to 2011. However, the proportion of birth attended by health workers and institutional delivery are not increasing as per the targets of MDG and national health policies and programs.<sup>7,12,20</sup>

### Safe delivery care: remaining gaps in utilization of skilled care at birth in Nepal

Regardless of incentives and efforts, skilled care at birth and institutional delivery rates of Nepal are very far from the indicators of the MDG, 60% skilled care at birth and 40% institutional delivery till 2015.<sup>14,38</sup> The proportion of skilled care varies among residences:

urban (72.7%) and rural (32.3%), ecological regions: mountain (18.9%), hill (30.4%) and Terai (42.8%), education of mothers: illiterate (19.4%), SLC and above (76%), wealth quintiles: lowest (10.7%) and height (81.5%), age (19.9% in higher age group 35 and above), parity( four and above 10 to 18%). The mother's age above 35 years and high parities both are considered as high risk groups.<sup>31</sup> There is almost similar situation in utilization of skilled care at birth and institutional delivery. It indicates enormous challenges in front of Nepal for achieving the MDG 5 by tackling the various gaps in utilization of safe delivery care throughout the country.

## DISCUSSION

Although maternal mortality has declined noticeably in Nepal, persisted low proportion of skilled care at birth, institution delivery and unequally access of emergency obstetric care facilities. Policy documents and research findings were reviewed for assessing the low utilization rate of skilled care at birth and institution delivery in spite of the availability of free delivery care and other maternal incentives.

WHO, UNICEF and World Bank have also focused on the high maternal mortality particularly in developing countries since 1980's. After Nairobi Conference (1987) on safe motherhood, there called to all the countries for promulgating and implementing the safe motherhood policies and integrating the safe motherhood programme in the national health system.

Nepal has been concentrating on maternal and child health care from the beginning of 1990's and started safe motherhood programme in 13 selected districts at first time in 1997. Afterward, Nepal formulated and implemented numbers of policies and programmes on safe motherhood care. Country has succeeded to reduce the maternal mortality ratio rapidly and is likely to achieve the MDG 5 by the year 2015.<sup>25, 31,47</sup>

But, the proportion SBA care (36%) of Nepal is itself lower with compared to the proportion of other south east Asian countries (except Bangladesh) and average of the region(59%).<sup>17,27,48</sup> There is huge gap in the utilization rate of skilled care at birth and institutional delivery among the different socio-economic strata, ecological regions, different caste and ethnic groups, education status and age of women, number of parities, residences and distance to the health facilities.<sup>31</sup> Despite the enormous efforts, Nepal is facing huge challenges for increasing the utilization rate of skilled birth attendance proportionally across the country.

First time in 2005, Nepal started maternal incentives scheme with aiming to reduce higher maternal

mortality ratio in selected districts which had low human development index. This scheme consisted of conditional cash transfer to the women for health facility birth, exemption of user fees and financial incentive to the health worker who attends delivery either at health facilities or at homes. Afterward, clients' flow has lifted up in the public health facilities significantly.<sup>29</sup> Similar evidence was revealed in low and middle income countries conditional cash transfer programme raised the utilization rate of preventive health care programmes and was improving the health status of the community people.<sup>49</sup>

From the short term evaluation of maternal incentives scheme and getting positive feedback; Nepal introduced Rastriya Aama Surakhya Karayakram throughout the country. All health facilities which provide delivery care they get fixed unit costs as a category of health facility and nature of the delivery. This refunding scheme is mainly helping to strengthen the capacity of health institutions and increasing the inflow of the clients. The conditional cash transfer to clients and health workers is addressing the financial barriers on the demand side and reducing the different delays of delivery care.<sup>50,51</sup>

Geographical constraints, limited and centralized health facilities, frequent shortage of skilled human resources, low utilization of antenatal care, high parity, poverty, illiteracy, traditional socio-cultural practices and beliefs, interruption in cash released and supplies, political instability and unstable government hindered for increasing the SBA care and institutional delivery in Nepal. We found similar findings in Kenya where urban habitants, high wealth quintiles, using antenatal care and low parity were strong predictors of safe delivery care utilization.<sup>52</sup>

Despite the number of constraints, Nepal has achieved nearly twofold progress by elevating the SBAs care from 19% to 36% between the years 2006 to 2011. However, country is not likely to meet millennium development target, 60% skilled care at birth by the year 2015.<sup>25,31,40</sup>

We found various studies on maternal health care which were focused on maternal mortality, skilled birth attendants, institutional delivery, home delivery, emergency obstetric care and so forth. Most of the studies showed the descriptive findings on maternal health. We observed that the results were ambiguous because there has reduced maternal mortality in last two decades considerably without expecting improvement of its proxy indicators i.e. skilled care at birth, institutional delivery and accessibility of emergency obstetric care services. Similarly, studies described the situation rather than exploring the causes of the slow progress of maternal mortality indicators.



## CONCLUSIONS

In 1991, Nepal formulated National Health Policy following which the country has concentrated on reducing the high maternal and neo-natal mortality. Since 1998 to 2009, Nepal has developed many policies and programmes on maternal health care as a signatory of the national and international commitments.

Unsafe delivery practice is one of the major causes of maternal mortality in Nepal. Government started focused programmes i.e. safe delivery care programmes for promoting the safe delivery care throughout the country. Government formulated National Skilled Birth Attendants Policy, Safe Motherhood and Neo-natal Health Long term Plan, National Free Delivery Policy to assure the different safe delivery incentives. From the middle of the 2009, government integrated different safe delivery care incentives as a package i.e. *Rastriya Aama Suraksha Karyakrama*.

Between the years 1990 to 2011, the maternal mortality ratio declined drastically and country is likely to achieve the Millennium Development Goal 5. However, there are contradictory results between fast reduction of the maternal mortality ratio and the slow progress of its indicators i.e. proportions of skilled care at birth and institutional delivery. Most of the studies have not focused on the slow progress of the millennium development indicators and why it has remained so.

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