

State of Maternal, Newborn and Child Health Programmes in Nepal: What May a Continuum of Care Model Mean for More Effective and Efficient Service Delivery?

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ABSTRACT

The cost-effective interventions exist across the continuum of maternal to child survival at each level of the health system that can contribute to achieve the Millennium Development Goals 4 and 5. However, implementation inefficiency, low coverage and equity gaps along this continuum remain a serious challenge to Nepal's efforts to achieve these goals. This paper proposes a continuum of care model; discusses the readiness of policy and programs to provide high impact interventions across the continuum; identifies existing gaps in MNCHN programs; and recommends policy and program actions to improve coverage, equity, effectiveness and efficiency along the continuum of MNCHN service delivery in Nepal. The literature review includes systematic desk review, followed by discussions and deliberations amongst a group of professionals and MNCH experts in Nepal. Within the government health system in Nepal, a continuum of care approach is feasible, as policies and plans exist to ensure an integrated approach across the maternal to child care continuum. However, health programs largely remain vertically oriented. Achieving integration across the maternal to child continuum of care remains a challenge at each level of health system. An integrated system of program management for maternal, newborn and child health would be a feasible solution to enable an efficient and effective delivery of intervention packages. A collaborative and partnership approach to strengthen health systems, building managerial capacity, improving governance and engaging the private and civil sectors remains vital to achieve effective coverage and improve equity across the continuum of care.

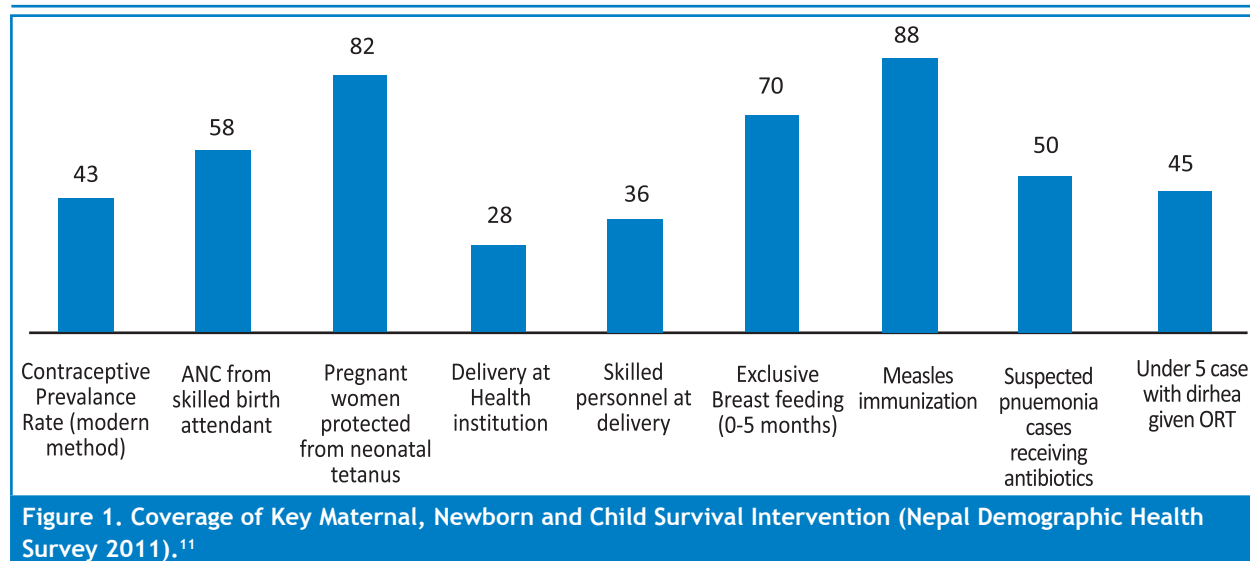
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INTRODUCTION

Globally 7.2 million children die before their fifth birthday each year, more than 40% (2.9 million) of them during their first four weeks of life and 273,500 women die due to maternal cause.^{1,2} This burden of deaths has drawn major public health attention since two of Millennium development goals³ focuses on health and survival of mother (MDG 5) and reduction in child mortality (MDG 4). Attention has also considerably increased for MDG 1 which has child undernutrition as one of the indicators and improved child nutritional status is important to achieve other MDGs including the

two mentioned above. Furthermore, undernutrition is shown to be an underlying cause of significant proportion of child deaths.^{4,5} To reduce the burden of mortality and morbidity, the evidence-based cost effective maternal, newborn, child development, nutrition interventions⁶⁻¹⁰ have been identified in the last decade which if implemented with effective coverage can improve health outcomes in mothers, newborns, and children. However, the global context¹¹ as well as in Nepal shows that the coverage gap exists across the continuum of care of life cycle, with the widest gap in the newborn

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period followed by the pre-pregnancy period (Figure 1). High coverage exists for interventions which are pre-scheduled and done through campaign such as measles vaccination (88%) and Vitamin A supplementation (95%).¹² The coverage indicators for maternal, neonatal and child health interventions such as contraceptive prevalence, antenatal care, skilled attendance at birth, postnatal care, case management of sick children are still low. For all of these services, interventions need to be available at the community, outreach and facility levels around the clock. Furthermore, there is a need for health system strengthening along the continuum of service provision from community to hospital. This should help address the known equity gap in the Maternal, Newborn, Child health (MNCH) interventions that exist across socio-economic status, education¹³ and caste and ethnicity.

The coverage gap and global recommendation on integration of programs and policy^{14,15} has initiated a global and nationwide discussion among academia, policy makers, researchers, and agencies on what are the cost effective interventions and how packages can be delivered within the existing health system such that good coverage and effective scale up takes place, ensuring that the implementation of interventions does not overburden the health workforce, drug supply, health financing, and information systems.

This paper, first in the series, discusses the continuum of care model in Nepal, readiness of policy and programs for continuum of care, and existing gaps in MNCH programs in the current health system. The authors provide policy recommendation towards strengthening a continuum of care model to improve equity, effectiveness and efficiency of MNCH service delivery.

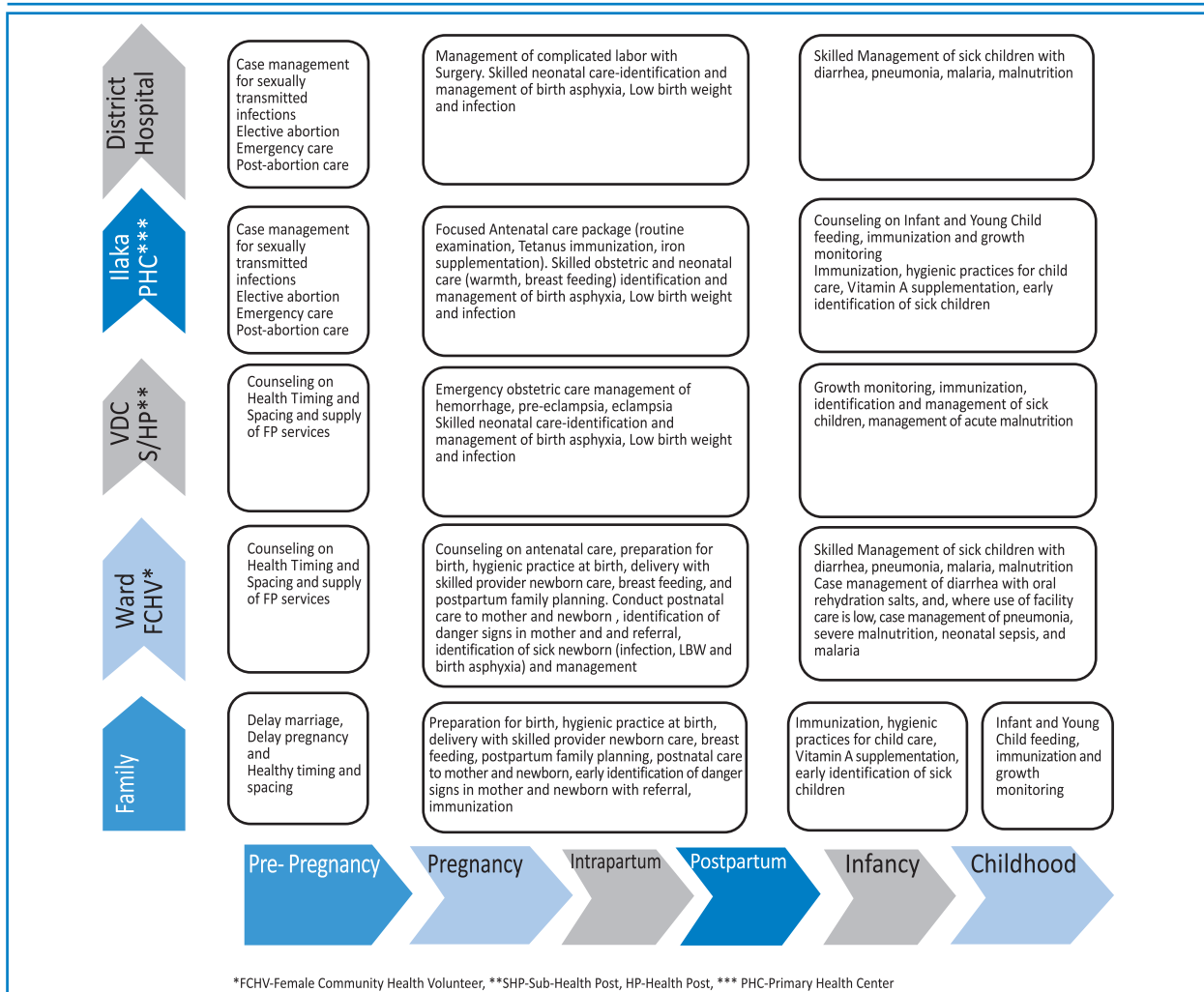
LITERATURE REVIEW

An extensive desk review of national policies, existing programmes, coverage for key indicators, and current attempts at integration was done. A literature review on models, global experiences and recommendations was completed to put the Nepal situation in perspective. Finally ongoing discussions on the health sector, and deliberations (through workshops and group discussions) amongst a group of professionals working on MNCH in Nepal were conducted.

DISCUSSION

Continuum of Care Model

The continuum of care can be defined over the dimension of time (throughout the lifecycle), and over the dimension of place or level of care.¹⁶ The continuum of care over time includes care before pregnancy (including family planning services, education, and empowerment for adolescent girls) during pregnancy; and through the most vulnerable 5 years of a child's life. The continuum of care for service delivery includes integration of health service delivery, including care provision taught to families, services provided at the community level, outreach services, and services at all facilities from sub-health post to referral hospitals.¹⁶ In Nepal, the level of care exists at five tiers 1) at household level, 2) at community level through Female Community Health Volunteer, 3) at village level through the primary outreach clinics and sub-health post by community health workers, 4) at first level referral (sub-district or Ilaka) by skilled care provider -doctors, nurses, auxiliary mid-wives, paramedics and community health works, 5) at second level referral district hospital by skilled provider, paramedics and at some places by specialized doctors (Figure 2).



*FCHV-Female Community Health Volunteer, **SHP-Sub-Health Post, HP-Health Post, *** PHC-Primary Health Center

Figure 2. Continuum of Care Model for Nepal- Adapted from Lawn, Cousens et al³⁷ and Kerber, de Graft-Johnson et al.¹⁴

The Government of Nepal has been progressive in adopting results from controlled trials, piloting the intervention described, and initiating programs at scale. Since research findings appear sequentially, this has resulted in sequential introduction of a number of key interventions, creating inefficiency in both training and service delivery. While there have been attempts to integrate interventions through different packages, this approach has not been done holistically, and training and service delivery gaps exist with regard to interventions needed across the life cycle, and across the spectrum of service delivery opportunities.

MNCH policies and programmes in Nepal

The Nepal Health Sector Programme -II 2010-2015¹⁷ which follows on Health Sector Strategy-Agenda for Reform¹⁸ and Nepal Health Sector Programme Implementation Plan I 2004-2009¹⁹ provides guidance for “more focus on a community-based programs and strengthening

of referral sites, integrating newborn interventions with child health and maternal health programs; strengthening the district management capacity for effective implementation of packages and engaging the private sector for more holistic programming”, Similarly, The National Safe Motherhood and Neonatal Long Term Plan 2006-2017¹³ plans to strengthen and expand delivery by skilled birth attendant, basic and comprehensive obstetric care services (including family planning) at all levels through development of infrastructure, protocols, strengthening human resource capacity and referral management system from communities to district hospitals for obstetric emergencies and high-risk pregnancies. Similarly, The National Neonatal Health Strategy-2004²⁰ outlined the strategy to improve the health status of newborns and presents a vision of a family-to-referral continuum of care. The strategy recommends integrating newborn health interventions into maternal and child health programs. Similarly, National Nutrition Plan of Action 1998 developed by

National Planning Commission and National Nutrition Policy and Strategy 2004²¹ developed by Child Health Division stressing on incorporating nutrition in respective sectoral development policies and programmes and incorporation of nutrition specific plans within existing child survival and maternal health and family planning as a general guiding strategy to improve nutrition situation in Nepal. The policies, plans and strategies call for an approach including a continuum of care from mother to newborn to children and from household to hospital. However, no clear direction has been given on how such a continuum of care model would be implemented within the existing health system.

Health Systems to deliver the MNCH program

The Ministry of Health and Population defines the sector wide policy and programs while the Family Health Division and Child Health Division are the technical leads in the Department of Health Services responsible for delivering maternal, newborn and child health and nutrition services. The piloting, implementation, and scaling up of these programs throughout the country are planned and resourced through these divisions. The Family Health Division is responsible for reproductive health program-adolescent, maternal and newborn health program,²²⁻²⁵ and the Child Health Division is responsible for child health program-Expanded Program for Immunization,²⁶ Community Based Integrated Management of Childhood Illnesses (CB-IMCI) Package²⁷ Community Based Newborn Care Package (CB-NCP)²⁸ and Nutrition programs .

The district public health office is responsible for implementation at the district level. This includes planning, implementation, managing commodities, and providing financing for implementation of programs at district level and below. Furthermore, the district hospital links both to higher referral-level health facilities within the national health system, and with primary health care centers and peripheral health facilities under the district system.

Maternal, Newborn and Child Health Package and approach of programming

Different maternal, newborn, child health and nutrition packages exist in Nepal which are either being scaled up throughout the country or in the process of being scaled up (Table 1). While each package has a community or a health facility focus, most interventions in these packages lack a household to hospital continuum of care framework or approach. Such a continuum of care approach would help rationalize training, and could fill in the service delivery gaps that currently exist across the country.

Interventions in the Package: Duplication of interventions exists across the packages such as behavior Change and Communication (BCC) content for essential newborn care and feeding practices is included in the Birth Preparedness, Iron Intensification; Community-Based Newborn Care package, Infant and Young Child Feeding package and Integrated Management of Childhood Illness Package. If reinforcement is done in a coherent and strategic way, repetition at different points in time may result in more effective behavior change work. Similarly, gap in interventions exists in the package; the current CB-IMCI program does not emphasize preventive interventions for diarrhea and pneumonia or management of acute malnutrition, child feeding during illness and community case management of neonatal sepsis. The health facility based protocol for the maternal package to skilled birth attendant does include the referral management of birth asphyxia, Low Birth Weight babies and management of neonatal sepsis but not the management of sick children. Thus, duplication and gaps in interventions across the continuum of care package exists.

Human Resource for delivering the package: With a multiplicity of programmes with overlapping areas of focus, the skill mix for delivering the full range of MNCH interventions does not exist. Community health worker cadres, village health workers are trained in vaccination and conduct vaccination outreach clinics while maternal health care workers are trained in antenatal care, tetanus immunization, family planning, postnatal care and conduct the primary health care outreach clinics to provide maternal care. As a result, fragmented care exists from the outreach clinics affecting the effective delivery of continuum of care.

Program Management: MNCH programs are planned by separate divisions and as a result of which district health office plans for maternal, newborn and child health programs separately. There are separate cadres of staff within district health office responsible for planning, implementation, and supervision and review of programs for example family planning focal person is responsible for family planning programs, safe motherhood focal person for safe motherhood programs, CB-IMCI focal person for CB-IMCI and CB-NCP programs and EPI focal person for vaccination programs. As a result of focused monitoring, supervision and review for each programs, efficient integrated monitoring, supervision and review is overshadowed and impedes more efficient integrated delivery of services.

Table 1. MNCH interventions and package in Nepal.

	AHP	FPP	BPP	SBA	CB-NCP	EPI	CB-IMCI	IYCF
Promotive interventions								
Promotion of reproductive health and family planning (including the delay of first birth)	HTSP	+	+	+	+	-	-	-
Promotion of appropriate care seeking and antenatal care during pregnancy		-	-	+	-	+	-	-
Counseling for adequate nutrition and iron folate supplements during pregnancy		-	-	+	+	+	-	-
Promotion of skilled care for childbirth		-	-	+	-	+	-	-
Exclusive breastfeeding advice and support		-	-	+	+	+	-	+
Promotion of basic newborn care and care of the LBW infant		-	-	+	+	+	-	-
Preventive interventions								
Provision/availability of contraceptives for birth spacing and safe sex		+	+	-	+	-	-	-
Cord care and clean delivery kits		-	-	+	+	+	-	-
Iron folate or multiple micronutrient supplementations during pregnancy		-	-	+	+	+	-	-
Calcium supplementation for PIH		-	-	-	-	-	-	-
Anti-retrovirals in HIV-infected individuals and PMTCT		-	-	-	-	-	-	-
Antibiotics for preterm rupture of membranes		-	-	-	-	-	-	-
Antenatal steroids in preterm labour		-	-	-	-	-	-	-
Expanded Programme for Immunization (including additional new vaccines Hib)		-	-	-	-	-	+	-
Vitamin A supplementation in children		-	-	-	-	-	-	-
Insecticide-treated bed nets for the family		-	-	-	-	-	-	-
IPT for prevention of malaria in pregnancy and children with IPT		-	-	-	-	-	-	-
Provision of food supplements for complementary feeding in food-insecure households		-	-	-	-	-	-	+
Treatment interventions								
Promotion and use of skilled birth attendants in first-level and second-level facilities		-	-	-	+	-	-	-
Availability and use of Comprehensive Essential Obstetric and Newborn Care (includes CEmONC)		-	-	-	+	-	-	-
Use of MgSO ₄ for management of PIH or preterm Labour		-	-	-	+	-	-	-
Interventions for prevention of post-partum hemorrhage and use of oxytocic agents		-	-	-	+	-	-	-
Basic newborn resuscitation with self inflatable bag and mask		-	-	-	+	+	-	-
Community-based triage and management of serious infections in newborns (including pneumonia)		-	-	-	-	+	-	-
Improved diarrhea management (zinc and ORT etc)		-	-	-	-	-	+	-
Community detection and management of pneumonia with short course amoxicillin		-	-	-	-	-	+	-
Recognition, triage and treatment of severe acute malnutrition in affected children in community settings		-	-	-	-	-	-	-

AHP = Adolescent Health Package, FPP = Family Planning Package, BPP = Birth Preparedness Package, SBA = Skilled Birth Attendant, CB-NCP = Community Based Newborn Care Package, EPI = Expanded Program on Immunization, CB-IMCI = Community Based Integrated Management of Childhood Illnesses, IYCF = Infant and Young Child Feeding Package, HTSP = Healthy Timing and Spacing Programme, LBW = Low Birth Weight, IPT = Intermittent Presumptive Treatment, ORT = Oral Rehydration Therapy, HTSP = Healthy Timing and Spacing of Pregnancy, PIH = Pregnancy Induced Hypertension, PMTCT = Preventing Mother to Child Transmission of HIV, ORT = Oral Rehydration Therapy, IPT = Intermittent Preventive Treatment for Malaria, Hib = Haemophilus Influenzae B, LBW = Low Birth Weight .

“+” denotes the interventions in the package and “-“ denotes the absence of intervention in the package.

Maternal, Newborn and Child Health Programmes train health workers by taking them away from their jobs for several days or weeks, leaving their posts vacant. Furthermore scheduling of training is frequently not coordinated across programmes, resulting in the same worker receiving several training courses in a year, with a substantial loss of services being delivered on the other hand. Some components of training are repeated in different trainings administered by different divisions.

Similarly, in terms of logistic management, the logistics procurement for maternal health program is done by the Family Health Division, while that of Community Based Newborn and Child health programs is done by Child Health Division, some of the logistics such as clean delivery kit and bag and mask are procured by both the division resulting in duplication of procurement of commodities. Also, a need base procurement approach and a joint procurement plan has not been established

Health Care Financing: The safe motherhood program has a demand side financing approach where the mothers are provided free delivery care at health facility with provision of transport funds. Similarly, the community based newborn care package has a performance based incentive to female community health volunteer to promote institution delivery, postnatal care. The program focused demand side financing and performance based incentives can unintentionally decrease the priority of the health worker and FCHV to other programs which has no incentives such as community case management of diarrhea, pneumonia, growth monitoring resulting in low coverage.

CALL FOR ACTION

As a result of duplication of interventions in the maternal, newborn and child health packages and vertical planning, supervision and review of programs, the efficiency of the program delivery has been hindered. Program or intervention focused health cadres leads to less effective delivery of services and a missed opportunity to deliver a more rationalized continuum of care from service delivery points. Similarly, program focused logistic management, absenteeism of program specific health cadres from service delivery points and specific intervention focused financing are bottle necks for reducing inequity.

Given the need to improve the efficiency, effectiveness and equity for MNCH interventions there is a need for an urgent call to action for integrating maternal, newborn, child health and nutrition program.

National consortia for Integrative Maternal, Newborn, Child health and Nutrition programming and household to hospital continuum of care:

To create local momentum and to sustain integrative approaches to maternal, newborn, child health and nutrition, a high level team for planning is essential which would consist of policy makers from Ministry of health and population, technical leads from Department of Health Service-Family Health Division, Child Health Division, National Health Training Center, Logistic Management Division and Management Division along with policy makers from other government ministries (notably finance, planning commission, education, infrastructure, and communication,²⁹ UN agencies, development partners and civil organizations and women's empowerment organizations^{20,30} including health institutes and universities.

This high level policy group would develop an Integrated National Maternal, Newborn, Child health and Nutrition plan—guided by the Nepal Health Sector Program with equity as a core component to address health and survival of mothers, newborn babies, and children in poor and socially excluded groups.^{18,31} Also with a transition towards a federal structure and devolution of responsibility for program management,³² it will be important to strategize on ways to shift MoHP effort from more direct management of the health system to regulation and oversight. The framework would have the delivery approach of MNCHN-continuum of care from family to hospital (Figure 3) within the health system as it is clear that it is important to ensure appropriate integration of delivery of MNCH interventions.^{33,34} This high level policy group also would be able 1) to review evidence-based practices and add additional MNCH interventions to the continuum of care (such as to address mental health issues of women of reproductive age) at the appropriate levels; and 2) revise care at different levels as health-seeking practices change and the health system capacity to deliver MNCH expands and improves (such as phasing out community-based postpartum hemorrhage prevention when the vast majority of women deliver in health facilities with skilled providers).

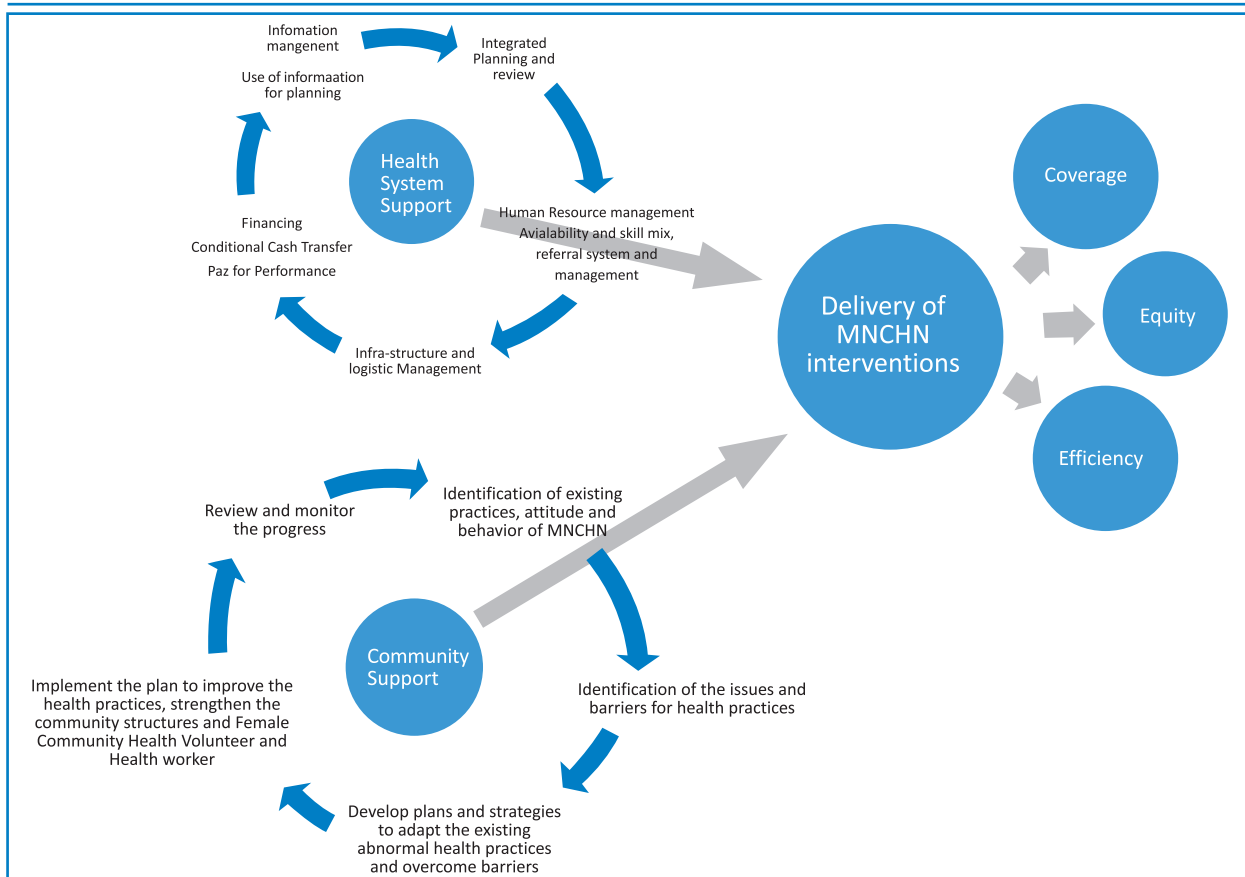


Figure 3. Integrative management of MNCHN in the district health system.

Identify the interventions in the package which are duplicating and review the package such that it includes missed effective interventions. Develop training roll out plans of the package based on the implementation status of package

System of joint planning, programming and packaging for Maternal, Newborn and Child Health and Nutrition

The technical lead for maternal, newborn and child health programs, Family Health Division and Child Health Division needs to develop a system of joint planning of programs (training, logistics, review) and a system of jointly review the program progress on a annual basis.

To improve the inequity in coverage of maternal, newborn, child health and nutrition interventions, a system of financing to create demand for MNCH services needs to be established. A conditional cash transfer system where groups with low socio-economic status and marginalized caste/ethnicity would have free access to MNCHN services as well as receive a grant similar to child protection grant when the group utilizes all the key MNCHN interventions. These divisions should also work with the Ministry of Finance to develop an overall financial management plan that would ensure equitable

funding across the continuum of care, and consistency of financial incentives across programs.

Integrated management of Maternal, Newborn, Child Health and Nutrition in the district health system

A system of joint and integrated district planning of maternal, newborn and child health programmes on an annual basis which will be based on the specific intervention need of the district, current performance of health workers and community health workers, equity and coverage of health services. The planning will determine the financial allocation for the integrated supervision, review and logistics management. Traditional practitioners, including birth attendants, are major service providers, district health officials need to identify and encourage influential practitioners within communities.^{33,35}

The primary outreach clinics will be strengthened to provide a range of services from adolescent sexual services, antenatal care, postnatal care, immunization services, family planning services, growth monitoring services, community based management of acute malnutrition. Both village health worker and maternal

child health workers will be to be equally trained on community based interventions, primary outreach services and health facility MNCHN services.

So as to discourage the individual district health staff managing programs, a joint supervision and monitoring plan will be developed, so that each district staff a well equipped and organized to provide support for maternal, newborn and child health program.

WAY FORWARD

Reproductive Health, Maternal, Newborn, Child Health and Nutrition is inextricably linked, and that, therefore, health policies and programs should also colligate them. Such potential integration of strategies will not only help improve outcomes for millions of mothers and newborns but also save scant resources. This will allow for greater efficiency in training, monitoring, and supervision of health care workers and would help families and communities to access and utilize services easily.³⁶

To develop an integrated agenda and approach for maternal, newborn, child health and nutrition, incremental and synergistic actions are needed at district and national level. The coverage gaps and inequity in MNCHN interventions can be cost-effectively improved if a concentrated effort is given to cautiously package the interventions and strengthen the health systems with integrated planning, human resource management, review and health financing with strong community mobilization component. The current initiatives and momentum for integrated strategies and financing needs to be sustained such that continuum of care approach is ensured as only 4 years remain for a countdown to 2015 MDG reporting.

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