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Ministry of Health & Population

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Addressing the Overcrowding of Maternity Services in Three Referral Hospitals in Nepal

Proceedings of March/April 2014 Planning Workshops

Family Health Division and
Nepal Health Sector Support Programme

NHSSP

These workshops were funded by UK aid from the UK Government. The views expressed in this report do not necessarily reflect the UK Government's official policies.

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INTRODUCTION TO COMPILED REPORT ON THE THREE WORKSHOPS

Nepal has made significant recent progress in maternal health with the maternal mortality ratio falling from 539 deaths per 100,000 live births in 1996 to 170 in 2011. Within this same period, the proportion of deliveries at health institutions increased almost fourfold from 9% to 35%.

The Government of Nepal is committed to providing skilled care to women during childbirth and ensuring that, in line with the MDG targets, 60% of all births are assisted by a skilled birth attendant (SBA) by 2015. The Safe Motherhood Long-term Plan (2006–17), the National Policy on SBAs (2006) and the Second Nepal Health Sector Programme (2010–15) envisage the availability of basic delivery services in 70% of all health posts, basic emergency obstetric and neonatal care (BEONC) services in 80% of primary heath care centres, and comprehensive emergency obstetric and neonatal care (CEONC) services in 60 out of Nepal's 75 districts.

In order to reduce financial barriers to maternal and neonatal health services, the government introduced the Aama Surakshya programme that provides free delivery care to women, fixed payments to institutions to provide services, and transportation costs to mothers. The increased use of institutional birthing services reflects the success of this and other government initiatives to promote institutional childbirth and provide emergency obstetric care (EoC).

The second Nepal Health Sector Programme (NHSP-2, 2010-15), has a target of 60% of all births being conducted by skilled birth attendants (SBAs). While recent progress in institutional childbirth in Nepal has been good, the use of delivery services in health facilities across the country has been uneven. In particular, while many referral hospitals have struggled to respond to the surge in demand, most lower level facilities are underused. An analysis of service use data in 2010/11 showed that of the 17 higher-level hospitals providing CEONC services in Nepal, 12 were overcrowded with patient numbers consistently exceeding available beds.[1]

Responding to the increased demand for delivery services requires a health systems approach including strategies to anticipate, mitigate and respond to service overcrowding and underuse. In this light, a 2013 study of six referral hospitals (FHD and NHSSP 2013)[2] recommended the carrying out of integrated planning exercises in referral hospitals to guide how to respond effectively to increased demand.

Workshops were held at the following three referral hospitals in March and April 2014, to address this recommendation by identifying what needed doing to improve health care services at the three hospitals.

- Seti Zonal Hospital (Dhangadhi), 13–15 March 2014
- Narayani Sub-regional Hospital (Birgunj), 21-22 April 2014
- Bheri Zonal Hospital (Nepalgunj), 28–30 April 2014.

The workshops at Seti and Narayani hospitals covered the whole range of health care services whilst the workshop at Bheri hospital focussed on the needs of the maternity department and directly related departments. This report includes workplans to bring about the needed improvements at all three hospitals. These workplans were developed with district and hospital level stakeholders and the support of FHD and MoHP officials.

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[1] DoHS and FHD (2011). Coping Strategy for Accommodating Excess Demand for Institutional Childbirth, D. FHD, MoHP. 2011: Kathmandu: Department of Health Services and Family Health Division. (As cited in FHD and NHSSP 2013).

[2] FHD and NHSSP (2013). Responding to Increased Demand for Institutional Childbirths at Referral Hospitals in Nepal: Situational Analysis and Emerging Options. Kathmandu: Family Health Division and Nepal Health Sector Support Programme.

The three workshop reports document:

- available evidence, including hospital data, for identifying the main reasons for overcrowding; and
- plans of activities to reduce overcrowding with associated monitoring frameworks.

They also partially address the need to develop individual hospital plans and budgets to include both annual work plan and budget (AWPB) and local resources.

For the benefit of the hospitals concerned, each report has been designed to stand alone and is separated for easy reference in this compiled report by a blue colour separation page. Note that unless otherwise stated, all budget figures are given in Nepalese rupees.

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Seti Zonal Hospital, Dhangadhi

Report on Planning Workshop 1:

Seti Zonal Hospital, Dhangadhi

13-15 March 2014

Family Health Division

and

Nepal Health Sector Support Programme

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I also thank Dr Ganga Shakya, senior CEONC consultant, and Karuna Laxmi Shakya, NHSSP's quality service adviser for their guidance and support, and for participating in the workshop, and Dr Maureen Dariang, EHCS advisor for her oversight and suggestions.

Devi Prasad Prasai

Consultant

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ACRONYMS

AA	anaesthesiologist assistant
AC	air conditioner
ANC	antenatal care
ANM	auxiliary nurse-midwife
ASBA	advanced skilled birth attendant
AWPB	annual workplan and budget
BC	birthing centre
BCC	behaviour change communication
BS	Bikram Sambat (Nepali dates)
BSc	Bachelor of Science
BTS	Blood Transfusion Service
CAC	comprehensive abortion care
CCTV	closed-circuit television
CDO	chief district officer
CEOC	comprehensive emergency obstetric care
CEONC	comprehensive emergency obstetric and neonatal care
CHD	Child Health Division
CPM	continuous passive motion
CSSD	central sterile supply department
CT	computed tomography
DDC	district development committee
dept	department
DFID	Department for International Development (UK Aid)
DHO	district health officer
DPHO	district public health office
DUDBC	Department of Urban Development and Building Construction
ECG	electrocardiogram
EDCD	Epidemiology and Disease Control Division
ENT	ear nose and throat
FESS	functional endoscopic sinus surgery
FHD	Family Health Division
FNCCI	Federation of Nepali Chambers of Commerce
GoN	Government of Nepal
HA	health assistant
HDB	hospital development board
HFOMC	health facility management and operation committee
HMIS	Health Management Information System
HoD	head of department
ICU	intensive care unit
IEC	information, education and communication
IUCD	intrauterine contraceptive device
KTM	Kathmandu
KVA	kilovolt-ampere

LSCS	lower-segment caesarean section
LDO	local development officer
MBBS	Bachelor of Medicine, Bachelor of Surgery
MCH	maternal and child health
MDGP	Doctor of Medicine in General Practice
MeSu	medical superintendent
MICU	medical intensive care unit
MNCH	maternal, newborn and child health
MoHP	Ministry of Health and Population
MP	Member of Parliament
MPDR	maternal and perinatal death review
MR	medical recorder
NA	not available
NCASC	National Centre for AIDS and STD Control
NGO	non-government organisation
NHSSP	Nepal Health Sector Support Programme
NICU	neonatal intensive care unit
NIPP	neonatal individualized predictive pathway
no.	number
NPR	Nepalese rupee
NRCS	Nepal Red Cross Society
NSRH	Narayani Sub-Regional Hospital
OP	outpatient
OT	operating theatre
P1, P2, P3	priority 1 (highest priority) to priority 3 (lowest priority)
PAC	post-abortion care
PHN	public health nurse
PIC	paediatric intensive care
PICU	paediatric intensive care unit
PSC	Public Service Commission (Lok Sewa)
PUVA	psoralen (P) and ultraviolet A (UVA) therapy
R&M	repair and maintenance
RH	reproductive health
RHCC	reproductive health coordination committee
SZH	Seti Zonal Hospital
USG	ultrasonogram
VDC	village development committee
WHO	World Health Organisation

1. INTRODUCTION

1.1 Workshop Rationale

Nepal has made significant recent progress in maternal health with the maternal mortality ratio falling from 539 deaths per 100,000 live births in 1996 to 170 in 2011. Within this same period, the proportion of deliveries at health institutions increased almost fourfold from 9% to 35%.

The Government of Nepal is committed to providing skilled care to women during childbirth and ensuring that, in line with MDG targets, 60% of all births are assisted by a skilled birth attendant (SBA) by 2015. The Safe Motherhood Long-term Plan (2006-17), the National Policy on SBAs (2006) and the Second Nepal Health Sector Programme (NHSP-2, 2010-15) envisage the availability of basic delivery services in 70% of all health posts, basic emergency obstetric and neonatal care (BEONC) services in 80% of primary heath care centres, and comprehensive emergency obstetric and neonatal care (CEONC) services in 60 out of Nepal's 75 districts.

In order to reduce financial barriers to maternal and neonatal health services, the government introduced the innovative Aama Surakshya programme, which provides free delivery care to women, fixed payments to institutions to provide services, and transportation costs to mothers. The increased use of facilities reflects the success of the government's initiatives for promoting institutional childbirth and the provision of emergency obstetric care (EoC).

Subsequently, recent years have seen a greatly increased demand for institutional births, especially in referral hospitals. Many of these hospitals have found it difficult to keep up with the increased demand and a recent study of six referral hospitals (FHD and NHSSP 2013)[3] recommended a number of strategies to overcome overcrowding. In line with a key strategy planning workshops were held in three referral hospitals (Bheri Zonal Hospital, Nepalgunj; Seti Zonal Hospital, Dhangadhi and Narayani Sub-Regional Hospital, Birgunj) in 2014 to develop plans on responding to the increased demand for maternity care.

The demands for maternity care have increased significantly within these hospitals, but the resources available to meet the demand have only marginally increased. There is a shortage of nurses and doctors for birth-related care and an inadequate number of beds meaning that some patients must be placed on mattresses on the floor or even share a bed. Toilets, drinking water and other amenities also tend to be inadequate.

Nepal's referral hospitals are semi-autonomous entities managed by hospital management boards within which senior hospital executives hold overall responsibility for service availability and quality of care.

While, the challenge of responding to increased demand for institutional deliveries across the country lies beyond the reach of individual facilities or district health authorities, requiring improved MoHP's leadership, strategies and systems, individual facilities and hospitals can do much to improve their own performance.

[3] FHD and NHSSP (2013).Responding to Increased Demand for Institutional Childbirths at Referral Hospitals in Nepal: Situational Analysis and Emerging Options. Kathmandu: Family Health Division and Nepal Health Sector Support Programme.

Hospital planning in Nepal usually happens in a fragmented way with each department making separate and largely uncoordinated plans. This leads to overlap and duplication despite individual departments having common equipment and personnel needs. It was therefore seen as essential to help hospitals prepare integrated plans across all departments in order to address the overcrowding.

1.2 The Workshop

A planning workshop was held at Seti Zonal Hospital from 13-15 March 2014 to produce an integrated plan to address overcrowding and service provision across the hospital in general and in the maternity ward in particular. This integrated approach was taken as it is not possible to plan for maternity care alone as maternity care needs, such as good quality operation theatre, radiology, administration and pathology services, are needed by all medical departments of a hospital.

The agenda and schedule of the workshop are given at Annex 1. The names of the hospital administrators, doctors, and representatives of local government, political parties and other stakeholders who attended are listed at Annex 2.

The purpose of the workshop was to help Seti Zonal Hospital respond to and address the challenges of the increased demand for hospital care, particularly institutional deliveries.

The workshop's objectives were to:

- Understand the problems, issues and challenges of providing maternal, neonatal and child health (MNCH) services in Seti Zonal Hospital.
- Develop costed and prioritised plans and activities to reduce overcrowding in Seti Zonal Hospital with the support of FHD and MoHP.
- Expand the human and physical capacity of the hospital to accommodate the additional demands for the hospital services by the year 2020.
- Develop a monitoring and evaluation plan able to track implementation of the prioritised plans.

1.3 Approach and Methods

The workshop was run in a participatory and inclusive way. Participants ranged from hospital cleaners to the chair of the hospital development board (HDB) (see Annex 2). All major stakeholders participated in the workshop including doctors and nurses of the hospital, municipality officials, INGOs (Care Nepal, Lions, Red Cross), representatives of government offices and civil society.

The workshop took a holistic approach and included visits to all units of the hospital. A problem identification and solving approach was taken. Underlying causes of problems identified were explored, shared and demonstrated to better understand their significance and generate ideas on how to solve them.

The workshop was run through presentations, discussions in plenaries, observations of the hospital infrastructure and service provision, group discussions and presentations, brainstorming exercises, and resource mapping exercises.

2. THE BUSINESS OF THE WORKSHOP

The workshop was structured in three main parts:

- Understanding problems, issues and concerns.
- Planning for improvements.
- Mapping actual and potential resources for making improvements.

2.1 Understanding Problems, Issues and Concerns

The following activities took place to understand the problems and challenges faced by the hospital for providing services:

- *Sharing evidence and national policies:* The coordinator of the National Safe Motherhood Programme presented the major findings and recommendations from the FHD and NHSSP (2013) study on responding to the increased demand for institutional childbirths.
- *Sharing felt needs:* The investigator presented the major findings and recommendations of responding to increased demands for institutional childbirths while hospital design needs were presented by NHSSP's engineer. The current situation of newborn care was presented by the UNICEF representative and snapshots of sanitation issues were shared by the regional coordinator of the Safe Motherhood Programme.
- *Observing hospital departments and units:* Five groups of workshop participants were formed with each assigned a focal area of hospital work to observe (see Table 1). Each group observed client loads, human resources, equipment and infrastructure of the various departments using the checklist given in (see format with points to observe at Annex 4).
- *Good points* and *things to be improved* were noted down by the group members and discussed in the groups. Participants mostly focused on their assigned theme but also looked at systemic issues and linkages to other themes. It took nearly two hours to visit all the units and departments of the hospital. After the visits, each group presented to a plenary session. The findings are given at Annex 5.

Table 1: Composition of the five workshop groups

Group	Focus	Team Leader
1	Hospital reception, emergency, indoor medical, surgical, wards, (leader of each team)	Dr Pramod Joshi
2	ANC, labour room, PNC, gynaecology, operation theatre, post-operative	Ms Sunita
3	Laboratory, ultrasound, X-rays, blood transfusion service, pharmacy, medical records, ambulance, admin., accounts	Bishnu Chaudhari
4	Infrastructure development including waste disposal, toilets, utilities, water, electricity, hand washing, sub-stores, placenta pits, doctors and nurses quarters	Dr Singh
5	Partnership, coordination, referral, resource management and transport management	Ms Yashoda (PHN)

2.2 The Planning Exercise

The following planning exercises were then carried out:

- *Visioning:* A brainstorming exercise was carried out by each group to develop a vision statement for the hospital. The five groups developed vision statements, which they presented in a plenary session (see Annex 3). The facilitator and resource persons then identified common themes and drafted a common vision statement, which was finalised and agreed in a plenary session.
- *Establishing objectives:* The objectives of the hospital were identified by each of the five groups, presented, discussed at length and agreed upon. Skills development training, in particular, emerged as an essential objective for improving service delivery. Four objectives were agreed. Records from group work on visioning and the development of objectives are given in Annex 3.
- *Defining activities:* Based on the observation visits, other evidence, and the expressed felt needs of hospital staff, improvements activities, mostly in terms of infrastructure improvements, quality of care, additional human resources, and more equipment, were identified towards meeting the objectives. These improvement activities were further discussed in groups with reference to their practicality, affordability, technicality and feasibility. After completing the planning exercise, each group presented an action plan for its focal areas in a plenary session, with relevant comments and suggestions then incorporated. The planned activities were classified into three groups: 1) for immediate action; 2) to be incorporated in the next annual work plan and budget (AWPB), and 3) to be incorporated in the five year periodic plan.
- *Identifying priority activities*: All participants assigned priorities (P1, P2, P3) to the various activities based on their cost, urgency for improving service delivery, and contribution to saving lives. Activities requiring large resource inputs, such as the expansion of services and infrastructure (e.g. adding beds) and the planning and reorganisation of departments, were generally given a low priority (P3) for being financially unrealistic.

2.3 Mapping Resources

Potential resources for funding hospital improvements were explored in consultation with key stakeholders (heads of departments and other district level stakeholders). This resource mapping exercise covered formal and informal sources of funding, including institutional resources and donations from companies and individuals. The following stakeholders committed to supporting or mobilising support for the hospital in various ways, but did not commit to specific amounts.

- Member of Parliament, Mr Ale undertook to approach his political party to identify additional sources of funding to finance the hospital noting that the current minister for health and population was a member of his party. He also committed to mobilising local resources.
- The executive officer of Dhangadhi Municipality committed to provide support in the area of hospital waste management and a biogas production plan. He reinforced the need for a partnership between the hospital and municipality.
- Two ex-chairpersons of the hospital development board committed to mobilising local resources for the expansion of hospital services.
- The regional health director also committed to supporting the hospital.

2.4 Next Steps

The medical superintendent closed the workshop by delivering a vote of thanks and calling for cooperation from MoHP, the Regional Health Directorate, the Department of Health Services, the Family Health Division, I/NGOs and civil society for implementing the plan. He committed to coordinate with local businesspersons to raise donations.

The responsibility for organising quarterly monitoring meetings was assigned to the regional safe motherhood coordinator while the responsibility for incorporating the integrated plan in the next AWPB and NHSP-3 was given to the national safe motherhood coordinator.

Note that the means of monitoring the implementation of the plans are summarised in Section 3.4.

2.5 Limitations of the Workshop

The workshop faced the following limitations:

- The workshop hall was very narrow making communications between participants difficult.
- A few doctors had to leave the workshop for periods to attend to emergency cases.
- A few presentations took longer than expected, which reduced the time available for remaining activities. The workshop overran by two hours.
- The costings exercise could not be completed in the absence of price lists of equipment and construction materials.

3. INTEGRATED PLAN OF ACTION

3.1 Vision and Objectives of the Plan

The workshop agreed on the following vision for the hospital:

> *A referral hospital with multiple specialties, trusted by communities and producing competent human resources*

The workshop agreed on the following objectives for the hospital:

- To ensure available, competent and committed human resources.
- To expand services including affordable specialities.
- To enhance the quality of care.
- To develop the hospital as an academic institution.

The workshop developed 11 output indicators (Table 2) and 4 input indicators (Table 3) to monitor the progress of towards meeting the objectives.

Table 2: Output indicators to achieve objectives for Seti Zonal Hospital (based on exponential growth)

	Output	Output indicators
1	Expand services	1. Increased no. of deliveries from 5,200 in 2013/14 to 10,000 in 2019/20. 2. Increased inpatient admissions from 12,000 in 2013/14 to 20,000 in 2019/20. 3. Increased no. outpatients from 45,000 in 2013/14 to 90,000 in 2019/20. 4. Increased emergency cases from 29,000 in 2013/14 to 58,000 in 2019/20. 5. Introduce ICU, NICU level 2, CCU, ENT, skin, mental health care and CT scan services by the year 2020.
2	Available human resource	6. Maintain a doctor-bed ratio of 1:6 and a nurse-bed ratio of 1:3. 7. Maintain 4 doctors and 20 nurses for every 3,500 deliveries (as per WHO standards).
3	Enhance quality of care	8. Maintain a bed occupancy rate of 75-80% in the maternity unit (with no floor beds). 9. Reduce stillbirths from 1.9% of all births in 2013/14 to <1% in 2019/20 (quality). 10. 80% of clients are satisfied with services provided.
4	Academic institution	11. The hospital becomes an accredited centre for providing practical tuition to MBBS, MDGP, BSc nursing and other courses by 2020.

Table 3: Input indicators to achieve objectives for SZH (based on exponential growth)

	Input indicators
1	Increase maternity bed numbers from 50 in 2013 to 62 in 2014/15. Further increase to 120 (including birthing unit beds) by 2019/20.
2	Increase from 18 doctors in 2013/14 to 19 in 2014/15, and from 40 nurses in 2013/2014 to 44 in 2014/2015 in the maternity department. Further increase to 50 doctors and 100 nurses by 2019/20.
3	Increase total number of beds in the hospital from 125 in 2013 to 300 in 2019/20.

3.2 The Action Plans

Workshop participants developed plans for improving the hospital's main areas of work (see Tables 5–9):

Workshop participants (department heads and other stakeholders) identified areas of improvement and relevant logistical details including location, quantity needed, tentative budget (in NPR), potential sources of budget, lead role, support role, monitoring indicators, and the timeframe for implementing improvements. Participants then assigned priorities for these improvements with:

- P1, denoting high priority,
- P2, moderate priority; and
- P3, low priority.

Note that the unavailability of a price list at the time of the workshop meant that cost data is missing for some items.

The consolidated human resource needs are given in Table 4. These combine the human resources identified by workshop participants across the departments of Seti Zonal Hospital.

Table 4: Additional human resources needed for Seti Zonal Hospital (2014)

	Department	Doctors	Nurses	Paramedics & others	Helpers	Cleaners	Guards	Total
1	Maternity	2	13	0	6	2	4	27
2	Operation theatre	1	6	2 (1 AA)	4	2	0	15
3	Paediatrics	5	7	0	2	2	0	16
	Total	**8**	**26**	**2**	**12**	**6**	**4**	**58**

Table 5: Infrastructure action plan (Seti Zonal Hospital, March 2014)

	Activities	Location	Additional no. needed	Tentative budget (NPR)	Budget source	Lead role	Support role	Monitoring indicators	Timeframe	Priority
1	Review of design for construction of 300 bed hospital	Dhangadhi	1	200,000	HDB	MeSu	DUDBC Divisional Office	Accepted & designed	2014/15	P1
2	Building construction for maternity unit	Maternity	70 beds	10,000,000	MoHP	HDB Chair	FNCCI, donations	Maternity ward shifted in 2014/15	2014/15	P1
3	Post-operative ward	Post-operative	25 beds		MoHP	MeSu	DUDBC	Maternity ward in use	5 years	P2
4	Construction of new hospital building	Dhangadhi	300 beds	365,000,000	MoHP	Chair HDB	FNCCI, donations	100% completed	5 years	
5	Land procurement		10 bighas of land	----	MoHP	Chair HDB	CDO	100%	5 years	P2
6	Reorganisation of departments (transport, wages)	Dhangadhi	1	200,000	MoHP	Chair HDB	HoDs	100% of services shifted	1 year	P1
7	Organisation and management survey			200,000						P1
8	Doctors (tentative calculation) — (existing 18 doctors = 125 beds; 300 beds = 43+ 7 additional specialists = 50) doctor-beds ratio 1:6		50	19,500,000	MoHP (yearly)				5 years	
9	Nurses (tentative calculation) 1 doctor: 2 nurses; 1 nurse:3 beds ratio		100	26,000,000	MoHP (yearly)				5 years	
10	Equipment and furniture for new maternity unit building			10,000,000	MoHP	MeSu	Chair HDB		5years	
11	Equipment for new building 300 bedded hospital			3,000,000	MoHP		Chair HDB		5 years	

Table 6: Family and child health related action plan (Maternity ward — ANC, labour room, PNC, OT, paediatrics, MCH) (Seti Zonal Hospital, March 2014)

	Activities	Venue	Frequency/ no.	Budget (NPR)	Budget source	Lead role	Supportive role	Monitoring indicators	Time frame	Priority*
1	Adequate human resources (2 doctors, 13 nursing staff(7-P2), 6 office assistants, 2 cleaners, 4 security guards)	Maternity ward	34 persons		GoN	MeSu/hospital development board	RHD, FHD,	100% filled	2014/15	P1
2	Floor and half wall tiling of new building	Labour room, post op., ANC, maternity ward	One time		CEOC budget	MeSu, maternity in-charge	FHD	100% completed	2014/15	P1
3	Provision of admission-cum-reception room	Maternity ward	One time			Maternity in-charge	MeSu	Cases managed properly	5 years	P1
4	Provision of intercom facility	Whole hospital			HDB	Maintenance department	Accountant Storekeeper		2013/14	P1
5	Implement routine visiting hours & gate pass system: 12pm-2pm; 4 to 6pm	Whole hospital	Everyday			MeSu, indoor in charge, admin., housekeeping	Office assistant	Visitors well controlled	2013/14	P1
6	Waiting hall for visitors	Back side of lab/ abortion centre (CAC) or beside post-mortem area	One time	150,000		MeSu, accountant, admin., indoor in charge	Related NGO/INGO	Visitors well managed	2014/15	P1
7	Whole site infection prevention training	Whole hospital	4 batches	250,000		Indoor in charge, maternity in charge, training coordinator	RHTC, DoHS		2013/14	P1
8	Housekeeping department	SZH	1 time			MeSu/indoor in charge			2014/15	
9	Hand washing facility and toilet for staff	Post op. and post natal ward	1 time	100,000		Maternity in charge	Admin. & mainten. staff		2013/14	P1
10	Provision of proper drainage system (immediately + 5 year)	Seti Zonal Hospital	1 time			MeSu	LDO & municipality		2014/15 5 year	P1
11	Provision of overhead lighting system, hand drier in delivery room and adequate lighting in all wards	Maternity ward	1 time	30,000		Maintenance dept, accountant, storekeeper	GoN, related NGOs & INGOs		2013/14	P1

	Activities	Venue	Frequency/ no.	Budget (NPR)	Budget source	Lead role	Supportive role	Monitoring indicators	Time frame	Priority*
12	Adequate supply of drugs, equipment & instruments — beds, lockers, benches, computers, 1 ECG machine, 1 vacuum set, 1 central oxygen system (P2), oxygen head box (6 for neonates), 2 warmers, 4 delivery beds, 4 resuscitation tables, 2 ACs in delivery room, stitch cutting scissors, inverter, portable USG machine (P2), laryngoscope (neonate size), ambu bag with face mask for neonates, LCD TV for health education, camera.	Maternity ward			CEOC budget, LMD	MeSu, maternity in charge and store keeper	FHD, LMD		2014/15	P1
13	Proper laundry, waste management including placenta pit, disposal pit, incinerator (biogas powered?)	Seti Zonal Hospital	1 time			MeSu, focal point for waste mgt, municipality	All hospital staff		2013/14	P1
14	Hostel for trainees		1						5 years	
15	Advanced SBA and regular family planning training	Training hall	1 time		GoN and HDB	MeSu, training coordinator	NGOs, INGOs		2013/14	P2
16	Provision of separate op. theatres for surgery and obst/gynae	Hospital	1 time		GoN and HDB	MeSu, heads of related depts, OT in-charge	NGOs		5 years	P2
17	Autoclave (large) for central sterile supply department (CSSD)	Hospital	1 section		MeSu	Related department	NGOs		2013/14	P1
18	Human resources for op. theatre (6 nurses; 2 AAs; 1 anaesthesiologist; 4 office assistants; 2 cleaners)	OT	1 time		HDB, MP & FHD	MoHP, MeSu, HDB	MoHP		2014/15	P1
19	Proper equipment in OT (lighting; cautery machine; anaesthesia & resuscitation set for paediatrics and adults)	OT	1 time		LMD, DoHS	MeSu, OT in charge	MoHP, FHD		2014/15	P1
20	HR for MCH clinic (1 doctor/nurse)	MCH clinic	2people		GoN	MeSu & HDB	RHD/FHD		5 years	P2
21	Wash basin for hand washing	MCH Clinic	2		SZH	MeSu & MCH in-charge	HDB		2013/14	P1
22	USG machine, USG training for ANC nurses	MCH Clinic	1			MeSu, HDB & MCH in-charge	NHTC & FHD		2014/15	P1

	Activities	Venue	Frequency/ no.	Budget (NPR)	Budget source	Lead role	Supportive role	Monitoring indicators	Time frame	Priority*
23	Functioning NICU and kangaroo mother care (KMC) ward with full resources (P2)	Paediatric ward	1 time			MeSu, HoD & in charge, MoHP	CHD & HDB		2014/15	P1
24	Nursing administration room.	SZH	1 time			MeSu	Admin. & all nurses		2013/14	P1
25	Monitoring of partograph	Maternity	3 times, 4 monthly		HDB	Maternity in charge	In-charges		2013/14	p1

Table 7: Curative services action plan 1 — emergency medical, surgical, ortho. (Seti Zonal Hospital, March 2014)

	Activities	Venue	Frequency/ no.	Budget (NPR)	Budget source	Lead role	Support role	Monitoring indicators	Timeframe	Priority
Emergency										
1	Need wheel bed (trolley)	Emergency	2	40,000	Donor agencies	Emergency in-charge	MeSu & Storekeeper	No. beds purchased	2013/14	P1
2	Central oxygen supply system, vacuum, patient monitor, emergency ventilator	Emergency	-	2,000,000	Donor agencies	Emergency in-charge	MeSu & storekeeper	Operational	5 years	P1
3	Emergency OT (in dressing room)	Emergency	1	500,000	Donor Agencies	Emergency in-charge		Used OT table	2014/15	P1
4	Infection prevention (mask, suction pipe, nebulizer per patient) for whole hospital	Emergency	120	-	Hospital	Emergency in-charge	Emergency staff	100% trained	2014/15	P1
5	Emergency medical officer's room improved	Emergency	1		Hospital	Emergency in-charge	MeSu	Renovated and used	2014/15	P2
6	Emergency medical officer training to deal with medico-legal and other cases	KTM	1		Hospital	Emergency in-charge	MeSu	Completed	2014/15	P2
Surgical department										
1	6 electro-hydraulic beds, 10 simple beds	Surgical	16	300,000	Donor Agencies	HoD, surgical department	MeSu, Store man	No. beds purchased	5 years	P2
2	5 staff nurses, 2 helpers, 1 sweeper	Surgical	8	150,000		HoD, surgical department	MeSu, admin.	No. staff recruited	5 years	P3
3	Separate burns unit equipped	Surgical	1	300,000		HoD, surgical department	MeSu, admin.	Construction process and space allocated	5 years	P2

	Activities	Venue	Frequency/ no.	Budget (NPR)	Budget source	Lead role	Support role	Monitoring indicators	Timeframe	Priority
Reception										
1	Furniture (seat, bench, chair) for visitors	Reception	5	25,000		Emergency in-charge	Store keeper, MeSu	No. purchased	5 years	P2
2	Site plan for reception, OPD & emergency ticketing & cash counter	Reception, OPD, emergency						Moved to new room	5 years	P1
3	OPD toilet and wash basins for public	OPD	3			MeSu	HoD	In use	5 years	P1
Maintenance department										
1	Separate well equipped department with adequate tools	repair and maintenance (R&M)	1			MeSu	Bio-medical technician	Well equipped	5 years	P2
2	Skill enhancement training	R&M	1	50,000	Donor	Admin	Bio medical technician	Training completed	2014/15	P1
3	Involvement in procurement committee	Procurement	1	-	-	Admin	Bio medical technician	Decision made	2013/14	P1
Social service unit										
1	Computerised record keeping system	SSU	1	100,000	Donor	Admin	Social workers	Computer system in use	2014/15	P1
Dental OPD										
1	Well-equipped and fully functional	Dental	1	500,000	HoD	MeSu	Dental surgeon	Operational	2014/15	P2
Information centre										
1	Should be functional	ASRH	1	50,000	DHO	Maternity	DHO	Operational	2014/15	P3
Records unit										
1	Digitalisation (HMIS)	Medical records	1	100,000	MoH	Medical recorder	HMIS	Operational	5 years	P2

	Activities	Venue	Frequency/ no.	Budget (NPR)	Budget source	Lead role	Support role	Monitoring indicators	Timeframe	Priority
Store										
1	Specific well equipped store	Store	1	2,000,000	MoHP	Medical recorder		Operational	5 years	P2
2	X-ray waiting room	X rays	1	500,000	MoHP		X ray technician	In use	5 years	P2
3	Provision of new department — ENT, Mental Health, Skin, Neuro	Hospital	1	2,000,000	MoHP	MeSu	MoHP curative	Operational	5 years	P2

Table 8: Curative services action plan 2 — lab., ultrasound, x rays, BTS, pharmacy, admin. etc. (Seti Zonal Hospital, March 2014)

	Activities	Venue	Frequency/ no.	Budget (NPR)	Source of budget	Lead role	Supportive role	Monitoring indicators	Time frame	Priority
1	MeSu room: Install AC	MeSu room	1	40,000	GoN/SZH	MeSu, admin	Admin	AC installed	2013/14	P1
2	Information charts and soft board installation	MeSu, admin. room	2	10,000	SZH	Admin	Admin	Board installed	2013/14	P2
3	Improved management of curative services	SZH	1		SZH		Admin		2013/14	P2
4	Refrigerator for Blood Transfusion Service Lab.	BTS	1	7,000,000	GoN, NGO, NPHL, NRCS	BTS, NRCS	Admin	Refrigerator purchased	2013/14	P2
5	Separate room for dressing and injections (mental OPD) + staff	Wards	2		SZH		Admin		2013/14	P2
6	Computer for accounts room, medical recorder room and lab.	SZH	3	200,000	GoN/SZH	MeSu, admin	Admin	Purchased	2014/15	P1
7	Bio chemical analysers	Lab.	1	200,000	GoN/SZH	MeSu, admin	Admin		2013/14	P1
8	Toilet for OPD, public and staff						Admin	Built.	5 years	P2
9	Software	Records room	1	200,000	GoN/SZH	MeSu, admin.	Admin	Purchased	2014/15	P2
10	Differentiated waste bins	Wards			SZH				2013/14	P1
11	Coulter machine	Lab.	1	1,000,000	GO/SZH	MeSu, admin.	Admin		5 years	P1
12	Eazilite machine	Lab.	1	200,000	GO/SZH	MeSu, admin.	Admin		2014/15	P1
13	Human resources: Paramedics and lab	Lab. & OPD	2		GO/SZH	MeSu, admin.	Admin		2014/15	P2
14	Ambulance networking system	SZH and NRCS	1		DPHOs	Red Cross	Admin	Database	2014/15	P1

Table 9: Partnership, coordination and referral action plan (Seti Zonal Hospital, March 2014)

	Activities	Venue	Frequency/ no.	Tentative budget	Source of budget	Lead role	Supportive role	Monitoring indicators	Time frame	Priority
1	Coordination meeting with stakeholders, private providers including political parties	SZH	Quarterly	NA	NA	MeSu	Maternity in-charge	No. meetings attended	2014/15	P1
2	Coordination with hospitals in other districts (government & private) for referrals	SZH	Semi annual	NA	NA	MeSu	DPHO	No. meetings attended	2014/15	P1
3	Provide feedback to health workers & health facilities who have referred clients for delivery	SZH	Immediately	NA	NA	Maternity in-charge	Nursing staff	No. feedback given	2014/15	P1
4	Hospital management committee meeting	SZH	Bi-monthly	NA	NA	MeSu	Maternity in-charge	No. meetings attended	2014/15	P1
5	Compulsory attendance at RHCC meetings	DPHO	Quarterly	NA	GoN	DPHO	PHN	No. meetings attended	2014/15	P1
6	Coordination with DDC and municipality for medical waste management (Incinerator)	SZH		NA	Municipality, DDC	Focal person		Medical waste mgt system established	2014/15	P1
7	Orientation to health workers and FCHVs on referral system	DHOs/ DPHOs	During review meeting	NA	NA	PHN	HWs, partners		2014/15	P1
8	Information dissemination to obs/gynae ward	Ward level	At monthly meetings	NA	NA	FCHV	CHWs/ Partners		2014/15	P1
9	Coordination meeting with NCCI, JAYCEES, NRCS, Bhalai Kosh to arrange transport	Dhangadhi	Quarterly	NA	NA	MeSu		No. pregnant women supported	2014/15	P1
10	Toll free hotline phone service	SZH	Immediately			MeSu	Engineer	Free helpline established	2014/15	P1
11	Organise reproductive health camp	Community	Immediately in Kailali; phase-wise in other districts	MPR 50,000 per camp	HMB	MeSu	DPHO	No. of camps organised	2014/15	P1
12	Awareness creation through mass media	Radio/TV, FCHVs, peer educators		?	HMC	MeSu/ DPHO	DPHO and NGOs	No. programmes organised	2014/15	P2

3.3 Resource Mapping

The results of the resource mapping exercise are given in Table 10 showing regular funding from the government as the main identified source of funding for the hospital.

Table 10: Resource mapping

	Institution/Source	Excepted contribution (NPR)	Purpose	Remarks
1	MoHP block grant	36,500,000	Human resources and associated costs	
2	User fees	20,000,000	Human resources and associated costs	
3	FHD Aama Programme	15,000,000	Human resource, drugs and supplies	
4	FHD response to overcrowding funds	5,000,000	Building, human resources, repair and maintenance, renovation	
5	FHD CEONC	2,000,000	Human resources anaesthetic, OT nurse	
6	FHD, equipment and furniture	1,000,000	Equipment and furniture	
7	Municipality	600,000	Biogas/waste disposal system	Partnership
8	DDC, grant	500,000	Equipment, furniture	
9	National Health Training Centre		advanced skilled birth attendant (ASBA) training establishment, medico legal	Indirect support
10	CHD and Unicef		NICU, newborn corners	
11	Central lab		Lab. instruments, reagents	
12	Donations: FNCCI, Nirmal Byabasai Mahashang (transport mgt committee), bus and minibus		Infrastructure development materials	
13	Lions/others partners		labour room	
	HMIS, Management Division		Software, networking	
	Parliamentary fund (MP's fund)			
	Curative Division		Organisation and management survey	

3.4 The Monitoring of Implementation

A monitoring plan was developed at the end of the workshop that assigns responsibilities to monitor implementation of the plan (Table 11). Separate monitoring indicators were defined for each activity (see Tables 5 to 9). The output and input indicators for overall hospital improvements in the next few years are given in Tables 2 and 3.

Table 11: Monitoring plan for 2013/14–2014/15) (Seti Zonal Hospital March 2014)

	Activities	Reporting to HDB	Lead role	Cell	Supportive role	Indicators	Means of verification
1	Group 1: Emergency, medical, surgical paediatrics, ortho.	Trimesterly	Dr BS Bohara Pramod Joshi	9858420 370 9841525670	Unit in-charges	85% planned	Progress report (every 4 months
2	Group 2: Labour room, OT, post op, ANC, PNC	Trimesterly	Dr Khagendra Bhatta	9848563400	Unit in-charges	85% planned	
3	Group 3: Laboratory, ultrasound, X rays, BTS, pharmacy, medical records, ambulance, admin, accounts	Trimesterly	Krishna B. Bohara	9858420747	Unit in-charges	85% planned	
4	Group 4: Infrastructure development	Trimesterly	MeSu		HDB	Completed drawings & construction	
5	Group 5: Partnership, coordination, referral, resource management, transport management	Trimesterly	Mr Bahadur Karki	9848612483	DHO/PHN	90%	

Annex 1: Agenda for Planning Workshop

Seti Zonal Hospital, 13–15 March 2014

Objectives of the workshop:

- To understand the problems, issues and challenges of MNCH services
- To prepare an agreed annual plan and periodic plan(5 years) for the MNCH services

Expected outputs:

- Agreed annual plan
- Agreed Periodic plan (5 years)

Expected outcome workshop:

- Increase bed numbers and service providers
- Increased financial resource
- Enhanced the quality of care

Day 1: Understanding problems and issues of MNCH

Time	Activities	Methodology	Responsibility
10:00-10:30	Welcome		Dr Ganesh Singh/Facilitation
	Objective of the workshop	Slide presentation	Dr Ganesh Singh/ Facilitation
	Introduction	Self-introductions	Facilitator
	Expectations/Overview of the workshop	Brain storming (Plenary)	Facilitator
10:30- 10:50	Safer motherhood status and programme	Presentation in Plenary	Dr Shilu
10:50-11:20	Current situation of the hospital	Presentation in Plenary	Dr Ganesh Singh
11:20-12:00	Study results and recommendation of overcrowding study	Presentation in Plenary	Dr Devi
12:00-12:15	MNH evidence		Dr Ganga
12:15- 1:10	Hospital on site observation visits - Good points - Areas to be improved	Observation	Group in charges (led by hospital personnel)
1:10- 1:30	Remarks and feedback		
1:30-2:30	Lunch		
2:30-4:00	Observation continuation and preparation for presentation for observational *Findings* -Good points -Areas to be improved	Presentation in plenary by group leaders	Group in charges
4:00-4: 15	Information for 2nd day		

Day 2: Planning exercise

Time	Activities	Methodology	Responsibility
10:00-10:15	Recapitulation		
10:15- 10:45	Vision and Objectives (3)	Brainstorming exercise in plenary	Facilitator
10:45-11:45	Presentation of observational *Findings* - Good points - Areas to be improved	Presentation in plenary by group leaders	Group leaders
11:45-12:15	Consolidation, refining of findings, and consensus building	Group work	Group leaders
12:15-1:15	Lunch		
1:15-1:30	Functionality linkages of different units	Presentation in Plenary	Dr Ganga
1:30- 3:30 PM	Planning exercise (areas to be improved) **Action plan** - within a year (2014/15) - within 5 years (2015-2020)	Group work	Group leaders
3:30- 3: 45	Prioritization of planned activities	Discussion in Plenary	Group leaders
3:45-4:45	Presentation/discussion	Presentation in plenary	

Day 3: Resource planning and budgeting

Time	Activities	Methodology	Responsibility
10:00-10:15	Recapitulation	Plenary	
10:15-11:30	Resource mapping (Aama, hospital, DDC, EDPs etc) and quantification	Group work	Facilitator /Devi
11:30-12:30	Budgeting (estimating)	Group work	Group leaders
12:30-1:30	Lunch		
1:30- 2:30	Group presentation/ debriefing	Presentation in plenary	Group leaders
Remarks from stake holders and closing remarks			
2:30-2:45	Next steps (monitoring plan)	Small meeting	Facilitator

Annex 2: Workshop participants

Seti Zonal Hospital (13–15 April 2014)

	Name	Designation	Organization
1	Dr Ganesh Bahadur Singh	Medical Superintendent	Seti Zonal Hospital
2	Dr Bisha Singh Bohora	Gynae	Seti Zonal Hospital
3	Dilip Kumar Shrestha	MRO	Seti Zonal Hospital
4	Jayant Kumar Upreti	Radiographer	Seti Zonal Hospital
5	Lochan Raj Regmi	Account Officer	Seti Zonal Hospital
6	Gita Bist	Manager	NRH Dhangadhi
7	Bijaya Regmi	ANM Sixth level	Seti Zonal Hospital
8	Manju KC	SN	Seti Zonal Hospital
9	Meena Tamang	Senior auxiliary nurse-midwife	Seti Zonal Hospital
10	Kamala N Bhatta	SN	Seti Zonal Hospital
11	Krishna Bahadur Bohora	Emergency room in-charge	Seti Zonal Hospital
12	Tara Devi Tamang	DPHO	Dhangadi
13	Lok Raj Paneru	Acute respiratory infection (ARI) Focal person	MD
14	Shova Gurung	MNH Officer	Care Nepal
15	Dr Pranab Joshi	Ortho Surgeon	Seti Zonal Hospital
16	Dr Ashok Chaudhary	Medical Office	Seti Zonal Hospital
17	Deepak Upadhaya	TV journalist	Dhangadi
18	Yogeon Raud	Reporter	Dhangadi
19	Niyam Raj Niure	HA (AA)	Seti Zonal Hospital
20	Dr RA Meheta	Doctor	Seti Zonal Hospital
21	Janaki Rawat	Member	Far Western W Ja. Munch (advocacy forum)
22	Dr Anil Kumar Gupta	MO	
23	Dr Lali BK	MO	Doti
24	Sharmila Rawat	Member	Far Western W Ja. Munch (advocacy forum)
25	Khem Raj Joshi	DOTS In-charge	Seti Zonal Hospital
26	Bhisnu Prasad Chaudhary	Lab Technician	Seti Zonal Hospital
27	Danda Singh Saud	Computer assistant	Seti Zonal Hospital
28	Chiranjibi Ghimire	Account Officer	DHO, Kailali
29	Shiv Bahadur KC	Training Coordinator	Seti Zonal Hospital
30	Jit Bahadur Shah	Nayab Subba	Seti Zonal Hospital
31	Min Bahadur Saud	Sweeper	Seti Zonal Hospital
32	Yashoda Dhakal	SN medical ward In-charge	Seti Zonal Hospital
33	B Badel	SN surgical ward In-charge	Seti Zonal Hospital
34	Dr Hem Raj Parajuli	Ob/gynae consultant	Seti Zonal Hospital

	Name	Designation	Organization
35	Shanta Bhatta	Nursing Officer	Seti Zonal Hospital
36	Shakti Prasad Shrestha	Maintenance Officer	Seti Zonal Hospital
37	Sunita Khatri	Staff Nurse	Seti Zonal Hospital
38	Dr Anjana Sharma	Medical Officer	Seti Zonal Hospital
39	Dr Khagendra Raj Shrestha	Sr. Medical Office	Seti Zonal Hospital
40	Keshab Raj Joshi	Member	Seti Zonal Hospital
41	Govinda Timilsaina	Ex. chairman	Seti Zonal Hospital
42	Surya Pd Shrestha	Chairman	Seti Zonal Hospital
43	Dibya Prasad Pant	Ex. chairman	Seti Zonal Hospital
44	Jaya Bahadur Karki	Sr PHA	DPHO, Kailali
45	Dr Shilu Aryal	Sr Consultant, Ob/Gyne	FHD
46	Prem Bahadur Ale	Member	Doti
47	Bharat Pandey	Staff Nurse	
48	Anju Acharya	ANM Six	Navajeevan Hospital
49	Shardad Sanam	Member	NRCS Kailali
50	Ram Bahadur Khatri	Reporter	Dinesh Fm
51	Barsha Poudel	Staff nurse	Seti Zonal Hospital
52	Khagendra Raj Joshi		NRCS
53	Khem Raj Bhandari	Supervisor	FPAN, Kailali
54	Arun Prasad Paneru	BMET	Seti Zonal Hospital
55	Dr Surya Bdr Rawal	Consultant physician	Seti Zonal Hospital
56	Padam Raj Joshi	Section Officer	DPHO, Kailali
57	Tej Raj Bhatta	Executive Editor	Dhangadhi Post Daily
58	Dr Birendra Rawal	Editor	Moving Bell
59	Lachhai Ram Chaudhari	Office Helper	Seti Zonal Hospital
60	Ganesh Raj Joshi	Office Helper	Seti Zonal Hospital
61	Radha Devi BK	Office Helper	Seti Zonal Hospital
62	Dil Bahadur Chhantyal	Reporter	Daily Nagarik
63	Shiv Raj Bhatt	Reporter	Annapurna Post
64	Damber Giri	Reporter	Radio Western
65	Santa Dangi	Program Manager	Care Nepal
66	Sunaina Shrestha	Sr AHW	Seti Zonal Hospital
67	Lata Bajracharya	SM Regional Coordinator	Far Western Region Health Directorate, Doti
68	Devi P Prasai	Consultant	NHSSP
69	Dr Ganga Shakya	Sr. CEONC Consultant	NHSSP
70	Karuna Laxmi Shakya	Q.S. Adviser	NHSSP
71	Dr Maureen Dariang	EHCS Adviser	NHSSP

Annex 3: Visioning and Objective Setting Exercise

Vision and Objectives of Seti Zonal Hospital

Group 1 • Regional and referral hospital • Technically sound • Human resource production site (training site) • Secure and health (health insurance) • Available PHC and specialized services at minimum cost **Group 2** • Far-western regional hospitals • Specialized 24 services **Group 3** • Far-western regional hospital **Group 4** • Referral hospital **Group 5** • Multi-specialty hospital • Competent HR and number adequate • Op. theatre capacity built up • Quality improvement: rotation with medical college • Training site (intern, MDGP) • ICU/CCU and supplies as necessary • Parking areas, waiting hall	**Agreed Vision:** Referral hospital with multi-specialties, trusted by communities and producing skilled human resources.
Group 1 & 2 **Objectives:** - To provide quality care - To provide specialised care using modern technology at affordable cost - Provide efficient and effective services **Group 3** - Expansion of service - Human resource development - Infrastructure development **Group 4** - Competent and committed HR available - Deliver quality services promptly - Develop specialties (target) **Group 5** - Produce adequate number of HR through training - Provide specialised services - Develop Seti Zonal hospital as a teaching hospital	**Agreed Objectives:** - To ensure availability of competent and committed human resources - To expand services including specialties at affordable costs - To enhance the quality of care - To develop the hospital as an academic institution

Annex 4: Checklist Format for Hospital Observations

Ward/department/service unit**:**

Unit in-charges will keenly observe the specific wards/areas and note the need, gaps, and issues.

Not limited to following things:

	Good things	Areas of improvement
Neatness and cleanliness		
Visitor waiting areas/Client flow management/Security Guards		
Hand washing provision/toilets for Client, service providers and visitors(privacy, water, light and drainage)		
24 hr electricity/power backup		
24 hour water supply		
In each service area look for availability of HR, drugs, equipment and supplies, furniture, toilet, water, electricity, back up electricity,		
infrastructure, rooms, quarters, training halls , visitors waiting halls		
Laundry, waste disposal container		
Waste disposal pits		
Placenta pits		
Visitor waiting areas/client flow management/security guard		
Other:		

Annex 5: Observational Findings

Seti Zonal Hospital, 13–15 April 2014

	Checklist	Good points observed	Areas to be improved
Group 1 observations per hospital unit			
1	MCH clinic:	Staff: • Staff nurse – 2 • ANM – 2 • Ward attendant - 1 Has separate ANC check-up room. Has separate counselling (prevention of mother to child transmission of HIV, PMTCT) room. Prompt management of high risk cases. Good coordination.	Inadequate space in waiting room. Need better waiting area. Toilet needs maintaining (is blocked) Lack of hand washing basins. Need to add basin in waiting hall and ANC check room. Need USG machine in ANC room. Need USG training for ANC nurses.
2	Labour room:	Staff: • Doctors – 3 • Nurses – 12 • Helper staff – 4 • Cleaners - 2 Equipment: • Delivery beds – 2 • Waiting beds – 7 • Post-operative beds- 9 (24 hrs), post-operative bed – 16 • Post natal beds – 16 • Gynae beds – 8 No. of deliveries: • Normal deliveries – 18/day • Caesarean cases (LSCS)– 3/day • Post-abortion care (PAC) cases – 2/day	• Make visitor room at rear of CSSD room. • Need in-charge room in each ward. • Nursing administration. • Intercom phone. • Information desk should be established. • Central supply of oxygen in each ward as required. • Focal person for client related issues should be identified. • Establish housekeeping department.
3	Paediatric ward	Current staff • Paediatric consultant – 1 • Medical officer – 1 • Nursing staff – 5 • Ward attendants – 2 • Cleaners – 2	• Need paediatric consultant-1 • Need medical officer-4 • Need nursing staffs-7 • Need ward attended-2 • Need cleaner – 2
		• Proper lighting. • Good water supply. • Visitors controlled. • Toilets and bathrooms are adequate. • Paediatric ward is clean • Good free children's ward • Isolation room • Expansion of 50 beds - local resources	• Need NICU. • Maintain proper drainage system. • Need back-up lighting. • Congested area for general paediatric ward. • Inadequate beds and mattresses. • Need waiting room for mother & visitors. • Kangaroo mother care (KMC) room needed.
4	Operation Theatre	Current human resources: • Scrub nurse – 4	• Need scrub nurse -6 • Need anaesthetic assistants - 2

	Checklist	Good points observed	Areas to be improved
		• Anaesthetic assistant – 3 • Helper staff – 2 • Cleaners – 2	• Need anaesthetic doctor-2 • Need helper staff –4 • Need cleaners – 2
			Needs for pre-op. and recovery room. • Insufficient waiting room • Congested op. theatre • Storeroom needed in op. theatre • Need rest room for doctors and staff • Need large autoclave for op. theatre • Need anaesthesia machine • Resuscitation set for paediatrics • Separate OT for gynae and surgery • OT light and cautery machine.
5	Admin & finance, medical records and MeSu room, emergency ward, laboratory room, X-ray room		• Update information charts & graphs in medical superintendent's office • Need AC in MeSu's office • Need toilets in MeSu office • Need soft board • Need computer in account section • Need data entry software • Need computer in medical records office • Need improved cleanliness in all wards except children's ward • Need generator — frequent interruptions of electricity to X-ray machine • Inadequate supervision to emergency ward because of heavy service load • Lack of time devoted to general management • Lack of emergency drugs • Lack of blood bank refrigerator • Lack of human resource for lab • Lack of lab equipment • Lack of bio chemical analyser • Inadequate space for lab • Need toilets for patients • Inadequate space for labour room • Inappropriate incinerator.
Group 2:	**Labour room, ANC, postnatal, post-operative ward and operating theatre**		
1	Neatness and cleanliness	Acceptable	There are many problems to keep ward neat and clean such as floor, overcrowded patients and visitors, inadequate human resources
2	Visitors waiting areas, client flow management, security	Not good	Visitors are not controlled, waiting area is not available for visitors, no security guards. Gate pass system needs introducing.

	Checklist	Good points observed	Areas to be improved
3	Hand washing provision, toilets, privacy, water, light and drainage	Hand washing provision good in labour and waiting rooms. Toilets available in all areas for client and visitors. There is 24 hrs water supply & electricity in labour room. Backup electricity is available in labour room.	Handwashing provision not available in postnatal, post op and gynae wards. No toilets for staff in post op and gynae wards. Drainage system not good especially in rainy season, when ward ground floors become waterlogged. Blockage problem in all toilets. Screen needed in post op and gynae ward Need air conditioner in labour room Need tiles on floor.
4	Availability of human resources, drugs, equipment and supplies, furniture	Good availability of drugs, equipment and supplies.	Sufficient human resources not available (doctors, anaesthetics and nurses, ward attendant, cleaner staffs) Insufficient beds, lockers and other furniture. Need equipment: computor-1, ECG machine -1, vacuum set -1, central oxygen system, oxygen head box-6 for neonates, warmer-2, delivery bed-4, resuscitation table-4, AC -2 in delivery room, stitch cutting scissors, inverter, portable USG machine, laryngoscope (neonate size), ambu bag with face mask for neonates, LCD TV; for health education, camera.
5	Infrastructure rooms, quarters, training halls, visitors waiting hall	Training hall is good	Infrastructure of maternity ward is very old Insufficient room for op theatre, ANC, delivery beds. No separate post-op ward, no room for visitors Quarters insufficient, no nursing duty room, no admission room/reception room, no intercom. No hostel for training participants.
6	Laundry, waste disposal container, waste disposal pit	Some disposal containers available in all areas.	No proper laundry. No waste disposal pit. Incinerator not functioning well.
7	Placenta pit	Placenta pit is available (but almost full)	Another placenta pit is needed.

Planning Workshop 2

Narayani Sub-Regional Hospital, Birgunj

Report on Planning Workshop 2:

Narayani Sub-Regional Hospital, Birgunj

20-22 April 2014

Family Health Division

and

Nepal Health Sector Support Programme

September 2014

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Devi Prasad Prasai

Consultant

CONTENTS OF NARAYANI HOSPITAL REPORT

ACRONYMS

AA	anaesthesiologist assistant
AC	air conditioner
ANC	antenatal care
ANM	auxiliary nurse-midwife
BC	birthing centre
BS	Bikram Sambat (Nepali dates)
BSc	Bachelor of Science
BTS	Blood Transfusion Service
CCTV	closed-circuit television
CDO	chief district officer
CEONC	comprehensive emergency obstetric and neonatal care
CHD	Child Health Division
CPM	continuous passive motion
CT	computed tomography
DDC	district development committee
dept	department
DFID	Department for International Development (UK Aid)
DPHO	district public health office
ECG	electrocardiogram
EDCD	Epidemiology and Disease Control Division
ENT	ear nose and throat
FESS	functional endoscopic sinus surgery
FHD	Family Health Division
FNCCI	Federation of Nepali Chambers of Commerce
GoN	Government of Nepal
HA	health assistant
HDB	hospital development board
HFOMC	health facility management and operation committee
HMIS	Health Management Information System
HoD	head of department
ICU	intensive care unit
KTM	Kathmandu
KVA	kilovolt-ampere
LDO	local development officer
MBBS	Bachelor of Medicine, Bachelor of Surgery
MCH	maternal and child health
MDGP	Doctor of Medicine in General Practice
MeSu	medical superintendent
MICU	medical intensive care unit
MNCH	maternal, newborn and child health
MoHP	Ministry of Health and Population
MP	Member of Parliament
MR	medical recorder
NA	not available

NGO	non-government organisation
NHSSP	Nepal Health Sector Support Programme
NICU	neonatal intensive care unit
NIPP	neonatal individualized predictive pathway
no.	number
NPR	Nepalese rupee
NRCS	Nepal Red Cross Society
NSRH	Narayani Sub-Regional Hospital
OP	outpatient
OT	operating theatre
P1, P2, P3	priority 1 (highest priority) to priority 3 (lowest priority)
PHN	public health nurse
PIC	paediatric intensive care
PICU	paediatric intensive care unit
PSC	Public Service Commission (Lok Sewa)
PUVA	psoralen (P) and ultraviolet A (UVA) therapy
RH	reproductive health
RHCC	reproductive health coordination committee
VDC	village development committee
WHO	World Health Organisation

1. INTRODUCTION

1.1 Workshop Rationale

Recent years have seen a greatly increased demand for institutional births in Nepal, especially in referral hospitals. Many of these hospitals have found it difficult to meet the demand. A recent study of six referral hospitals (FHD and NHSSP 2013)[4] made a number of recommendations to help overcome overcrowding. To address the recommendation of carrying out context specific planning to make improvements planning workshops were held in three referral hospitals (Bheri Zonal Hospital, Seti Zonal Hospital, and Narayani Sub-Regional Hospital) in 2014 to develop plans for responding to the increased demand for maternity care.

Although it wasn't one of the studied hospitals, Narayani Sub-Regional Hospital (NSRH, Birgunj, south-central Nepal) was chosen for the current initiative as a referral hospital where the quality of maternity care is most compromised by a crowded maternity ward and inadequate maternity care. The demands for maternity care have increased significantly but the facilities to supply them have only increased marginally. There is a shortage of nurses and doctors for birth-related care in the hospital and an inadequate number of beds meaning that some patients are on mattresses on the floor and some even have to share a bed. Toilets, drinking water and other amenities are also inadequate.

Narayani Sub-Regional Hospital is a semi-autonomous institution managed by a hospital development board (HDB) with senior hospital executives responsible for service delivery and the quality of care. As already noted, the challenge of responding to the increased demand for institutional deliveries across the country lies beyond the reach of individual facilities or district health authorities and local governments. It requires MoHP's leadership to improve the wider referral network by collectively agreeing mitigating strategies and securing the resources needed to implement suitable programmes.

Regular hospital planning tends to happen in a fragmented way with each department making separate and largely uncoordinated plans. This leads to overlaps and duplication in the planning process as different departments have common equipment and personnel needs. It was therefore felt essential to produce an integrated plan across all hospital departments to address overcrowding.

1.2 The Workshop

A planning workshop was held at NSRH from 20-22 April 2014 to produce an integrated plan for the hospital to address overcrowding and service provision across the hospital in general and in the maternity department in particular. This integrated approach was taken as it is difficult to plan for maternity care alone as maternity care needs, such as a well-functioning operating theatre, radiology, administration and pathology services, are needed by all of a hospital's medical departments.

The agenda and schedule of the workshop are given in Annex 1. The names of the 65 hospital administrators, doctors, and representatives of local government, political parties and other stakeholders who attended are listed at Annex 2.

[4] FHD and NHSSP (2013).Responding to Increased Demand for Institutional Childbirths at Referral Hospitals in Nepal: Situational Analysis and Emerging Options. Kathmandu: Family Health Division and Nepal Health Sector Support Programme.

The purpose of the workshop was to prepare an action plan to address the challenges of increased demand for hospital care, particularly for maternity services.

The workshop's objectives were as follows:

- To understand the problems, issues and challenges of providing maternal, neonatal and child health (MNCH) services in Narayani Sub-Regional Hospital.
- To develop costed and prioritised plans and activities to reduce overcrowding in Narayani Sub-Regional Hospital particularly for maternity wards, with the support of the Family Health Division (FHD) and the Ministry of Health and Population (MoHP).
- To expand the human and physical capacity of the hospital in order to accommodate the additional demands for the hospital services by the year 2020.
- To develop a monitoring and evaluation plan to track implementation of the prioritised plans.

1.3 Approach and Methods

The workshop was run in a participatory and inclusive way, with participants ranging from hospital cleaners to the chair of the hospital development board (HDB). The workshop took a holistic approach by covering all units and employed a problem identification and problem solving approach.

The workshop was run through presentations, discussions in plenaries, observations of the hospital infrastructure and service provision, group discussions and presentations, brainstorming exercises, and resource mapping exercises.

2. THE BUSINESS OF THE WORKSHOP

The workshop had the following three main parts:

- Understanding problems, issues and concerns.
- Planning for improvements.
- Mapping actual and potential resources for making improvements.

2.1 Understanding Problems, Issues and Concerns

The following activities took place at the workshop to understand the problems and challenges faced by the hospital in providing services:

1. *Sharing evidence and national policies:* The facilitator presented the major findings and recommendations from the FHD and NHSSP (2013) study.
2. *Sharing felt needs:* The medical superintendent (MeSu) of the hospital gave a presentation on the current situation of the hospital and the challenges it faced. The paper articulated the felt needs of the hospital staff both in general and specifically for improving maternity services.
3. *Observing hospital departments and units:* Five groups of workshop participants were formed and each was assigned a focal area of hospital work to observe (see Table 1). The groups then recorded the client loads, human resources, equipment and infrastructure of their focal areas using a checklist (see Annex 3) to understand the problems of the hospital. The findings are given at Annex 4.
4. *Good points and things to be improved* were noted down by group members in the course of their observation visits. Their findings were presented in a plenary session.

Table 1: Composition of the five workshop groups

Group	Focus	Participants
1	Hospital reception, emergency, indoor medical, surgical, wards, (leader of each team)	Doctors and nurses assigned to the outpatient (OPD) and emergency departments, health workers, support staff
2	Antenatal care (ANC), labour room, postnatal care (PNC), gynaecology, operation theatre, post-operative	Doctors and nurses assigned to the labour room, the operating theatre, post-operative ward, ANC/PNC, neonatal and paediatric ward, neonatal intensive care unit (NICU), ICU, medical intensive care unit (MICU), and anaesthetists and anaesthetist assistants
3	Laboratory, ultrasound, X-ray dept, blood transfusion service, pharmacy, medical records, ambulance, administration, accounts	Radiologist, X-ray technicians, lab technicians, pharmacist, accountants, medical recorders, blood bank technicians
4	Infrastructure development including waste disposal, toilets, utilities, water, electricity, hand washing, sub-stores, placenta pits, and doctors and nurses quarters	Engineers, repair and maintenance technicians staff, technicians, accountants, political party representatives, LDO, members of hospital development board
5	Partnership, coordination, referral, resource management and transport management	Chief district officer (CDO), district development committee (DDC) representative, district public health office (DPHO) personnel, public health nurses (PHNs), INGOs, NGOs, journalists, private health service providers

2.2 The Planning Exercise

The following planning exercises were then carried out:

1. *Visioning:* A brainstorming exercise was carried out by each group to develop a vision statement for the hospital. The five groups developed vision statements which they presented in a plenary session (see Annex 5). The facilitator and resource persons then identified common themes and drafted a common vision statement that was finalised and agreed in a plenary session.
2. *Establishing objectives:* The objectives of the hospital were prepared in a smaller group, presented and agreed upon.
3. *Defining activities:* Based on the observation visits, other evidence, and the expressed felt needs of hospital staff, improvements were identified to help meet the objectives. (These improvement 'activities' were mostly in terms of infrastructure improvements, quality of care improvements, additional human resources, and more equipment). These 'improvements 'were further discussed in groups with reference to their practicality, affordability, technicality and feasibility. After completing the planning exercise, each group presented an action plan for its focal areas in a plenary session. Relevant comments and suggestions were then incorporated into the draft plans.
4. *Identifying priority activities*: All participants assigned priorities (P1, P2, P3) to the various activities based on their cost, urgency for improving service delivery, and contributions to saving lives. Activities requiring large resource inputs, such as the expansion of services and infrastructure and the planning and reorganisation of departments were generally given a low priority (P3) as they were seen as financially unrealistic.

2.3 Mapping Resources

Potential resources for funding hospital improvements were explored in consultation with heads of departments and district level stakeholders. This resource mapping exercise covered formal and informal sources of funding, including institutional resources and donations from companies and individuals. The following stakeholders committed to supporting or mobilising support for the hospital in various ways, although many did not commit specific amounts (see details in Table 17):

- The executive officer of Birgunj sub-metropolitan city said that his organisation would commit some funds to develop the hospital — mainly for a visitors' room and hospital waste management.
- Political party representatives said they would mobilise local resources.
- The chairperson of the Hospital Sarokar Samuha (an informal group of stakeholders, including departmental heads, that meets to address hospital infrastructure issues) committed to mobilising donations from local businesses to improve the hospital.
- The chief district officer (CDO) and the chairperson of the hospital development board suggested that MoHP should install a businessperson as chairperson of the board. Such a person was likely to be effective at generating more resources for the hospital's development.
- The local development officer (LDO) committed to supporting the hospital.

A monitoring plan was developed at the end of the workshop that assigns responsibilities to monitor implementation of the plan, and defines indicators and means of verification. The monitoring plan is given in Table 18.

2.4 Next Steps

The medical superintendent ended the workshop by asking for the cooperation of MoHP, the Department of Health Services, the Family Health Division, I/NGOs and civil society in implementing the plan. He committed to coordinate with local businesspersons to raise donations.

The responsibility for organising meetings every three months to monitor implementation of the plan was assigned to the medical superintendent.

Note that the means of monitoring the implementation of the plans are summarised in Section 3.4.

2.5 Limitations of the Workshop

The workshop faced several limitations:

- A few doctors had to leave the workshop for periods to attend to emergency cases.
- The presentation on the current situation of maternal mortality in Nepal and Parsa district was cut due to time limitations.
- The long-time taken up by the remarks of political party representatives meant it was difficult to adjust the time for remaining activities.
- An exact costing exercise could not be carried out in the absence of a price list of equipment and construction materials, and so only rough estimates were given.

3. INTEGRATED ACTION PLAN FOR NARAYANI HOSPITAL

3.1 Vision and Objectives of the Plan

The workshop agreed on the following vision for the hospital:

> *A referral hospital with multiple specialties, trusted by communities and producing skilled human resources*

The workshop agreed on the following objectives for the hospital:

- To ensure available, competent and committed human resources.
- To expand services including affordable specialities.
- To enhance the quality of care.
- To develop the hospital as an academic institution.

The workshop developed 10 output indicators (see Table 2) and 4 input indicators (see Table 3) to monitor progress on meeting the objectives.

Table 2: Output indicators to achieve objectives for Narayani Sub-Regional Hospital (based on exponential growth)

	Output	Output indicators
1	Expand services	1. Increased no. of deliveries from 5,840 in 2013/14 to 10,000 in 2019/20. 2. Increased inpatient discharges from 17,602 in 2013/14 to 24,000 in 2019/20. 3. Increased no. outpatients from 108,297 in 2013/14 to 150,000 in 2019/20. 4. Increased emergency cases from 34,679 in 2013/14 to 42,000 in 2019/20.
2	Available human resource	5. Maintain doctor-bed ratio of 1:6 and nurse-bed ratio of 1:3. 6. Maintain 4 doctors and 20 nurses for every 3,500 deliveries (= WHO standard).
3	Enhance quality of care	7. Maintain bed occupancy rate of 75-80% in maternity unit (with no floor beds). 8. Reduce stillbirths from 4.1% of all births in 2013/14 to <1% in 2019/20 (quality). (source: medical superintendent) 9. 80% of clients are satisfied with services provided.
4	Academic institution	10. The hospital becomes an accredited centre for providing practical tuition to MBBS, MDGP, BSc nursing and other courses by 2020.

Table 3: Input indicators to achieve objectives for Narayani Sub-Regional Hospital (based on exponential growth)

	Input indicators
1	Increase maternity bed numbers from 50 in 2013 (37 for maternity and 13 for gynaecology) to 58 in 2014/15. Further increase to 100 (including birthing unit) by 2019/20.
2	Increase from 5 doctors in 2013/14 to 7 in 2014/15, and from 12 nurses in 2013/2014 to 18 in 2014/2015 in maternity unit. Further increase to 12 doctors and 57 nurses by 2019/20 in maternity unit.
3	Increase total hospital bed numbers from 200 in 2013 to 500 in 2019/20.
4	Increase number of doctors from 40 in 2013 to 83 in 2019/20, and nurses from 53 in 2013 to 166 in 2019/20.

3.2 The Action Plans

The workshop participants developed plans for improving the following 12 main areas of work of the hospital: infrastructure; maternity wards and operation theatre; paediatric ward and neonatal intensive care unit (NICU); emergency unit; blood transfusion service (BTS), pathology and emergency laboratory; medical records, administration and accounts sections; partnership, coordination and resource mobilisation; surgical and orthopaedic; medical; skin, venereal diseases (VD), ear nose and throat (ENT), mental; radiology and physiotherapy; and mortuary (see Tables 5–16):

Workshop participants (department heads and other stakeholders) identified areas of improvement and relevant logistical details including location, quantity needed, tentative budget (in NPR), potential sources of funding, lead role, support role, monitoring indicators, and the timeframe for implementing improvements. Participants then assigned priorities for these improvements with:

- P1,denoting high priority,
- P2, moderate priority;
- P3, low priority.

Note that the unavailability of a price list at the time of workshop meant that cost data is missing for some items.

The consolidated human resource needs are given in Table 4. These combine the human resources identified by workshop participants across the hospital departments.

Table 4: Additional human resources needed for Narayani Sub-Regional Hospital (2014)

	Department	Doctors	Nurses	Paramedics & other	Helpers	Guards	Total
1	Maternity	2	6	0	0	3	11
2	Operation theatre	1	0	3	0	0	4
3	Paediatrics	4	6	0	4	0	14
4	Neonatal intensive care unit (NICU)	5	10	3	2	0	20
5	Intensive care unit (ICU)	1	2	0	4	0	7
6	Pathology	2	0	10	0	0	12
7	Emergency	3	0	4	0	0	7
8	Surgical/ orthopaedics	0	2	0	2	0	4
9	Ear nose and throat (ENT)	0	0	0	0	0	0
10	Medical ward	1	2	0	2	0	5
11	Psychiatric	0	1	1	0	0	2
12	Radiology (BSc radiologist)	0	0	1	0	0	1
13	Skin	2	0	0	0	0	2
14	Medical records (recorder)	0	0	4	0	0	4
	Total	**21**	**29**	**26**	**14**	**3**	**93**

Table 5: Infrastructure action plan (Narayani Sub-Regional Hospital, April 2014)

	Activities	Location	Additional no. needed	Tentative budget (NPR)	Budget source	Lead role	Support role	Monitoring indicators	Timeframe (Nepali BS)	Priority
1	Renovation of maternity ward and cabins	NSRH	4+1 rooms	1,000,000		MeSu		Work satisfactory completed	2071/71	P2
2	Renovation and addition of floors in emergency building for expansion of post-operative and gynaecology wards	NSRH		6,000,000		MeSu		Work satisfactory completed	2071/71	P2
3	Build new 300 bed hospital building as per master plan (existing = 200 beds) to give 500 beds	NSRH	1	400 million	MoHP: 50%, donations: 50%	HDB chair	MeSu	Is in use	2076/77 (2020)	P3
4	Water supply	Store	2	50,000	GoN	MeSu	Engineer	Is in use	2071/71	P2
5	Internet, telephone, fax	Store		50,000	GoN	MeSu	Computer operator	Is in use	2071/71	P2
6	Helper	Store	1	100,000	GoN	MeSu	Administration	Is in use	2071/71	P2
7	Transport – van lorry	Store	1	1,200,000	GoN	MeSu	Store/account	Is in use	2071/71	P2
8	Motorbike	Store	1	200,000	GoN	MeSu	Store/account	Is in use	2071/71	P2
9	Store building	Store	1	2,500,000	GoN	MeSu	Engineer	Is in use	2071/71	P2
10	Visitors room renovation and repair			500,000	Municipality	MeSu	Municipality	Is in use	2071/71	P3
11	Electricity for emergency dept (separate 24 hours line)	Emergency dept						Is in use		P1
12	Generator machine (125 KVA)	NSRH	1	1,600,000	GoN	MeSu	HDB	Is in use	2071/072	P1
13	Stabiliser	NSRH	1	500,000	GoN	MeSu	HDB	Is in use	2071/072	P1
14	CCTV set		5 depts		GoN	HoD	MeSu	Is in use	2071/72	P3
15	Projectors		2		GoN	HoD	MeSu	Is in use	2071/72	P3

Table 6: Maternity wards and operation theatre action plan (Narayani Sub-Regional Hospital, April 2014)

	Activities	Existing	Additional no. needed	Tentative budget (NPR)	budget source	Lead role	Support role	Monitoring indicators	Timeframe	Priority
Operation theatre										
1	Autoclave machine, horizontal (1)	1	1	75,000	GoN	OT in-charge	MeSu	Is being used or not	2071/72	P1
2	Monitor (NIPP)	2	2	-					2071/72	P1
3	Quick autoclave	1	1	15,000	GoN	OT in-charge	MeSu		2071/72	P2
4	OT light (new OT)	1	2	1,000,000	GoN	OT in-charge	MeSu		2071/72	P1
5	Caesarean section set	3	5	25,000	GoN	OT in-charge	MeSu		2071/72	P1
6	Hysterectomy set	2	3	15,000	GoN	OT in-charge	MeSu		2071/72	P1
7	Vaginal hysterectomy set	1	3	15,000	GoN	OT in-charge	MeSu		2071/72	P1
8	Baby warmer	0	2	30,000	GoN	OT in-charge	MeSu		2071/72	P1
9	3 phase electric suction machine (big)	1	4	20,000	GoN	OT in-charge	MeSu		2071/72	P1
10	Single phase electric suction machine (medium)	1	2	10,000	GoN	OT in-charge	MeSu		2071/72	P1
11	Hydraulic OT table	1 not in use	2	500,000	GoN	OT in-charge	MeSu		2071/72	P1
Surgery related										
12	OT table (ortho.)	0	1	750,000	GoN	OT in-charge	MeSu	Is being used or not (equipment), or are in post and working (personnel)	2071/72	P1
13	C-arm imaging scanner intensifier	0	1	4,500,000	GoN	OT in-charge	MeSu		2071/72	P1
14	Laparotomy set	1	2	100,000	GoN	OT in-charge	MeSu		2071/72	P1
15	Separate water tank for op. theatre	1	1	50,000	GoN	OT in-charge	MeSu		2071/72	P1
16	New electrical wiring (volt guard & panel)	0	1 set	To be decided	GoN	OT in-charge	MeSu		2071/72	P1
17	Volt guard & noticeboard		1	500,000	GoN	OT in-charge	MeSu		2071/72	P1
18	Stainless steel instrument trolley	6	6	60,000	GoN	OT in-charge	MeSu		2071/72	P1
19	Oxygen supply pipe wiring	0	setting	300,000	GoN	OT in-charge	MeSu		2071/72	P1
20	Human resources: doctor (A) + AA, staff nurse, peon & sweeper	1+3+	2	170,000	GoN	OT in-charge	MeSu		2071/72	P1
21	Anaesthesia machine with ventilator (for maternity OT)	2	1	1,200,000	GoN	OT in-charge	MeSu		2071/72	P1

	Activities	Existing	Additional no. needed	Tentative budget (NPR)	budget source	Lead role	Support role	Monitoring indicators	Timeframe	Priority
22	Telephone with access to intercom	2	1	5,000	GoN	OT in-charge	MeSu		2071/72	P1
23	Big washing machine	0	1	80,000	GoN	OT in-charge	MeSu		2071/72	P1
24	Furniture and linen		1,000	500,000	GoN	OT in-charge	MeSu		2071/72	P1
25	Vacuum set, forceps delivery set	0	2+2	100,000	GoN	OT in-charge	MeSu		2071/72	P1
26	Stainless steel drums (large, med, small)	old 3	10+10+4	100,000	GoN	OT in-charge	MeSu		2071/72	P1
27	Lead jacket (0)		10		GoN	OT in-charge	MeSu		2071/72	P1
Maternity ward										
28	Steel rack	0	1		GoN	HoD	MeSu	Is being used or not (equipment) or is providing services (personnel)	2071/72	P1
29	Cupboard	0	1		GoN	HoD	MeSu		2071/72	P1
30	Door repairs for labour room		1		GoN	HoD	MeSu		2071/72	P1
31	New nets on windows		1		GoN	HoD	MeSu		2071/72	P1
32	Wooden stand for gloves		1		GoN	HoD	MeSu		2071/72	P1
33	Cement basin with tiles		1		GoN	HoD	MeSu		2071/72	P1
34	Additional doctor (medical officer MBBS) & nurses		2+6		GoN	HoD	MeSu		2071/72	P1
Labour room										
35	Autoclave, medium, for labour room	1	2	116,000	GoN	HoD	MeSu	Is being used or not	2071/72	P1
36	Vacuum set		3	10,000	GoN	HoD	MeSu		2071/72	P1
37	Additional delivery set	16	10	100,000	GoN	HoD	MeSu		2071/72	P1
38	Additional normal deliv. episiotomy set	5	10	50,000	GoN	HoD	MeSu		2071/72	P1
39	Baby electric suction	0	2	50,000	GoN	HoD	MeSu		2071/72	P1
40	Round trolley		2	20,000	GoN	HoD	MeSu		2071/72	P1
41	Stainless steel drum (medium+ small)	6 old	10+10	52,000	GoN	HoD	MeSu		2071/72	P1
42	Folding bed(post-operative)		2	250,000	GoN	HoD	MeSu		2071/72	P1
43	Delivery bed		5	1,000,000	GoN	HoD	MeSu		2071/72	P1
44	Rack and cupboard		2+2	60,000	GoN	HoD	MeSu		2071/72	P1
45	Pulse oximeter(post-operative)	0	1	90,000	GoN	HoD	MeSu		2071/72	P1
46	Wooden stand for gloves		1	5,000	GoN	HoD	MeSu		2071/72	P1

	Activities	Existing	Additional no. needed	Tentative budget (NPR)	budget source	Lead role	Support role	Monitoring indicators	Timeframe	Priority
47	Bedside monitor	0	1	500,000	GoN	HoD	MeSu		2071/72	P1
48	Patient trolley	1	2	38,000	GoN	HoD	MeSu		2071/72	P1
49	Wheelchair	1	1	25,000	GoN	HoD	MeSu		2071/72	P1
50	Doppler machine	1		20,000	GoN	HoD	MeSu		2071/72	P1
Family planning/MCH clinic										
51	OT light (existing 2, additional 2)	2	1	500,000	GoN	In-charge	MeSu	Is being used or not (equipment) or is in post (staff)	2071/72	P1
52	Instrument trolley	1	1	20,000	GoN	In-charge	MeSu		2071/72	P1
53	OT table (existing 2, additional 2)	2	2	250,000	GoN	In-charge	MeSu		2071/72	P1
54	Autoclave machine	1	1	50,000	GoN	In-charge	MeSu		2071/72	P1
55	Additional staff nurse (contract)	1	1	20,000	GoN	In-charge	MeSu		2071/72	P1
Intensive care unit (ICU)										
56	Cardiac folding bed (additional)	4	2	1,000,000	GoN	In-charge	MeSu	Is being used or not (equipment), or is providing services (personnel)	2071/72	P2
57	Bedside suction machine	1	2	180,000	GoN	In-charge	MeSu		2071/72	P1
58	Pipeline oxygen supply		-	300,000	GoN	In-charge	MeSu		2071/72	P1
59	Emergency card box	1	1	75,000	GoN	In-charge	MeSu		2071/72	P1
60	Locker (multiple)	0	2	40,000	GoN	In-charge	MeSu		2071/72	P1
61	Human resources: doctor, nurse, peon	1+6	1+2+4	220,000/mth	GoN	In-charge	MeSu		2071/72	P1
62	Window AC, 1.5 ton	1	2	120,000	GoN	In-charge	MeSu		2071/72	P1
63	Voltage stabilizer 15 KV servo	1	1	300,000	GoN	In-charge	MeSu		2071/72	P1
64	ECG machine (6 channels)	1	1	350,000	GoN	In-charge	MeSu		2071/72	P1
65	Wheelchair	1	1	25,000	GoN	In-charge	MeSu		2071/72	P1
66	Trolley with oxygen stand		1	35,000	GoN	In-charge	MeSu		2071/72	P1
67	Cardiac table	2	4	30,000	GoN	In-charge	MeSu		2071/72	P1

Table 7: Paediatric ward and neonatal intensive care unit (NICU) action plan (Narayani Sub-Regional Hospital, April 2014)

	Activities	Existing	Location	Additional no. needed	Budget (NPR)	Budget source	Lead role	Support role	Monitoring indicators	Time frame	Priority
Paediatric ward (NICU new ward)											
1	Storeroom		Paediatrics		1,000,000	GoN	HoD	MeSu, UNICEF, CHD		2071/72	P2
2	Human resources: (doctor), staff nurse, & helper for paediatric ward		Paediatrics	4+6+4	3,016,000	GoN				2071/72	P1
3	Mothers' rest room renovation (put in false roofing)		Paediatrics	1		GoN				2071/72	P1
4	Human resources: (doctor) + SN + ANM + HA + helper for NICU ward (early)	3+2	NICU	5+10+3+2	4,745,000	GoN	HoD	MeSu, UNICEF, CHD		2071/72	P1
5	Baby mattress		Paediatrics	25		GoN	HoD	MeSu, UNICEF, CHD		2071/72	P1
6	Paediatric beds		NICU	15		GoN	HoD	MeSu, UNICEF, CHD		2071/72	P1
7	Monitor		NICU	5		GoN	HoD	MeSu, UNICEF, CHD	Is being use or not (equipment) or is providing services (personnel)	2071/72	P1
8	Oxygen head box		NICU	10		GoN	HoD	MeSu, UNICEF, CHD		2071/72	P1
9	Laryngoscope		NICU	2		GoN	HoD	MeSu, UNICEF, CHD		2071/72	P1
10	Ophthalmoscope		NICU	2		GoN	HoD	MeSu, UNICEF, CHD		2071/72	P1
11	Otoscope		NICU	2		GoN	HoD	MeSu, UNICEF, CHD		2071/72	P1
12	Ventilator, neonatal		NICU	2		GoN	HoD	MeSu		2071/72	P1
13	Phototherapy	4	NICU	10		GoN	HoD	MeSu		2071/72	P1
14	Infusion pump		NICU	15		GoN	HoD	MeSu		2071/72	P1
15	Incubator	0	NICU	5		GoN	HoD	MeSu		2071/72	P1
16	Open care system warmer	0	NICU	10		GoN	HoD	MeSu		2071/72	P1
17	Basinet		NICU	10		GoN	HoD	MeSu		2071/72	P1
18	Oxygen head box	3	NICU	25		GoN	HoD	MeSu		2071/72	P1

	Activities	Existing	Location	Additional no. needed	Budget (NPR)	Budget source	Lead role	Support role	Monitoring indicators	Time frame	Priority
19	AC (1.5 ton x 2)		NICU	2		GoN	HoD	MeSu		2071/72	P1
20	Oxygen cylinder	4	NICU	6		GoN	HoD	MeSu		2071/72	P1
21	PICU: 10 beds (future with 600 beds)		NICU			GoN	HoD	MeSu		2071/72	P3
22	Paediatric ventilator		NICU	10		GoN	HoD	MeSu		2071/72	P3
23	Infusion box		NICU	15		GoN	HoD	MeSu		2071/72	P3
24	Monitor			10		GoN	HoD	MeSu		2071/72	P3

Table 8: Emergency unit action plan (Narayani Sub-Regional Hospital, April 2014)

	Activities	Additional no. needed	Tentative budget (NPR)	Source of budget	Lead role	Support role	Monitoring indicators	Timeframe	Priority
1	Additional beds	10	225,000	GoN, donor	MeSu	Store & account staff	Is being used or not (equipment), or is providing services (personnel)	2071/72	P1
2	Additional patient trolley & wheelchairs	4	50,000	GoN, donor	In-charge	MeSu		2071/72	P1
3	Additional ECG machine (existing 1)	1	150,000	GoN, donor	In-charge	Me Su		2071/72	P1
4	Additional doctor& health assistant (existing 8)	3+4	60,000	GoN, donor	MeSu	PSC, HDB		2071/72	P1
5	Emergency cart (0)	1	75,000	GoN, donor	MeSu	HDB		2071/72	P1
6	Suction machine (existing 1)	2		GoN, donor	MeSu	HDB		2071/72	P1
7	Nebulizer machine (existing 1)	2		GoN, donor	MeSu	HDB		2071/72	P1
8	AC (1.5 ton)	2	300,000	GoN, donor	MeSu	HDB		2071/72	P1
9	Cardiac monitor	2		GoN, donor	MeSu	HDB		2071/72	P1
10	Disaster management (standards and setting)	2		GoN, donor		EDCD, UNDP		2071/72	P1

Table 9: Blood transfusion service (BTS), pathology and emergency lab action plan (Narayani Sub-Regional Hospital, April 2014)

	Activities	Location	Additional no. needed	Budget (NPR)	Source of budget	Lead role	Support role	Monitoring indicators	Timeframe	Priority
1	Establishment of Pathology Department	Pathology						Is being used or not (equipment), or is providing services (personnel)		
2	Infrastructure with department separation		5	500,000	GoN	MeSu	HDB		2071/72	P1
3	Human resources: Pathology Dept (technicians)		10	3,000,000	GoN	MeSu	HDB		2071/72	P1
4	Emergency lab setting in emergency & indoor complex		1	10,000,000	GoN	MeSu	HDB		2071/72	P1
5	Blood bank refrigerator for BTS (in each ward)	Blood bank	1	200,000	GoN	Nepal Red Cross Society	BTS KTM		2071/72	P1
6	Blood component machine	Blood bank	1	5,000,000	GoN	Nepal Red Cross Society	BTS KTM		2071/72	P1
7	Generator 15 KVA	Blood bank	1	250,000	GoN	Nepal Red Cross Society	BTS KTM		2071/72	P1
8	Haematology analyser (coulter counter)		2	2,000,000	GoN	MeSu	HDB		2071/72	P1
9	Biochemistry analyser(semi)		2	1,800,000	GoN	MeSu	HDB		2071/72	P1
10	Microbiology Co2 jar		1	100,000	GoN	MeSu	HDB		2071/72	P1
11	Hot air oven		1	25,000	GoN	MeSu	HDB		2071/72	P1
12	Computer and 4-in-one printer		2	200,000	GoN	MeSu	HDB		2071/72	P1
13	Micro pipettes		10	30,000	GoN	MeSu	HDB		2071/72	P1
14	AC 1.5 ton(0)		3	150,000	GoN	MeSu	HDB		2071/72	P1
15	Auto dispensers (2)		6	120,000	GoN	MeSu	HDB		2071/72	P1
16	Blood rotator (0)		3	60,000	GoN	MeSu	HDB		2071/72	P1

Table 10: Medical records, administration and accounts sections action plan (Narayani Sub-Regional Hospital, April 2014)

	Activities	Location	Additional no. needed	Tentative budget (NPR)	Source of budget	Lead role	Support role	Monitoring indicators	Timeframe	Priority
Medical records section										
1	Human resources: Assistant medical recorders	MR	4	1,200,000	GoN	MeSu	HMIS	Is being used or not (equipment), is providing services (personnel), trained personnel (training)	2071/072	P1
2	Software — HMIS 1	MR		300,000	GoN	MR	HMIS		2070/71	P1
3	Training in medical recording	MR	1 (6)	100,000	GoN	MR	HDB		2070/71	P1
4	Access to internet billing	MR		110,000	GoN	MR	HDB		2070/71	P1
5	Computer with accessories (2 set)	MR				MR	HDB		2070/71	P1
6	Helper (2)		2	300,000	GoN	MR	HDB		2070/71	P1
7	Furniture (rack) 10	MR		300,000	GoN	MR	HDB		2070/71	P1
8	Recording files/tools and printing of tools (formats)	MR		500,000	GoN	MR	HDB		2070/71	P1
9	Expand medical record section (room construction)	Me Su		2,000,000	GoN	Me Su	HDB			P1

Table 11: Partnership, coordination and resource mobilisation action plan (Narayani Sub-Regional Hospital, April 2014)

	Activities	Location	Additional quantity needed	Tentative budget (NPR)	Source of budget	Lead role	Support role	Monitoring indicators	Timeframe	Priority
1	Partnership meetings with DDC and local VDCs, (20)	DPHO	3 times	150,000	GoN/DPHO	PHN	DPHO	No. of birthing centres with partnerships	2070/71	P1
2	Orientation of HFOMC members (20)	PHCC	1 time	50,000	GoN/DPHO	PHN	DPHO family planning supervisor	Meetings held (minutes)	2070/71	P1
3	Coordination meeting between hospital and DPHO	Hospital	1 time	5,000	GoN/DPHO	PHN	MeSu, DPHO	Meetings held (minutes)	2070/71	P1
4	Review of Aama Programme with hospital participation	DPHO	1 time	300,000	GoN/DPHO	PHN	DPHO	Meeting held (minutes)	2070/71	P1
5	District RHCC meeting	DPHO	3 times	24,000	GoN/DPHO	PHN	DPHO	Meeting held (minutes)	2070/71	P1
6	Pre communication between birthing centres and referral hospital	Surrounding districts	On-going	100/mth in BCs	DPHO+ HFOMC	PHN	DPHO	80% of referrals communicated with hospital	2070/71	P1
7	Networking of ambulances	Surrounding districts	On-going	As per rate and distance	From transport costs	PHN	DPHO, hospital	Updated data based	2070/71	P1
8	Use of referral slips in birthing centres	Surrounding districts	On-going	5,000	DPHO	PHN	DPHO	80% of referrals communicated with hospital	2070/71	P1
9	SMS system for deliveries and referrals	Surrounding districts	Monthly	As in point 6	DPHO/ HFOMC	PHN+ birthing centre	DPHO	80% of referrals communicated with hospital	2070/71	P1
10	Monitoring: (joint DPHO-hospital)	Birthing centres	3 times	200,000	GoN/DPHO	PHN/sister	DPHO, hospital	Complete 4 joint visits	2070/71	P1

Table 12: Surgical and orthopaedic action plan (Narayani Sub-Regional Hospital, April 2014)

	Activities	Location	Additional no. needed	Tentative budget (NPR)	Source of budget	Lead role	Support role	Monitoring indicators	Timeframe	Priority
1	Additional folding beds in post-operative ward (existing 1)	Surgical	5	150,000	GoN/ donor	MeSu	Store and account staff	Is being used or not (equipment), is providing services (personnel),	2071/71	P1
2	Additional patient's trolley and wheelchairs (existing 1)	Surgical	2+2	50,000	GoN/ donor	In-charge	MeSu		2071/71	P1
3	Additional Stryker frame bed	Orthopaedic	1		GoN/ donor	MeSu	Donor agencies		2071/71	P2
4	Additional staff nurse	Post-operative	2	400,000	GoN/ donor	MeSu	PSC/MoHP		2071/71	P1
5	Additional helper	Post-operative	2	300,000	GoN/ donor	MeSu	HDB		2071/71	P1
6	Visitor waiting room	Surgical/ortho.	1	100,000	GoN/ donor	MeSu	HDB		2071/71	P1
7	Emergency cart	Surgical	1	75,000	GoN/ donor	MeSu	HDB		2071/71	P1
8	Guard	Surgical	3		GoN/ donor	MeSu	HDB		2071/71	P1
9	AC (1.5 ton)	Post-op	1		GoN/ donor	MeSu	HDB		2071/71	P1
10	Monitors		5		GoN/ donor	MeSu	HDB		2071/71	P1
11	Orthopaedic instruments & equipment				GoN/ donor	MeSu	HDB		2071/71	P1

Table 13: Medical action plan (Narayani Sub-Regional Hospital, April 2014)

	Activities	Location	Additional no. needed	Tentative budget (NPR)	Source of budget	Lead role	Support role	Monitoring indicators	Timeframe	Priority
1	Additional ECG machine	Medical	1	150,000	GoN	in-charge	MeSu	Is being used or not (equipment), is providing services (personnel)	3 month	P1
2	Additional trolley and wheelchairs	Medical	2+2	50,000	GoN	In-charge	MeSu		immediate	P1
3	Additional medical officer, staff nurse (2)	Medical	1+2	30,000	GoN	MeSu	PSC, HDB		2070/71	P1
4	Additional helper (current: 1)	Medical	2	7000	GoN	MeSu	Members of HDB		2070/71	P1
5	Visitor waiting room	Medical	one	100,000	GoN	MeSu	Donor groups		5 year	P1
6	Pulse oximeter (current: 2)	Medical	2		GoN	MeSu	Store dept, donors		5 year	P1
7	Cardiac eco-treadmill test (TMT) set	Medical	1			MeSu	MeSu			P3
8	Dialysis machine (current: 1)	Medical	5			MeSu	MeSu			P2
9	Emergency cart	Medical	2	30,000		MeSu	MeSu			P2
10	Suction machine	Medical	2			MeSu	MeSu			P2

Table 14: Skin, ear nose and throat (ENT), mental health action plan (Narayani Sub-Regional Hospital, April 2014)

	Activities	Location	Additional no. needed	Tentative budget (NPR)	Budget source	Lead role	Support role	Monitoring indicators	Timeframe	Priority
Skin department										
1	Human resources: skin doctor (dermatologist)		2	360,000	GoN	HoD	MeSu	Is being used or not (equipment), is providing services (personnel)	2071/72	P1
2	Electro cautery machine with radio frequency		1	30,000	GoN	HoD	MeSu		2071/72	P1
3	Indoor beds (infectious and non-infectious)		10	200,000	GoN	HoD	MeSu		2071/72	P1
4	Cosmetic surgery set		2	40,000	GoN	HoD	MeSu		2071/72	P1

5	PUVA machine		1	30,000	GoN	HoD	MeSu		2071/72	P1
6	Allergy test kit (supply)		-		GoN	HoD	MeSu		2071/72	P1
7	Laser machine		1		GoN	HoD	MeSu		2071/72	P3
ENT department										
8	Surgical instrument (set)	ENT	1		GoN	Unit in-charge	MeSu	Is being used or not (equipment), is providing services (personnel)	2071/72	P1
9	Functional endoscope	ENT	1		GoN	Unit in-charge	MeSu		2071/72	P1
10	PIC surgery set	ENT	1		GoN	Unit in-charge	MeSu		2071/72	P1
11	FESS set	ENT	1		GoN	Unit in-charge	MeSu		2071/72	P1
12	Bronchoscope	ENT	1		GoN	Unit in-charge	MeSu		2071/72	P1
13	ENT ward development	ENT			GoN	Unit in-charge	MeSu		2071/72	P1
Mental health dept										P2
14	Ward space		1		GoN	HoD	MeSu	Is being used or not (equipment), is providing services (personnel)	2071/72	P2
15	Psychiatric nurse training (3)		3		GoN	HoD	MeSu		2071/72	P2
16	Occupational therapist		1		GoN	HoD	MeSu		2071/72	P2
17	Essential drugs for mental health				GoN	HoD	MeSu		2071/72	P2
18	Psychiatric nurse		1		GoN	HoD	MeSu		2071/72	P2

Table 15: Radiology and physiotherapy departments' action plan (Narayani Sub-Regional Hospital, April 2014)

	Activities	Location	Additional no. needed	Tentative budget (NPR)	Source of budget	Lead role	Support role	Monitoring indicators	Timeframe	Priority
Radiology										
1	Department rearrangement (1 dept)	Medical imaging								
2	Ultrasound with 3 probes (existing 2)		2		GoN	HoD	MeSu	Available	2071/72	P2
3	X-ray 500 (existing300 MA/500 MA) CR		2		GoN	HoD	MeSu	Available	2071/72	P2
4	CT scan (multi slice)		1		GoN	HoD	MeSu	Available	2071/72	P2
5	AC 1.5 ton		3		GoN	HoD	MeSu	Available	2071/72	P2
6	Radiographer (2)		3		GoN	HoD	MeSu	Available	2071/72	P2
7	BSc radiographer		2		GoN	HoD	MeSu	Available	2071/72	P2
8	Radiologist		1		GoN	HoD	MeSu	Available	2071/72	P2
9	Staff nurse		1		GoN	HoD	MeSu	Available	2071/72	P2
Physiotherapy										
10	Traction unit 2 sets		2	500,000	GoN	Unit in-charge	MeSu	Used	2071/72	P2
11	Microwave diathermy		2	3,600,000	GoN	Unit in-charge	MeSu	Used	2071/72	P2
12	Short wave machine		1	400,000	GoN	Unit in-charge	MeSu	Used	2071/72	P2
13	Diagnostic muscle stimulator		1	50,000	GoN	Unit in-charge	MeSu	Used	2071/72	P2
14	Laser physio 20 MW		1	300,000	GoN	Unit in-charge	MeSu	Used	2071/72	P2
15	Ultrasonic therapy, 3 MH		2	100,000	GoN	Unit in-charge	MeSu	Used	2071/72	P2
16	Ultrasonic therapy, 1 MH		1	50,000	GoN	Unit in-charge	MeSu	Used	2071/72	P2
17	Cryotherapy unit		1	400,000	GoN	Unit in-charge	MeSu	Used	2071/72	P2

	Activities	Location	Additional no. needed	Tentative budget (NPR)	Source of budget	Lead role	Support role	Monitoring indicators	Timeframe	Priority
18	Digital tents		1	80,000	GoN	Unit in-charge	MeSu	Used	2071/72	P2
19	Low height tilt table		1	180,000	GoN	Unit in-charge	MeSu	Used	2071/72	P2
20	Robotic exerciser		1	200,000	GoN	Unit in-charge	MeSu	Used	2071/72	P2
21	Parallel bar		1	5,000,000	GoN	Unit in-charge	MeSu	Used	2071/72	P2
22	CPM knee		1	120,000	GoN	Unit in-charge	MeSu	Used	2071/72	P2
23	CPM elbow		1	180,000	GoN	Unit in-charge	MeSu	Used	2071/72	P2
24	Wall shoulder wheel		1	50,000	GoN	Unit in-charge	MeSu	Used	2071/72	P2
25	Physiotherapy beds		10	200,000	GoN	Unit in-charge	MeSu	Used	2071/72	P2
26	Human resource (2 assistants)		2	300,000	GoN	Unit in-charge	MeSu	Used	2071/72	P2

Table 16: Mortuary action plan (Narayani Sub-Regional Hospital, April 2014)

	Activities	Additional no. needed	Tentative budget (NPR)	Source of budget	Lead role	Support role	Monitoring indicators	Timeframe	Priority
1	Dissecting set	2		GoN	Unit in-charge	MeSu	Used	2071/72	P2
2	Dissecting light	2		GoN	Unit in-charge	MeSu	Used	2071/72	P2
3	Dissecting apron	2		GoN	Unit in-charge	MeSu	Used	2071/72	P2
4	Dissecting gloves	2		GoN	Unit in-charge	MeSu	Used	2071/72	P2

3.3 Resource Mapping

The results of the resource mapping exercise are given in Table 17 showing regular funding from the government as the main identified source of funding for the hospital.

Table 17: Resource mapping: Narayani Sub Regional Hospital (2014)

Institution/source	Expected contribution	Purpose
MoHP block grant	56,000,000	Human resources and associated costs
FHD Aama Programme	20,000,000	Human resources, drugs and supplies,
FHD response to overcrowding	3,000,000	HR aesthetic, OT nurse
FHD (equipment and furniture)	1,000,000	Equipment and furniture
Birgunj Municipality	500,000	Biogas/waste disposable system
DDC grant	500,000	Equipment, furniture
National Health Training Centre	NA	Advanced skilled birth attendant (ASBA) training establishment, Medio legal
National Centre for AIDS and STD Control (NCASC)	NA	Support to ART
CHD/Unicef for NICU	NA	NICU, Newborn corners
Central Lab	NA	Lab instruments, reagents
FNCCI and drug manufacturers	NA	Infrastructure development materials
UNICEF	NA	Support to NICU
Lions/Leo, others partners	NA	Labour room
HMIS, Management Division	NA	Software, networking
Parliamentary fund (MP fund)	NA	
Curative Division	NA	Organisation and management (O&M) survey
Medical college /nursing campus	NA	

3.4 The Monitoring of Implementation

The lead roles for the implementation of the action plans are given in Table 18. Separate monitoring indicators are given for each activity in Tables 5 to 16. The output and input indicators for overall hospital improvements in the next few years are given in Tables 2 and 3.

Table 18: Monitoring plan of the implementation of strengthening activities, Narayani Sub Regional Hospital (2013/14 to 2014/15)

Note that for all activity areas:

- the supportive role is by units in charges
- the monitoring indicator is: 80% of planned activities completed
- all progress reporting is to the hospital development board (HDB)
- the means of verification are the four-monthly progress reports

	Activity areas	Lead role	Cell
1	Surgical, orthopaedics, op. theatre	Dr Winner Pradhan BN Chaudhary Dr Chitranjan	9845025017 9845022020 9851155255
2	Medical	Dr Manoj Gupta MD Dr Ajit Kumar Shah	9845022653 9845283183
3	Emergency unit	Dr RK Singh Abadha Kishor Jaisawal	9845036080 9755001222
4	Pathology and radiology	Dr Vijaya Raj Khanal Harish Chand Bhagat Prabin Manandhar	9841208370 9845035144 9845024923
5	Maternity	Dr Surendra Prasad Chaudhary Vishkha Chaudary	9855045404 9845034160
6	Medical records, admin and accounts	Jaya P Shreevastav Akatar Hussein	9745005350 9845033366
7	Ear nose and throat, skin, and physiotherapy	Dr PL Prasad Dr Atulesh Churasiya	9803471236 9845100923
8	Infrastructure	Mukesh Sarawagi Shambhu Saran P Kalwar Gyasuddin Thakuri	9855022214 9855021042 9845021922
9	Partnership	Arun Kumar Mahato	9845265073

Annex 1: Agenda for Planning Workshop

Narayani Sub-regional Hospital, 20-22 April 2014

Objectives of the workshop:

1. To understand the problems, issues and challenges of providing maternal, neonatal and child health (MNCH) services.
2. To develop costed and prioritised plans and activities to reduce overcrowding in Narayani Sub-Regional Hospital particularly for maternity wards, with the support of the Family Health Division (FHD) and the Ministry of Health and Population (MoHP).
3. To expand the human and physical capacity of the hospital in order to accommodate the additional demands for the hospital services by the year 2020.
4. To develop a monitoring and evaluation plan to track implementation of the prioritised plans.

Deliverable: Agreed annual and periodic plans.

Expected outcomes:

- Increase bed numbers and service providers
- Increased financial resources
- Enhanced quality of care.

Time	Activities	Methodology	Responsibility
Day 1: Understanding problems and issues of MNCH/other hospital services			
10:00-10:30	Welcome		Medical Superintendent &Facilitator
	Objective of the workshop	Slide presentation	Medical Superintendent & Facilitator
	Introduction	Self-introduction	Facilitator
	Expectations & overview of the workshop and group work briefing	Brainstorming (plenary)	Facilitator
10:30- 10:50	Safer motherhood: Status and programme	Presentation in plenary	Dr Shilu
10:50-11:20	Current situation of the hospital	Presentation in plenary	Dr Medical Superintendent
11:20-12:00	Study results and recommendation of overcrowding study	Presentation in plenary	Dr Devi
12:00-12:15	MNH evidence		Dr Ganga
12:15-12:25	Group division and task briefing		Facilitator
12:25- 1:20	Hospital on-site observation visits - Good points - Areas to be improved	Observation	Group in charges (led by hospital personnel)
1:20- 1:40	Remarks & feedback		
1:40-2:30	Lunch		
2:30-4:00	Observation continuation. Preparation for presentation for observational findings	Presentation in plenary by group leaders	Group In-charges

Time	Activities	Methodology	Responsibility
	- Good points - Areas to be improved		
4:00-4: 15	Information for 2nd day		
	Day 1 closing		
Day 2: Planning exercise			
10:00-10:15	Recapitulation		
10:15- 10:45	Vision and objectives (3) of Narayani Sub-Regional Hospital	Brainstorming exercise in plenary	Facilitator
10:45-11:45	Presentation of observational findings - Good points - Areas to be improved	Presentation in plenary by group leaders	Group leaders
11:45-12:15	Consolidation, refining findings, and consensus building	Group work	Group leaders
12:15-1:15	Lunch		
1:15-1:30	Functionality linkages of different units	Presentation in Plenary	Dr Ganga
1:30- 3:30 PM	Planning exercise (areas to be improved) Action plan - within a year (2014/15) - within five years (2015-2020)	Group work	Group leaders
3:30- 3: 45	Prioritization of planned activities	Discussion in plenary	Group leaders
3:45-4:45	Presentation/discussion	Presentation in plenary	
Day 3: Resource planning and budgeting			
10:00-10:15	Recapitulation	Plenary	
10:15-11:30	Resource mapping (Aama, hospital, DDC, external development partners, etc.) and quantification	Group work	Facilitator/Devi
11:30-12:30	Budgeting	Group work	Group leaders
12:30-1:30	Lunch		
1:30- 2:30	Group presentation/debriefing	Presentation in plenary	Group leaders
Remarks from stakeholders and closing remarks			
2:30-2:45	Next steps (monitoring plan)	Small meeting	Facilitator

Annex 2: Workshop Participants

Narayani Sub-Regional Hospital (20-22 April 2014)

	Name	Designation	Organization
1	Dr Ramashanker Thakur	Medical Superintendent	NSRH
2	Dr Surendra Prasad Chaudhary	Sr Consultant, obs/gynae	NSRH
3	Dr Shobhendra Kureeshi	Surgeon	NSRH
4	Harisendra Bhagat	Paramedic level 5 (LI 6th)	NSRH
5	Dhilendra Jha	Blood bank technician	NSRH
6	Bishwonath Chaudhary	Staff nurse	NSRH
7	Bisreen O	Staff nurse 6th	NSRH
8	Manju Thapa	Acting matron	NSRH
9	Anjana Shrestha	Staff nurse	NSRH
10	Ram Naresh Kushwaha	Senior staff nurse	NSRH
11	Keshav Prasad Shah	CMA	NSRH
12	Ram Punit Yadav	Vice-accountant	NSRH
13	Ashok Kumar Shreevastav	Dietician	NSRH
14	Shatrudhan Pant	Storekeeper	NSRH
15	Dr Winner Pradhan	Anaesthesia assistant	NSRH
16	Jay Prakash Shreevastav	Medical recorder	NSRH
17	Rajan Kumar Karna	Accountant	NSRH
18	Jaymod Thakur	CMA	NSRH
19	Dr Raj Dev Kushwaha	Obs/gynae	NSRH
20	Tara Bahadur Karki	Executive officer	NSRH
21	Dr Arun Kumar Jha	PHO	NSRH
22	Shambhu Saran Pandit	President	
23	Mukesh Savawagi	District vice-president	
24	Neezamuddhin Samani	Political party representative	District political party
25	Baburam Kaushik	Dietician-in-charge	NSRH
26	Vikrant Nepal	Lab technician	NSRH
27	Arun Kumar Mahato	Computer assistant	NSRH
28	Dr Mukesh Agrawal	Gynaecologist and surgeon	NSRH
29	Udhaya Shanker Chaudhary	Admin. assistant	NSRH
30	Mukunda Kumar Poudel	Office helper	NSRH
31	Akhtar Hussein	Computer assistant	NSRH
32	Pramod Singh	In-charge O.S.	NSRH
33	Bhola Shrestha	Medical records officer	NSRH
34	Mana Karki	Administrator	NSRH

	Name	Designation	Organization
35	Dr Sony Jha Thakur	Dental surgeon	NSRH
36	Arbindra Malik	Office helper	NSRH
37	Sweeta Pokharel	Staff nurse	NSRH
38	Satynarayan Pd Mandal	Storekeeper	NSRH
39	KC Gautam	Engineer	NSRH
40	Gajendra Thakur	Local development officer (LDO)	DDC
41	Kailash Kumar Bajimay	Chief district officer (CDO)	GoN
42	Dr Atuleshor Chaurashiya	Dermatologist	NSRH
43	Dr Rabindra Thakur	Sr consultant	NSRH
44	Dr BR Khanal		NSRH
45	Binoda Kumar Mahato	Office helper	NSRH
46	Dr Ram Kishor Singh	Medical officer	NSRH
47	Awadha Kishor Jaine	AHW 6th	NSRH
48	Kalawati Rahat		NSRH
49	Amleshor Mishra	PHO	NSRH
50	Krishna Varma	Sr ANM	NSRH
51	Yashodhara Shrestha	Staff nurse	NSRH
52	Dr Ajit Kumar Sah	Medical officer	NSRH
53	Dr Bimla	Medical officer	NSRH
54	Dr Ranbir Shah	Medical officer	NSRH
55	Sarita Yadav		NSRH
56	Dr Ram Kaji Maharjan	Medical officer	NSRH
57	Gasuddin Thakural	Adviser	NSRH
58	Keshav Kant Jha	Engineer	NSRH
59	Dr PL Prasad	ENT surgeon	NSRH
60	Satynarayan Kumar	Physiotherapist	NSRH
61	Yubaraj Khadka	Reporter	Radio Birgunj
62	Devi Prasain	Consultant and facilitator	NHSSP
63	Dr Ganga Shakya	Sr CEONC consultant	NHSSP
64	Karuna Shakya	Quality assurance adviser	NHSSP

Annex 3: Checklist for Hospital Observations

Ward/department/service unit**:**

Unit in-charges will keenly observe the specific wards/areas and note needs, gaps, and issues.

Good practice is not limited to following these things.

Item	Good things	Areas of improvement
Neatness and cleanliness		
Visitor waiting areas, client flow management, security guards		
Hand washing provision; toilets for clients, service providers and visitors (privacy, water, light and drainage)		
24 hour electricity and backup		
24 hour water supply		
In each service area look for availability of human resources, drugs, equipment and supplies, furniture, toilets, water, electricity, backup electricity		
Infrastructure, rooms, quarters, training halls , visitors waiting halls		
Laundry, waste disposal container		
Waste disposal pits		
Placenta pits		
Visitor waiting areas, client flow management, security guards		
Other:		

Annex 4: Major Findings of Hospital Observations

Narayani Sub-Regional Hospital, 20-22 April 2014

Table A3.1: Departments: Operating theatre, maternity unit, paediatric unit

	Good points	Needs	Things to be improved
	Operating theatre		
1	Infection prevention maintained	Autoclave machine	1. Should not be posters, pamphlets in OT.
2	Human resources: sterilisation is improving	OT light	2. Bad condition of waste disposal receptacles
3	Good recording & reporting	Caesarean section set	3. Congested central supply room
4	Good cleanliness	Hysterectomy set	
5	Good sterilisation	Vaginal hysterectomy set	
6		Baby warmer	
7		Electric suction machine	
8		OT table (10 years old)/ortho table	
9		Laparotomy set	
10		Need separate water tank	
11		Electricity, new wiring	
12		Voltage guard and noticeboard	
13		Stainless steel instrument trolley	
14		Oxygen supply pipe wiring	
15		Human resources: Staff nurse & sweeper	
16		Anaesthesia machine	
17		Telephone (there is no telephone)	
18		Big washing machine	
19		Furniture	
20		Linen	
	Paediatric ward		
1	Neat and clean	Store room	
2	Good maintenance	Human resources	
3	Well equipped	Baby mattress	
4		Lack of place for warmer and phototherapy (6) NICU?	
5		False roofing for neonates	
	Maternity ward		
1	HR — doing their best with limited equipment	Steel rack	Not clean labour room & instrument cleaning room
2	Good recording & reporting	Steel rack, cupboard	Not clean delivery bed
3	Good infection prevention	Door repairs for labour room	

	Good points	Needs	Things to be improved
4	Neat and clean	Window nets need replacing	
5		Cement basin with toilets	
6		Doctor and nurses room needs renovating and properly equipping	
7		Visitor flow needs to be regulated	
8		Quality of care needs improving	
9		Building for maternity unit needs to be renovated (labour room wards and cabins)	
10		Address overcrowding of clients and visitors	
11		More nurses needed to maintain quality care	
12		Hot roof of ICU — patients complain. Need AC	
13		Lack of bio technicians	
14		Need emergency box with trolley	
15		Need wall oxygen suction	
16		Need lockers	
17		Need separate room for staff changing	
18		Need guards for regulating visitors	

Table A3.2: Diagnostic support services, administration and accounts sections

	Good points	Things to be improved
	Pathology	
1	Full availability of material for cleanliness	Need equipment including biochemistry, haematology analyser, electrolyte analyser, emonoflorocency
2	24 hours electricity	Need proper waste disposal
3	Availability of water supplies	Need more security guards
4	Availability of facilities like hand washing & toilets	Need visitors waiting room
5	Laundry system available	Need room for group training and session hall
	Radiology	
1	Full availability of materials for cleanliness	Need equipment like USG, digital x-ray, x-ray
2	24 hour electricity.	Need proper management of waiting hall
3	Availability of water supplies	Need USG, 500 mm x-ray, CT scan, MRI and digital x-ray cassette equipment.
4	Availability of facilities like hand washing and toilets.	Need to increase no. of technical staff, helpers and cleaners in ward
5	Laundry system is available	Need infrastructure
6		Need proper waste disposal
7		Need more security guards
8		Need visitors' waiting room

Table A3.3: Medical and surgical group

	Good things	Things to be improved
	Medical	
1	Full availability of material for cleanliness	Need equipment like ECG machine, pulse oximeter, emergency cart and medicine
2	Availability of 24 hour electricity.	Need proper way of waste disposal
3	Availability of water supplies.	Need more security guard
4	Available hand washing and toilet facilities.	Need visitor waiting room
5	Laundry system is available	Need some room for group training and session hall.
	Surgical	
1	Full availability of materials for cleanliness	Need proper management of post-operative ward
2	24 hour electricity	Need equipment like trolley, orthopaedic beds
3	Availability of water supplies	Need to increase no. of technical staff, helpers and cleaners in ward
4	Availability of facilities like hand washing and toilets	Need surgical intensive care units e.g. surgical ICU
5	Laundry system is available.	Need proper waste disposal
6	Some equipment like monitor, pulse oximeter	Need more security guards
7		Need visitors' waiting room
8		Need to increase staff facilities: quarters, lockers, canteen
	Emergency unit	
1	Full availability of materials for cleanliness	Need to increase no. of technical staff, helper and cleaner in ward
2	24 hour electricity	Need specific protocols for emergency treatment
3	Availability of water supplies	Need more supplies and proper maintenance of equipment
4	Availability of facilities like hand washing and toilets	Need intensive care units e.g. surgical ICU, ICU for further management
5	Laundry system is available	Need to increase number of care providers (1 doctor, 1 paramedic, 1 helper)
6	Visitors waiting room available	Need proper waste disposal
7		Need more security guards

Table A3.4: Medical records admin. and accounts

	Good things	Things to be improved
1	Full availability of materials for cleanliness	Need to increase staff facilities
2	24 hour electricity	Need proper management of waiting hall
3	Availability of water supplies	Need to increase no. of technical staffs& helpers
4	Availability of facilities like hand washing and toilets	Need internet connection fax, telephone
5		Need computerized billing system information password & username
6		Need good furniture & furnishing

Table A3.5: Partnerships, coordination, resource management

	Good things	Things to be done to bring about improvements
1	RHCC is functioning	Partnership with local VDCs, DDC (reproductive health, resources, small incentives environment)
2		Coordination
3		Activate HFOMCs
4		Coordination between hospital and DPHO should be enhanced in referrals, recording and reporting
5		Participation of private and public hospital in review of Aama Programme
6		Expansion of Aama Programme in medical college
7		District RHCC meeting should be strengthened
8		Referrals
9		Pre-communication between birthing centres and referral hospital and immediate response by referral hospitals
10		Feedback mechanism
11		Networking of ambulances for quick availability
12		Use of referral slips by birthing centres

Table A3.6: Infrastructure development

	Good things	Things to be done to bring about improvements
1	Managing the limited space that is available for maternity, NICU, etc. by partitioning spaces.	Proper waste disposal
2		Quarters for peons and sweepers
3		Renovation of old doctors quarters
4		Separate store rooms
5		600 bed hospital built as per master plan
6		Renovation of maternity ward
7		Human resources for logistics management
8		Supply work done with limited human resources
9		Crowded maternity ward
10		Infrastructure needs
11		Should be expanded to 600 bed hospital
12		Organized store (rooms 3-4)
13		Water supply in store
14		Internet access
15		Helper
16		Transportation support (trolley, vehicle)
17		Additional storekeepers
18		Repair and maintenance, auction of no longer needed equipment

Annex 5: Visioning and Objective Setting Exercise

Narayani Sub-Regional Hospital, 20-22 April 2014

The five workshop groups' vision statements for Narayani Sub-Regional Hospital

Group 1 (medical, surgical): A referral hospital with super specialities — quality care, client and staff-friendly hospital, affordable and accessible with social support.	**Group 3:** A quality service hospital (infrastructure, human resources, latest equipment, sufficient beds), with multi specialities (emergency block, maternity, OT, medicine, surgery, skin, dental, etc.).	**Group 5 (doctors)** A hospital with postgraduate courses equipped faculty to address non-communicable diseases.
Group 2: A hospital with well-equipped different units, adequate staff, well equipped, affordable facility, training and further education, good infrastructure and maintenance	**Group 4 (infrastructure)** - Sufficient infrastructure - Well equipped - Service-oriented - Affordable.	

Planning Workshop 3:

Bheri Zonal Hospital, Nepalgunj

Report on Planning Workshop 3:

Bheri Zonal Hospital, Nepalgunj

28-30 April, 2014

Family Health Division

and

Nepal Health Sector Support Programme

September 2014

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Consultant

CONTENTS OF BHERI HOSPITAL REPORT

ACRONYMS

AA	anaesthesiologist assistant
AC	air conditioner
ANC	antenatal care
ANM	auxiliary nurse-midwife
ASBA	advanced skilled birth attendant
AWPB	annual workplan and budget
BC	birthing centre
BCC	behaviour change communication
BS	Bikram Sambat (Nepali dates)
BSc	Bachelor of Science
BTS	Blood Transfusion Service
BZH	Bheri Zonal Hospital
CAC	comprehensive abortion care
CCTV	closed-circuit television
CDO	chief district officer
CEOC	comprehensive emergency obstetric care
CEONC	comprehensive emergency obstetric and neonatal care
CHD	Child Health Division
CPM	continuous passive motion
CSSD	central sterile supply department
CT	computed tomography
DDC	district development committee
dept	department
DFID	Department for International Development (UK Aid)
DHO	district health officer
DPHO	district public health office
DUDBC	Department of Urban Development and Building Construction
ECG	electrocardiogram
EDCD	Epidemiology and Disease Control Division
ENT	ear nose and throat
FESS	functional endoscopic sinus surgery
FHD	Family Health Division
FNCCI	Federation of Nepali Chambers of Commerce
GoN	Government of Nepal
HA	health assistant
HDB	hospital development board
HFOMC	health facility management and operation committee
HMIS	Health Management Information System
HoD	head of department
ICU	intensive care unit

IEC	information, education and communication
IFPSC	Institutionalized Family Planning Service Centre
IUCD	intrauterine contraceptive device
KTM	Kathmandu
KVA	kilovolt-ampere
LDO	local development officer
MBBS	Bachelor of Medicine, Bachelor of Surgery
MCH	maternal and child health
MDGP	Doctor of Medicine in General Practice
MeSu	medical superintendent
MICU	medical intensive care unit
MNCH	maternal, newborn and child health
MoHP	Ministry of Health and Population
MP	Member of Parliament
MPDR	maternal and perinatal death review
MR	medical recorder
NA	not available
NCASC	National Centre for AIDS and STD Control
NGO	non-government organisation
NHSSP	Nepal Health Sector Support Programme
NICU	neonatal intensive care unit
NIPP	neonatal individualized predictive pathway
no.	number
NPR	Nepalese rupee
NRCS	Nepal Red Cross Society
NSRH	Narayani Sub-Regional Hospital
OP	outpatient
OT	operating theatre
P1, P2, P3	priority 1 (highest priority) to priority 3 (lowest priority)
PAC	post-abortion care
PHN	public health nurse
PIC	paediatric intensive care
PICU	paediatric intensive care unit
PSC	Public Service Commission (Lok Sewa)
PUVA	psoralen (P) and ultraviolet A (UVA) therapy
R&M	repair and maintenance
RH	reproductive health
RHCC	reproductive health coordination committee
USG	ultrasonogram
VDC	village development committee
WHO	World Health Organisation

1. INTRODUCTION

1.1 Workshop Rationale

Referral hospitals have frequently found it difficult to respond to the increased demand for institutional births. A recent study in six referral hospitals (FHD and NHSSP 2013)[5] recommended a number of strategies to overcome the overcrowding of maternity services. The carrying out of planning exercises was among these recommendations to guide how to respond effectively to increased demand.

Bheri Zonal Hospital (BZH) was identified as one of the referral hospitals with an overcrowded maternity ward. As a result, quality of care is compromised and there is a shortage of nurses, doctors and hospital beds offering birth-related care. The hospital is a semi-autonomous entity managed by a hospital development board (HDB) within which senior hospital executives hold overall responsibility for service availability and quality of care.

The challenge of responding to increased demand for institutional deliveries across the country lies beyond the reach of individual facilities and district authorities and the leadership of the Ministry of Health and Population (MoHP) is required to improve the wider referral network by collectively agreeing mitigating strategies and securing the resources needed to implement suitable programmes. Nonetheless, at the facility level, integrated planning involving all departments is essential if service implementation inefficiencies are to be avoided.

1.2 The Workshop

A planning workshop was held at BZH from 28-30th April 2014 to produce an integrated plan for the hospital to address overcrowding and service provision in general and in the maternity ward in particular. This integrated approach was taken as it is not possible to plan for maternity care alone as maternity care needs, such as good quality operation theatre, radiology, administration and pathology services, are needed by all the medical departments of a hospital.

The agenda and schedule of the workshop are given in Annex 1. The names of the hospital administrators, doctors, and representatives of local government, political parties and other stakeholders who attended are listed at Annex 4.

The purpose of the planning workshop was to prepare an action plan to address the challenges of increased demand for institutional deliveries.

The workshop's objectives were as follows:

[5] FHD and NHSSP (2013). Responding to Increased Demand for Institutional Childbirths at Referral Hospitals in Nepal: Situational Analysis and Emerging Options. Kathmandu: Family Health Division and Nepal Health Sector Support Programme.

- To understand the problems, issues and challenges of providing maternal, neonatal and child health (MNCH) services in Bheri Zonal Hospital.
- To develop costed and prioritised plans and activities to reduce overcrowding in Bheri Zonal Hospital particularly for maternity wards, with the support of the Family Health Division (FHD) and MoHP.
- To expand the human and physical capacity of the hospital in order to accommodate the additional demands for the hospital services by the year 2020.
- To develop a monitoring and evaluation plan to track implementation of the prioritised activities.

The anticipated long term outcomes are to:

- increase the number of institutional deliveries;
- increase bed numbers;
- increase the number of service providers;
- increase available financial resources; and
- enhance the quality of care.

1.3 Approach and Methods

The workshop was run in a participatory and inclusive way, with participants ranging from hospital cleaners to the chairperson of the hospital development board (HDB). The workshop focused primarily on maternity and related care but took a holistic approach by covering all units of the hospital. It employed a problem identification and solving approach.

The workshop was run through presentations, discussions in plenaries, observations of the hospital infrastructure and service provision, group discussions and presentations, brainstorming exercises, and resource mapping exercises.

2. THE BUSINESS OF THE WORKSHOP

The workshop had the following three main parts:

- understanding problems, issues and concerns;
- planning for improvements; and
- mapping actual and potential resources for making improvements.

2.1 Understanding the Problems, Issues and Concerns

The following activities took place to understand the problems and challenges faced by the hospital for providing services:

- *Sharing evidence and national policies:* The facilitator presented findings and recommendations from the FHD and NHSSP (2013) study. Dr Ganga Shakya presented Nepal's safe motherhood status and FHD's programme while Dr Indra Prajapati presented evidence on maternal mortality.
- *Sharing felt needs:* The head of the hospital's maternity department, Dr Kalpana Thapa, presented the current situation of childbirths in the hospital and challenges faced. Dr Pitamber Subedi, the medical superintendent (MeSu) congratulated Dr Thapa on capturing the felt needs of hospital staff and for identifying several underlying causes of overcrowding.
- *Observing hospital departments and units:* Three thematic groups (maternity, support services and infrastructure development) were formed to observe the client load, human resources, and equipment and infrastructure in all departments. A checklist was used to record findings (Annex 3).
- *Good points* and *things to be improved* were noted down by the respective group members during in the course of field visits and they were later presented in the plenary session (see Annex 4 for findings of these observation visits).

Table 1: Composition of the three workshop groups

Group	Focus	Participants
1	*Infrastructure development* — Waste disposal, toilets, utilities, water, electricity, hand washing, sub stores, placenta pits, doctors and nurses quarters and other infrastructure development	Engineers, repair and maintenance technicians, accountants, representatives of political parties, local development officer, members of hospital development board (HDB)
2	*Maternity* — ANC, labour room, PNC, gynaecology, operation theatre, post-operative, laboratory, BTS, pharmacy, medical records, ambulance, admin, accounts	Doctors and nurses assigned to labour room, operating theatre (OT), post-operative, ANC/PNC, neonatal and paediatric ward, physicians, NICU, ICU, MICU, anaesthetist or AA, lab technicians, pharmacists, accountants, medical recorders, blood bank technicians
3	*Support services* — Partnership, coordination, referral, resource management and transport management	CDO, DDC representative, DHO, public health nurse (PHN), INGOs, NGOs, journalists, private providers

2.2 Planning Exercise

The following planning exercises were then carried out:[6]

- *Defining activities:* Based on the observation visits, other evidence, and expressed felt needs of hospital staff, improvement activities (mostly in terms of infrastructure improvements, quality of care, additional human resources, and more equipment) were identified to help meet the objectives. These improvement activities were further discussed in groups with reference to their practicality, affordability, technicality and feasibility. After completing the planning exercise, each group presented an action plan for its focal areas in plenary, with relevant comments and suggestions then incorporated.
- *Identifying priority activities*: All participants assigned priorities (P1, P2, P3) to the various activities based on their cost, urgency for improving service delivery, and contribution to saving lives. Activities requiring large resource inputs, such as the expansion of services and infrastructure (e.g. adding 35 beds), were generally given a low priority (P3) being seen as financially unrealistic.

2.3 Mapping Resources

Potential resources for funding hospital improvements were explored in consultation with key stakeholders (heads of departments and other district level stakeholders). This resource mapping exercise covered formal and informal sources of funding, including institutional resources and donations from companies and individuals. The following stakeholders committed to supporting or mobilising support for the hospital in various ways, but did not commit to specific amounts:

- The chairperson of the local Federation of Nepalese Chambers of Commerce and Industry (FNCCI) said that business people would donate to hospital development.
- Politicians committed to mobilising local resources and soliciting MoHP for more funds.
- An individual donor showed willingness to contribute to the hospital.

At the end of the workshop, a monitoring plan was developed that assigns responsibilities and defined indicators and the means of verification.

2.4 Next Steps

The medical superintendent of the hospital closed the workshop by extending a vote of thanks and expressing his expectation of cooperation from MoHP, the Department of Health Services (DoHS), the Family Health Division (FHD), FNCCI, I/NGOs and civil society to help implement the plan. He committed to coordinating the inputs of individual donors. Finally the responsibility for organising a monitoring meeting at three month intervals was assigned to the hospital's medical superintendent.

Note that the means of monitoring the implementation of the plans are summarised in Section 3.4.

2.5 Limitations of the workshop

The workshop faced the following limitations:

[6] Note that a visioning exercise was not carried out at this hospital.

- Some workshop participants left the meeting for short periods in order to provide service delivery.
- Remarks from the political parties took longer than expected which made it difficult to adjust the time for the remaining scheduled activities.
- In the absence of a price list for equipment and construction materials, the full costing exercise could not be completed and estimates were used in some cases.

3. INTEGRATED PLAN OF ACTION

3.1 Objectives of the Plan

The workshop agreed on the following objectives for the hospital:

- To ensure the availability of competent and committed human resources
- To expand services including specialties
- To enhance the quality of care
- To develop the hospital as an academic institution

Tables 2 and 3 list the output and input indicators that were identified to achieve the objectives of the plan.

Table 2: Output indicators to achieve objectives (based on exponential growth)

	Output	Output indicators
1	Expand services	1. Increased no. of deliveries from 4,285 in 2012/13 to 8,000 in 2019/20. 2. Increased in-patient discharges from 1,273 in 2012/13 to 2,000 in 2019/20. 3. Increased no. outpatients from 7,380 in 2012/13 to 14,000 in 2019/20.
2	Make available more human resources	4. Maintain 4 doctors and 20 nurses for every 3,500 deliveries (as per WHO standard).
3	Enhance quality of care	5. Maintain bed occupancy rate of 75-80% in the maternity unit (with no floor beds). 6. Reduce stillbirths from 4.2% of all births in 2013/14 to <1% in 2019/20 (quality). (source of current figure = Dr Kalpana) 7. 80% of clients are satisfied with services provided.
4	Build an academic institution	8. The hospital becomes an accredited centre for providing practical tuition to MBBS, MDGP, BSc nursing and other courses by 2020.

Table 3: Input indicators to achieve objectives

	Input indicators
1	Increase maternity bed numbers from 35 in 2013 to 45 in 2014/15. Further increase to 70 (including birthing unit) by 2019/20.
2	Increase from 3 doctors in 2013/14 to 4 in 2014/15, and from 10 nurses in 2013/2014 to 16 in 2014/2015 in maternity. Further increase to 10 doctors and 32 nurses by 2019/20 in maternity.

3.2 The Action Plans

The consolidated human resource needs are given in Table 4 as identified by workshop participants across the departments.

Table 4: Existing and additional human resources needed for Bheri Zonal Hospital (2014)

Dept	Personnel	Current	Additional needed	Total
Maternity				
	Obstetricians	3	3	6
	Medical Officers	0	4	4
	Nurses	10	22	32
	Helper	6	6	12
	Guard	0	3	3
Operating theatre				
	Anaesthetic assistant	3	1	4
	Scrub nurses	5	2	7
Intermediate neonatal intensive care unit (NICU)				
	Nurses	0	5	5
	Helpers	0	3	3
Laboratory				
	Lab Technician	3	2	5

Table 5: Infrastructure development requirements for Bheri Zonal Hospital (2014)

	Activities	Venue	Additional no. needed	Tentative budget (NPR)	Source of budget	Lead role	Supportive role	Monitoring indicators	Timeframe	Priority
1	Renovate new maternity ward to accommodate more beds	Maternity	10 beds	600,000	MoHP/FHD	MeSu	HoD Maternity	Used ward	2071/72	P1
2	Add 2nd floor to maternity building	Maternity	35 beds	40,000,000	MoHP/FHD	MeSu	HoD Maternity	Used ward	5 years	P1
3	Add visitor toilets with septic tank	Maternity	5 toilets	1,200,000	MoHP/FHD	MeSu	HoD Maternity	Used ward	2071/72	P1
4	Biogas plant construction. Alternative Energy Promotion Center (AEPC) to provide technical support and finance for bio-waste management			90,000	MoHP/FHD	MeSu	HoD Maternity	Used ward	2071/72	P2
5	Install large bore water supply (150 $m^{3,}$ 8" bore)	Hospital	1	1,500,000	MoHP/FHD	MeSu	HoD Maternity	Used ward	2071/72	P2
6	PPR pipe and tank	Hospital	1	6,000,000	MoHP/FHD	MeSu	HoD Maternity	Used ward	5 years	P2
7	Construction of multi-storey doctors quarters	Hospital	30	50,000,000	MoHP/FHD	MeSu	HoD Maternity	Used ward	5 years	P2
8	Construction of multi-storey nurses and diagnostic support services duty quarters	Hospital	8+5	50,000,000	MoHP/FHD	MeSu	HoD Maternity	Used ward	5 years	P2
9	Development of master plan for referral hospital	Hospital	350 beds		MoHP/FHD	MeSu	HoD Maternity	Used ward	5 years	P2
10	Formation of resource mobilization committee	FNCCI	1	-	-	MeSu	FNCCI			

Table 6: Maternity, Paediatrics, NICU and Operating Theatre Requirements for Bheri Zonal Hospital (2014)

	Activities	Venue	Additional no. needed	Tentative budget (NPR)	Source of budget	Lead role	Supportive role	Monitoring indicator	Timeframe	Priority*
Infrastructure/equipment/staffing										
1	Additional beds for maternity	Maternity	25	25,000,000	MoHP	MeSu	FNCCI/GIZ	Building used	5 years	P2
2	Separate gynaecology ward, separate active and latent phases and additional waiting beds	Maternity	10 beds	10,000,000	MoHP	MeSu	FNCCI/GIZ	Building used	5 years	P2
3	Delivery tables	Maternity	2	240,000	MoHP	MeSu	Maternity in charge	Table used	2071/71	P1
4	Availability of ANC card, register and used well in OPD	Maternity	1000	30,000	DPHO	DPHO	MCH in charge	Card used	2071/72	P1
5	Washing machine	Maternity	1	50,000	HDB		MCH in charge		2071/72	P1
6	Spotlight & perinatal light	Maternity	3 + 4	14,000	BZH	MeSu	Maternity in charge	Light used	2071/71	P1
7	Infusion pump for NICU	Maternity	5	300,000	MoHP	MeSu	UNICEF/ CHD	Pump Used	2071/72	P1
8	Air conditioner in labour and PNC wards	Maternity	6	300,000	MoHP	MeSu	Maternity in charge	Installed & working	2071/72	P1
9	Distribution of incentives to mothers from maternity ward	Account/Maternity	1	150,000	BZH	MeSu	Accountant	Money to mother within 10 minutes	2071/72	P1
10	Doctors (3 gynae doctors, 5 medical officers, 10 nurses)	Maternity		3,500,000	Aama/ CEONC	MeSu			5 years	P1
11	Cleaners and nursing staff to be recruited	NICU	3 + 5	1,000,000	CHD/MD	MeSu	Maternity in-charge	Recruited	5 years	P1

	Activities	Venue	Additional no. needed	Tentative budget (NPR)	Source of budget	Lead role	Supportive role	Monitoring indicator	Timeframe	Priority*
12	Oxygen concentrator	NICU	2	300,000	FHD	MeSu	NICU in charge	Quality of care	2071/72	P1
13	Inverter	OT	1	50,000	FHD	MeSu	OT in charge		2071/72	P1
14	Cautery machine	OT	2	200,000	FHD	MeSu	OT in charge	Installed & in use	2071/72	P1
15	Solid waste management (model ward)	Maternity	1	150,000	MD	MeSu	Maternity in charge	Installed & in use	2071/72	P1
16	New instrument trolley	OT	6	100,000	FHD	MeSu	OT in charge	In use	2071/72	P1
17	Op theatre equipment (other various)	OT	6	100,000	FHD	MeSu	OT in charge	In use	2071/72	P1
18	Anaesthetic assistant (existing 3)	OT	1	300,000	FHD	MeSu	OT in charge	In use	2071/72	P1
19	Scrub nurses (existing 5)	OT	2	500,000	FHD	MeSu	OT in charge	In use	2071/72	P1
20	Washing machine	OT	1	30,000	FHD	MeSu	OT in charge	In use	2071/72	P1
21	Fumigation machine	OT	1	40,000	FHD	MeSu	OT in charge	In use	2071/72	P1
22	Portable sterilization machine	OT	1	22,000	FHD	MeSu	OT in charge	In use	2071/72	P1
23	Incentive (leave compensation) to OT staff	OT	6	400,000	HDB	MeSu	OT in charge	In use	2071/72	P3
24	Bedside monitors	OT	3	150,000			OT in charge	In use		
Laboratory services										
1	Workbenches	Lab	1	25,000	Lab		NCASC			P1
2	Lab technicians	Lab	2	350,000	HDB	MeSu	HDB	Working as per ToRs	2071/72	P1
3	Culture counter	Lab	1	350,000	HDB/CL	MeSu	HDB		2071/72	P1
4	Microscope	Lab	1	50,000	HDB/CL	MeSu	NTC		2071/72	P1
5	Needle destroyer	Lab	1	20,000	HDB/CL	MeSu	DHO		2071/72	P1

	Activities	Venue	Additional no. needed	Tentative budget (NPR)	Source of budget	Lead role	Supportive role	Monitoring indicator	Timeframe	Priority*
Institutionalized Family Planning Service Centre (IFPSC)										
1	OT-Implant-IUCD building	IFPSC	1	5,000,000	FHD	MS		In use	5 years	P3
2	Room for OT-Implant-IUCD	IFPSC	2							P3
3	Management training (6 months)	Medical records	2	According to WHO standard	GoN, UN, WHO	GoN	UN/WHO	Reporting status change	2071/72	P1
4	Racks for records	Medical records	4			MR	Admin.	In use	2071/72	P1
5	Room for records (renovated and expanded) — hall could be used	Medical records	1	50,000		MR	Admin.	In use	2071/72	P1
6	Laptop computers and printers with faxes	Medical records	2	100,000	Mgt Division	MR	Mgt Division	In use	2071/72	P1
7	Software		1	300,000	Mgt (HMIS)	MR	Admin.	In use	2071/72	P1
Cleaning and security										
1	Guard at entrance		3	1,200,000		Admin	Admin.	In use	2071/72	P1
2	Laundry washing place		1	100,000		Housekeeping	Housekeeping			P1
3	Trolley for carrying waste		5	30,000		Admin	Admin.	In use	2071/72	P1
4	Overtime allowance incentive to workers (Ka sa) (Desirable)	Medical records	20	500,000				In use	2071/72	P3
5	New ambulance		1	1,200,000		Admin	MeSu	In use	2071/72	P1
6	Visitors rooms for overnight stays		1	1,500,000		Admin			5 years	P3
7	Add office assistant (contract)		5	500,000		Admin.			2071/71	P3
8	Vehicle parking		1	100,000		Admin.				P2
9	Internal road in hospital						Admin.	Used	2071/72	P1
10	Hand pump (tube well)		1	30,000						P1
11	Establishment of help desk									P1

Table 7: Partnership, coordination and collaboration requirements at Bheri Zonal Hospital (2014)

	Activities	Venue	No./ frequency	Tentative budget (NPR)	Budget source	Lead role	Supportive role	Monitoring indicator	Time frame	Priority
1	MPDR reporting done on time	BZH	After every death			HoD in charge	MeSu	No. maternal deaths reported	Within this month	P1
2	MPDR committee meetings held and review carried out with private and public participation	BZH	Every month			DPHO	Medical college	No. meetings held	This FY	P1
3	Stakeholder meeting conducted at least every 3 months	BZH	Every 3 months	15,000	FHD	MeSu/ DPHO	HoD	No. meetings held	This FY	P1
4	Social audit process initiated	BZH	Once a year	100,000	FHD	MeSu	FHD	Social auditing carried out	This FY	P1
5	BZH will participate in every RHCC meeting and organize one at least once a year	DPHO, BZH	Every three months	5,000	BZH	MeSu	FHD	No. & participation in RHCC meetings	This FY	P1
6	Appropriate recording and reporting	BZH	Monthly	20,000	BZH	MeSu	MeSu	No. reports sent	This FY	P1
7	Conduct blood donation programme every 6 months	BZH	Every 6 months	10,000	BZH	DPHO/ Red Cross	Partners	No. campaigns	This FY	P1
8	Search and request support from more agencies	BZH		10,000		DPHO/ Red Cross		No. of partners	Within 1 year	P1
9	ANC clinic conducted daily at ICTC	BZH	Every day	300,000	FHD	ICTC	MeSu	No. days ANC clinic per month		P1
10	ANC card and register updated and in use	BZH	Every day	0		HoD	MeSu	No. mothers with ANC card after ANC visits	This year	P1
11	IEC and BCC activities	BZH	Daily & weekly	100,000	DPHO/ NHEICC	Admin/ HoD	MeSu	No. episodes broadcast	Within next FY	P1
12	Intercom communication within ward	BZH	Daily	300,000	FHD	MeSu		New intercom in use	Within next year	P1

	Activities	Venue	No./ frequency	Tentative budget (NPR)	Budget source	Lead role	Supportive role	Monitoring indicator	Time frame	Priority
13	Help and support desk established at BZH (social services unit)	BZH	Daily	150,000	BZH	MeSu	HDB		Immediate	P1
14	Joint monitoring	Birthing centres	Daily	150,000	BZH	MeSu	HDB	80% of joint monitoring recommendations implemented	Immediate	P1
15	Use of referral slips	Birthing centres	Daily	5,000	DPHO	MeSu	HDB	Slips in use	Immediate	P1
16	Cross invitations to programmes	BZH	As needed	-	BZH/DPHO	MeSu	HDB	Attendance at others' programmes	Immediate	P1
17	Coordination of ambulance drivers and maternity network									

3.3 Resource Mapping

Table 8 shows the results of the resource mapping exercise.

Table 8: Resource mapping at Bheri Zonal Hospital (2014)

	Institution/source	Expected contribution (NPR)	Purpose
1	FHD	5,000,000	Improve infrastructure of maternity ward and quality of care
2	Management Division	3,500,000	Human resources, HMIS (medical record), infrastructure, waste management, QoC
3	CHD/Unicef	2,000,000	NICU level 2 strengthening
4	Plan International	NA	
5	Save the Children	NA	Nutrition rehabilitation, human resources, equipment
6	Curative division/MOHP	NA	
7	FNCCI	NA	Infrastructure
8	Parliamentarian fund	NA	
9	Municipality (PPP)	NA	Solid waste management, ambulance
10	DDC	NA	Equipment, infrastructure
11	National Health Training Centre	NA	Training, medical record, NICU, AA, ASBA, SBA paediatric nursing
12	GiZ/KfW	NA	Equipment maintenance
13	NTC	NA	Equipment
14	Medical college/nursing college	NA	Equipment
15	National Public Health Laboratory (NPHL)	NA	Equipment, training, reagents
16	Social donor/philanthropy	NA	

3.4 The Monitoring of Implementation

The lead roles for the implementation of the action plans are given in Table 9. Separate monitoring indicators are given for each activity in Tables 5 to 7. The output and input indicators for overall hospital improvements in the next few years are given in Tables 2 and 3.

Table 9: Monitoring plan at Bheri Zonal Hospital (2013/14 – 2014/15)

	Activities	Reporting frequency to HDB	Lead role	Phone	Supportive role	Monitoring indicators	Means of verification
1	Infrastructure development work	Quarterly	MeSu	9858 020419 (Dr Subedi)	FNCCI, DUDBC, municipality, DDC account, BZH	Budget allocated/renovation completed within a year (2071/072)	Progress report
2	Maternity, OT, NICU, Paediatric	Quarterly	HoD Maternity, HoD Paediatrics	9848 071931 (Dr Kalpana)	Surgeon, OT in charge, anaesthetist	Minimum 80% equipment installed and in use	Progress report
3	Partnership coordination activities	Quarterly	MeSu		DPHO/Red Cross/ Plan/GiZ	Minimum 3 meetings held, documented and actions implemented	Progress report
4	Resource mobilisation work	Quarterly	MeSu FNCCI chair		DDC, VDC, Municipality, Plan, GiZ, KfW, SAVE, UNICEF	Master plan for BZH developed	BZH master plan

Annex 1: Agenda for Planning Workshop

Bheri Zonal Hospital, 28–30 April 2014

Objectives of the workshop:

1. To understand the problems, issues and challenges of providing maternal, neonatal and child health (MNCH) services.
2. To develop costed and prioritised plans and activities to reduce overcrowding in Bheri Zonal Hospital particularly for maternity wards, with the support of the Family Health Division (FHD) and the Ministry of Health and Population (MoHP).
3. To expand the human and physical capacity of the hospital in order to accommodate the additional demands for the hospital services including institutional childbirth by 2020.
4. To develop a monitoring and evaluation plan to track implementation of the prioritised plans.

Deliverable: Agreed annual and periodic plans

Expected outcome of workshop:

- Increased number of institutional deliveries
- Increased number of beds and service providers
- Increased financial resources
- Enhanced quality of care

Time	Activities	Methodology	Responsibility
Day 1: Understanding problems and issues of MNCH/other hospital services			
10:00 - 10:30	Welcome		MeSu/Facilitator
	Objective of the workshop	Slide presentation	MeSu/Facilitator
	Introduction	Self-introduction	Facilitator
	Expectations/overview of the workshop/group work briefing	Brain storming (plenary)	Facilitator
10:30 - 10:50	SM status and programme	Presentation in plenary	Dr Shilu
10:50 - 11:20	Current situation of the hospital	Presentation in plenary	MeSu
11:20 - 12:00	Study results and recommendation of the overcrowding study	Presentation in Plenary	Dr Devi
12:00 - 12:15	MNH evidence		Dr Ganga
12:15 - 12:25	Group division/task briefing		Facilitator
12:25 - 1:20	Hospital on site observation visits/good points/areas to be improved	Observation	Group-in-charges (led by hospital personnel)
1:20 - 1:40	Remarks/feedback		
1:40 - 2:30	Lunch		
Time	**Activities**	**Methodology**	**Responsibility**
2:30 - 4:00	Continuation of on-site observation, preparation for presentation for observational findings — *g*ood points and areas to be improved	Presentation in plenary by group leaders	Group in charges
4:00 - 4:15	Information for 2nd day		

Day 2: Planning exercise			
10:00 - 10:15	Recapitulation		
10:15 - 11:45	Observational findings/good points /areas to be improved	Presentation in plenary by group leaders	Group leaders
11:45 - 12:15	Consolidation/findings refined/consensus building	Group work	Group leaders
12:15 - 1:15	Lunch		
1:15 - 3:30	Planning exercise (areas to be improved) **Action plan** - within a year (2014/15) - within five years (2015-2020)	Group work	Group leaders
3:30 - 3:45	Prioritisation of planned activities	Discussion in plenary	Group leaders
3:45 - 4:45	Presentation/discussion	Presentation in plenary	
Day 3: Resource planning and budgeting			
10:00 - 10:15	Recapitulation	Plenary	
10:15 - 11:30	Resource mapping (Aama/hospital/DDC/EDPs etc)/quantification	Group work	Facilitator/Devi
11:30 - 12:30	Budgeting (ball park)	Group work	Group leaders
12:30 - 1:30	Lunch		
1:30 - 2:30	Group Presentations/ debriefing	Presentation in plenary	Group leaders
2:30 - 2:45	Next steps (monitoring plan)	Small meeting	Facilitator

Annex 2: Workshop Participants

Bheri Zonal Hospital (28–30 April 2014)

	Name	Designation	Organisation
1	Dr Pitamber Subedi	Medical Superintendent	BZH
2	Dr Kalpana Thapa	Obs/Gynae	BZH
3	Dr Urmila Parajuli	Obs/Gynae	BZH
4	Dr Arun K Koirala	In-charge nutrition	BZH
5	Dr Rosy Yadav	Medical officer	BZH
6	Dr Kumar Shah	Obs/Gynae	BZH
7	Dr Santosh Kumar Thakur	Medical officer	BZH
8	Dr SS Yadave	Medical officer	BZH
9	Dr Sarab Dhakal	Medical officer	BZH
10	Mr Gobinda Paudel	Medical Technician	BZH
11	Mansara Thapa	Assistant Matron	BZH
12	Sabtri Shrestha	Senior Staff Nurse	BZH
13	Parvati Sharma	Senior Staff Nurse	BZH
14	Rakesh Prasad Shreevastav		BZH
15	Suvechhaya Manandhar	Coordinator	BZH
16	Vishnu Sahams	Accountant	BZH
17	Arjun Oli	Reporter	BZH
18	Madav Adhikari	Reporter	BZH
19	Krishna Shrestha	President	BZH
20	Basanta Gaire	FPS	BZH
21	Bishnu Shrestha	PHN	BZH
22	Sanju Rijal	HNI	BZH
23	Bharat Sharma	Senior Staff Nurse	BZH
24	Beena Ghale	Senior Staff Nurse	BZH
25	Hari Kala KC	Senior Staff Nurse	BZH
26	Shobha Paudel	Housekeeping officer	BZH
27	Biala Acharya	Admin assistant	BZH
28	Mohan Singh Thagunna	Medical Recorder	BZH
29	Bhim Kala Lamichhane	Principal	Bheri Technical
30	Arjun Gautam	Medical Recorder	BZH
31	Datta P Acharya	Chairperson CPN- UML	Banke
32	Khim Lal Pandey	Head clerk	BZH
33	Upendra Regmi	Technical officer	BZH
34	Laxmi KC	Senior staff nurse	BZH
35	Jayananda Joshi	Admin. assistant	BZH
36	Ram P Sharma		BZH

	Name	Designation	Organisation
37	Ram Bahadur Chadara		BZH
38	Bhupendra Sapkota	Chief ENT	BZH
39	Ram Kumari Budhathoki	Senior staff nurse	BZH
40	Ramdev B Dangi		BZH
41	Ashimna Thapa	Computer maintenance	BZH
42	Rodan Shah	Member	BZH
43	Kamala Shah	Reporter	Radio Banke
44	Narhari Sharma	Public health officer	Banke DPHO
45	Rudra Subedi	FNS	Banke
46	Radhya Shyam Baisa	Social worker, donor	Banke
47	Sukha Balmiki	Sweeper	BZH
48	Mina Balmiki	Sweeper	BZH
49	Chhaya Balmiki	Sweeper	BZH
50	Ram Paltan Gupta	Office helper	BZH
51	Idariya Behena	Office helper	BZH
52	Ram Murak Khatik	Office helper	BZH
53	Jagadish Goduya	Office helper	BZH
54	Sundari Nepali	Sweeper	BZH
55	Shanti Chaudhari	Sweeper	BZH
56	Devi Prasain	Consultant	NHSSP
57	Dr Ganga Shakya	Sr CEONC consultant	NHSSP
58	Karuna Shakya	QA Adviser	NHSSP
65	Dr Indra P Prajapati	Sr CEONC consultant	NHSSP
66	Mr Badri Nath Gyawali	Under-secretary, statistician	FHD

Annex 3: Checklist for Hospital Observation

Ward/department/service unit**:**

Unit in charges will keenly observe the specific wards/areas and note the needs, gaps and issues.

Assessments need not be limited to the items listed below:

	Good things	Areas of improvement
Neatness and cleanliness		
Visitor waiting areas/client flow management/security guards		
Hand washing provision/toilets for clients, service providers and visitors (privacy, water, light and drainage)		
24 hr electricity/back up		
24 hour water supply		
In each service area look for availability of HR, drugs, equipment and supplies, furniture, toilets, water, electricity, back up electricity,		
Infrastructure/rooms/quarters/training halls/visitors waiting halls		
Laundry/waste disposal containers		
Waste disposal pits		
Placenta pits		
Others		

Annex 4: Observational Findings

Bheri Zonal Hospital, 28–30 April 2014

Good things	Things to be improved
Maternity dept	
All nursing staff are SBA trained	Need maternity building expansion (additional 25 beds)
Students can be mobilized	Need separate gynae ward — separate active and latent phases
Access to phone	Need 10 additional waiting beds
Coordinated obstetrics-gynaecology op. theatre and nursing staff	Need 2 additional delivery tables
Matron cooperated and gave advice	Need washing machine
	Availability of ANC cards
	Distribution of incentives to mothers from maternity ward
	AC should be added in maternity due to heat fever among neonates
	Need 5 additional infusion pumps
	Need 3 spot lights and perinatal light
	Need to add instrument linen and staff
	Need more gynaecologists for caesareans and complication management (24 hrs)
	Need more medical officers
	Need 10 more nurses for labour room for closed monitoring
	Helpers
	Neonatal unit should be near to labour room
	Need provision of guard for visitor control
	Availability of paediatrician in maternity unit
	Provision of comprehensive abortion care (CAC) and post-abortion care (PAC) should be separate
	Screening
	Incubator beds (4)
	Toilets (6)
	Generator
	Visitor hall
	Access to 24 hour lab facility
	Emergency ultrasound
	Compensation for saved leave
Operating theatre:	
Day to day surgeries	Separate generator for OT
Minor and major, orthop. OT	Portable sterilisation machine
AC available	Need to replace old trolley and equipment
Large room	Need 2 additional cautery machines
Uterine prolapse and Aama programmes have made possible easy supply of medicine	Need 1 additional AA staff and 4 additional scrub staff

Good things	Things to be improved
Adequate supply of drugs due to Aama programme	Washing machine
	Compensation for saved leave or more staff
	Adequate supply of staff (avoid day-to-day requests)
	Fumigation machine
	Need additional bedside monitors
	Need 2 additional anaesthesia machines for simultaneous surgeries and caesareans
	Need 2 baby warmers
Infrastructure	
Good new doctor family quarters	Very hot in maternity ward due to inadequate ventilation
OPD is good and has adequate waiting room with seats	No clients were observed on the floor but the team counted only 35 beds. More beds are needed to cater for need.
Placenta pits	Despite recent improvements, sinks, toilets and amenities in maternity wards need repairs
NICU is well maintained	Despite recent improvements in cleanliness, many toilets need to be better cleaned in many depts (dropped blood, patches, dirty pans, etc)
OT is good & well equipped needing only some additional equipment	Water supply needs to be increased from current 60,000 litres per day to 120,000 litres per day
Pharmacy is good and places drugs in right order	Allocated budget for repair and maintenance for water and electricity is very low
OT building is under construction	Water is leaking from many taps without being repaired
	The ambulance has been in need of repair work for past two years
	New transformer is needed
Equipment	
Hydraulic OT tables functioning well	Due to low power supply, the CT scanner does not work
OT lamp functioning well	Cautery machine is in need of repair
Suction machines functioning well	X-ray machine is in need of repair and maintenance
Autoclaves are old but are functioning well due to availability of biomedical technician (KFW/GIZ)	Nurses duty station should be better equipped and medicine rooms need to be better managed
Incubators are good	Solid waste management is poor — buckets are placed on floor but are not well used
Ventilators	Drainage and pipes needs repairing
	Add additional Incubators
Coordination and partnership	
Good coordination	Clients from most Mid West and Far West districts underuse the hospital
	Most clients from Banke come for normal deliveries (bypass system)
	Weak referral mechanism
	Complicated cases from other institutions are sent to BZH
	Decision making — MeSu should be supported by HoDs
	Centralized instead of decentralized decision making process. Decision making should be more participatory