



Cost Analysis of Sri Lanka Every Newborn Action Plan to End Preventable Morbidity and Mortality 2017-2020



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List of abbreviations

ARM	Artificial Rupture of Membranes
AVD	Assisted Vaginal Delivery
BP	Blood Pressure
CPAP	Continuous Positive Airway Pressure
CS	Cesarean Section
ENAP	Every Newborn Action Plan
FHB	Family Health Bureau
ICU	Intensive Care Unit
IEC	Information Education Communication
IU	International Units
IV	Intravenous
KMC	Kangaroo Mother Care
LBW	Low Birth Weight
LKR	Sri Lankan Rupees
LMC	Lactation Management Center
MBC	Mother Baby Care Unit
MO	Medical Officer
MOH	Ministry of Health
NCU	Neonatal Care Unit
PHO	Pediatric House Officer
SKS	Saukya Karya Sahayaka
SLENAP	Sri Lanka Every Newborn Action Plan
USS	Ultra Sound Scan
WHO	World Health Organization

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1. Sri Lanka Every Newborn Action Plan (SLENAP) 2017-2020

Sri Lanka Every Newborn Action Plan (SLENAP) to end preventable morbidity and mortality (FHB, 2017) was developed with a vision to “ensure that Sri Lanka is a country in which there are no preventable deaths and illnesses of newborns or stillbirths, where every pregnancy is wanted, every birth celebrated, and women, babies and children survive, thrive and reach their full potential”. Following two goals will help to achieve our vision;

Goal 1; To reduce neonatal mortality rate from 6.5/1000 live births (2013) to 4.2/1000 live births by the end of 2020

Goal 2; To reduce the stillbirth rate from 6.4/1000 births to 4.5/1000 births by end of 2020

Strategic objectives and key activity areas are identified in the plan. The cost analysis of the SLENAP is presented in this document.

2. Methodology to cost SLENAP

There were two parts for the cost analysis. We focused on the cost of nine specific intervention packages included in the Every Newborn Action Plan (ENAP) in the first part and the second part was on the cost of the priority activities selected from the SLENAP.

2.1 Costing of key ENAP interventions

Costing of interventions was confined to the focus interventions used in the bottleneck analysis of Every Newborn Action Plan (Fig -1). Two ENAP interventions; “Basic newborn care ” and “Inpatient supportive care for sick and small newborns ” were not costed separately. ENAP intervention “Basic newborn care ” was combined with the intervention “Skilled care at birth”. ENAP intervention “Inpatient supportive care for sick and small newborns ” was not cost separately due to the difficulty of developing assumptions of resource used in the focus intervention. In addition to the key ENAP interventions, intervention cost for newborn screening for Congenital Hypothyroidism also included in the analysis since it is very important newborn intervention in Sri Lanka.

Key Every Newborn Action Plan Interventions

1. Management of preterm delivery
2. Skilled care at birth
3. Basic Emergency Obstetric Care
4. Comprehensive Emergency Obstetric Care
5. Basic Newborn care
6. Neonatal resuscitation
7. Kangaroo mother care
8. Treatment of severe infection
9. Inpatient supportive care for sick and small newborns

Figure 1 - Key Every Newborn Action Plan Intervention

Interventions are costed using a bottom-up approach. The model calculates the total cost per year as well as the cost per case. In this costing exercise, the intervention costing was limited to the inputs such as drugs, supplies, staff time required and a number of visits or hospital days. Outline of the costing process is given in Fig -2

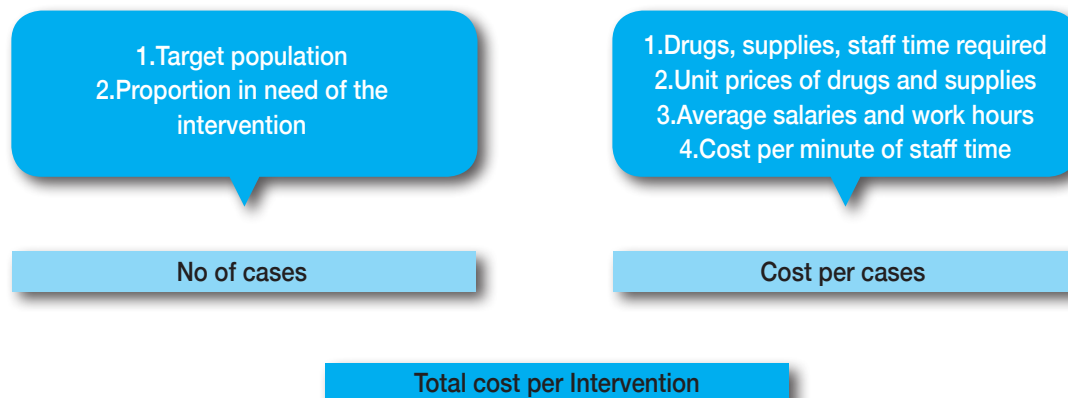


Figure 2- Outline of intervention costing process

Estimates of the staff time linked to an intervention as well as estimates related to the number of visits or hospital days were based on the one-health model intervention treatment assumptions by WHO and the available Sri Lankan norms and standards. Expert opinion also obtained to specify the type and the amount of drugs, supplies and personal time required for each intervention and then cost these inputs using unit item costs in rupees.

Unit prices of the items were mainly extracted from the sources of Ministry of Health (MOH) Sri Lanka and based year for the most of the unit prices was 2015. Identification of population in need of the specific interventions was done by using the publications of MOH Sri Lanka and other available literature.

Cost of capital equipment used in specific interventions was calculated assuming 5-year working life and norms given by the MOH Sri Lanka. Detail calculations are given in the annexes (1-19).

2.2 Costing of priority activities of SLENAP

Priority activities selected from the SLENAP were costed in the second part of the document. This part of the costing is mainly focused on the provision of standard sets of equipment to the facilities during the period of 2017 to 2020 (Cost of consumable were not considered). The data sources used to obtain the unit prices are similar to the intervention costing. These selected activities come under three major area in SLENAP, namely; care during labour and childbirth, Essential newborn care and care of sick and small newborns. Data sources used for the cost analysis are given in Table - 1

Table 1 - Data sources used for the cost analysis

Data Item	Source/s of information
Population in need	Family Health Bureau. (2011). Maternal Care package: a Guide to Field healthcare workers. Colombo: Ministry of Health.
	Family Health Bureau. (2014). Annual Report on Family Health. Ministry of Health.
	Ministry of Health (2013). National Guidelines on Maternal Care. Colombo, Sri Lanka: Ministry of Health
	Gunawardane, D. A. "Neonatal Outcomes, Maternal Risk Factors and Cost of "Adverse Neonatal Outcome" among Term Neonates Delivered at Teaching Hospital Kandy.", University of Colombo, 2015.
	Ministry of Health. (2015). Annual Health Bulletin
	Department of Health. (2014). Annual Health Bulletin .: Ministry of Health, Central Province, Srilanka.
	Hilder L, Zhichao Z, Parker M, Jahan S, Chambers GM 2014. Australia's mothers and babies 2012. Perinatal statistics series no. 30. Cat. no. PER 69. Canberra: AIHW.
Resources used	Family Health Bureau. (2014). Institutional Maternity Care: Norms for Services, Equipment and Drug Ministry of Health Srilanka.
	Avenir Health. "One health Model; Intervention Treatment Assumptions." Intervention Treatment Assumptions (2013).
	Family Health Bureau. (2014). Levels of Neonatal care for the specialist hospitals in Sri Lanka.: Ministry of Health Srilanka.
	Family Health Bureau. (2017).Sri Lanka Every Newborn An Action Plan to End Preventable Morbidity and Mortality 2017-2020: Ministry of Health Srilanka.
	Family Health Bureau. (2017).Building and Other Guidelines for Neonatal Intensive Care Units, Special Baby Care Units, Mother Baby Center: Ministry of Health Srilanka.
	Ministry of Health (2014). National guidelines for newborn care - Volume I.
	Gunawardane, D. A. "Neonatal Outcomes, Maternal Risk Factors and Cost of "Adverse Neonatal Outcome" among Term Neonates Delivered at Teaching Hospital Kandy.", University of Colombo, 2015.
Unit prices	Medical Supplies Division. "Annual Procurement Plan for the Year 2015." Ministry of Health, Sri Lanka., 2015.
	Medical Supplies Division. "Annual Estimate for the Year 2015." Ministry of Health, Sri Lanka., 2015.
	Ministry of Health. (2009). Revision of charges for the services provided by Hospitals.
	Gunawardane, D. A. "Neonatal Outcomes, Maternal Risk Factors and Cost of "Adverse Neonatal Outcome" among Term Neonates Delivered at Teaching Hospital Kandy.", University of Colombo, 2015.
	Current Market Prices

3 . Cost calculations of ENAP interventions

3.1 ENAP intervention - Management of preterm delivery

Tracer Intervention: Antenatal Corticosteroid

Definition:

Administration of steroids and inpatient care of women with suspected preterm labour.

Population in Need:

Women experiencing pre-term labour and those at high risk of going into pre-term labour
Proxy used for calculation of number of cases: Pregnancies x Country rates of pre-term birth

Drugs and Supplies required Per Woman:

Recommended: 3 doses of Dexamethasone 8 mg injections 12 hourly

Personnel Time Required per Case:

Doctor: 30 min to confirm diagnosis and prescribe treatment, Nursing Officer 15 min per one administration

Other Costs:

48 hours under observation (2 inpatient days)

Cost Calculation

Data Inputs	Value	
Number of deliveries	334,821	
Prevalence of preterm births (%)	7.00	
Average salary - Doctor (Per hour) (Annex 19)	LKR	649
Average salary - Nursing Officers (Per hour) (Annex 19)	LKR	269
Cost per inpatient day	LKR	1,014
The unit cost of Dexamethazone	LKR	7.52
Syringe, needle+ swab+ Skin sterilizer	LKR	10

Average cost per case		
Cost of drugs and supplies	LKR	53
Salaries - Doctors	LKR	324
Salaries - Nursing Officer	LKR	202
Cost of inpatient days	LKR	2,028
Total average cost per case	LKR	2,606
Total Annual cost of the intervention		
Population in need	23,437	
Total annual cost of the intervention	LKR	61,082,393

3.2 ENAP Intervention - Skilled care at birth

Tracer Intervention: Labor and Delivery Management / Essential care for all women and immediate essential newborn care - Facility-based delivery

Definition:

Monitoring of labour progress (partograph), detection of complications, infection control (clean delivery). Active management of the third stage (Controlled cord traction/ Oxytocics / Massage). Immediate drying and skin-to-skin contact, early breastfeeding initiation

Population in Need

All women are assumed to require skilled care at delivery. All most all (99%) the deliveries in Sri Lanka take place at health facilities.

Drugs and Supplies required Per Woman:

Drugs and supplies currently cost in the model (does include active management of the third stage of labour)

Clean delivery	Note	Number	Time per day	Days Per case / Episode	Units per case
Gloves, surgeon's, latex, disposable, sterile, pair	Examination	1	4	1	4
	For delivery	2			2
Povidone iodine, solution, 10%	Antiseptic	1	1	1	1
Clean delivery kit	Standard delivery set	1	1	1	1
Paracetamol, tablet, 500 mg	Pain management after delivery	1	4	3	12
Partograph	Form to monitor progress of labour	1	1	1	1
Delivery record	Delivery record for clinic	1	1	1	1
Oxytocin, injection, 5IU in 1 ml ampoule	To induce contraction of uterus, IM	2	1	1	2
Syringe, needle+ swab	For oxytocin injection after delivery	1	1	1	1

No specific drugs for routine newborn care

Personnel Time Required per Case:

The model currently assumes the following personnel requirements

For normal deliveries: 6 hours of a midwife's time, 2 hours of a midwifery trained Nursing Officer and 30 minutes of a Medical Officer

Other Costs:

1 inpatient day for all women

Cost calculations*Cost of drugs and supplies*

Drugs and Supplies	Units per case	Unit cost (LKR)	Total cost (LKR)
Gloves, surgeon's, latex, disposable, sterile, pair	6	29.50	177.00
Povidone iodine, solution, 10%	1	256.88	256.88
Clean delivery kit	1	26.61	26.61
Paracetamol, tablet, 500 mg	12	0.69	8.28
Partograph	1	0.50	0.50
Delivery record	1	1	1.00
Oxytocin, injection, 5 IU in 1 ml ampoule	2	7.03	14.06
Syringe, needle	1	7.19	7.19
Total cost of drugs and supplies			491.52

Data Inputs	Value	
Number of deliveries	334,821	
Population in need (%)	65%	
Average salary - Doctor (Per hour) (Annex 19)	LKR	649
Average salary - Nursing Officers (Per hour) (Annex 19)	LKR	269
Average salary - Midwife Officers (Per hour) (Annex 19)	LKR	265
Cost per inpatient day (Rs.)	LKR	1,014

Average cost per case		
Cost of drugs and supplies	LKR	492
Salaries - Doctors	LKR	324
Salaries - Nursing Officer	LKR	538
Salaries - Midwife	LKR	1,593
Cost of inpatient days	LKR	1,014
Total average cost per case	LKR	3,960
Total Annual cost of the intervention		
Population in need	217,634	
Total annual cost of the intervention	LKR	861,800,352

3.3 ENAP Intervention - Basic Emergency Obstetric Care

Tracer Intervention: Assisted Vaginal Delivery (AVD) for Obstructed Labor

Definition:

Assisted vaginal delivery is the vaginal delivery of a baby performed with the help of forceps or a vacuum device.

Population in Need:

Nearly one percent of pregnant mother undergo forceps delivery whereas 0.5 percent undergo vacuum deliveries in Sri Lanka.

Drugs and Supplies required Per Woman:

AVD	Note	Number	Time per day	Days Per case / Episode	Units per case
Gloves, surgeon's, latex, size 7-1/2, disposable, sterile, pair	Gloves for examination	1	4	1	4
	Gloves for delivery	2			2
Povidone iodine, solution, 10%	Antiseptic	1	1	1	1
Cotton swab	To apply antiseptic	1	1	1	1
Clean delivery kit		1	1	1	1
Clean forceps delivery set		1	1	1	1
Oxytocin, injection, 10 IU in 1 ml ampoule	To induce contraction of uterus, IM	2	1	1	2
Syringe, disposable, 5 ml, without needle	For oxytocin injection after delivery	1	1	1	1
Needle, 22G, disposable		1	1	1	1
Paracetamol, tablet, 500 mg	Pain management after delivery	1	3	4	12
Episiotomy or Tears					
Lidocaine HCl (in dextrose 7.5%), ampoule 2ml	Local anaesthesia for episiotomy/ repair of tears	1	1	1	1
Syringe, disposable, 10 ml, with needle	For lidocaine injection	1	1	1	1
Clean Episiotomy Set		1	1	1	1

AVD	Note	Number	Time per day	Days Per case / Episode	Units per case
Suture, catgut, chromic, 3/0, 150 cm	Suture of episiotomy or tear	1	1	1	1
Gauze pad, 76 x 76 mm, sterile	Dressing for episiotomy/ tears	1	1	1	1
After delivery					
Pethidine, HCl 50mg/ml, 2 ml	Pain management after delivery	1	1	1	1
Syringe, disposable, 10 ml, without needle	For pethidine injection	1	1	1	1
Needle, 21G, disposable	For pethidine injection	1	1	1	1

Personnel Time Required per Case:

AVD: Doctor 30 minutes, nurse 30 minutes + 30 minutes a day during 4-day hospital stay

Other Costs:

4 night hospitalization for all women

Cost Calculation

Cost of drugs and supplies

AVD	Units per case	Unit Cost (LKR)	Total cost (LKR)
Gloves, surgeon's, latex, size 7-1/2, disposable, sterile, pair	6	17.34	104.04
Povidone iodine, solution, 10%	1	256.88	256.88
Cotton swab	1	75.00	75.00
Clean delivery kit	1	26.62	26.62
Clean forcep delivery set	1	1,057.49	100.00
Oxytocin, injection, 5 IU in 1 ml ampoule	2	7.03	14.06
Syringe, disposable, 5 ml, without needle	4.6	3.73	17.16
Needle, 22G, disposable	1	2.60	2.60
Paracetamol, tablet, 500 mg	12	0.69	8.28
Episiotomy or Tears			
Lidocaine HCl (in dextrose 7.5%), ampoule 2ml	1	20.74	20.74
Syringe, disposable, 10 ml, with needle	1	7.71	7.71

AVD	Units per case	Unit Cost (LKR)	Total cost (LKR)
Clean Episiotomy Set	1	54.26	54.26
Suture, catgut, chromic, 3/0, 150 cm	1	59.62	59.62
Gauze pad, 76 x 76 mm, sterile	1	23.70	23.70
After delivery			
Pethidine, HCl 50 mg/ml, 2 ml	1	48.13	48.13
Syringe, disposable, 5 ml, without needle	1	3.73	3.73
Needle, 21G, disposable	1	2.47	2.47
Total drug and supply cost for Forceps delivery			1,782.49
Total drug and supply cost for Forceps delivery (without equipment cost)			725.00
Cost for disposable vacuum delivery set			5,000.00
Total drug and supply cost for vacuum delivery			5,725.00

Data inputs

Data Inputs	Value	
Number of deliveries	334,821	
Population in need of forceps delivery (%)	1	
Population in need of vacuum delivery (%)	0.50	
Average salary - Doctor (Per hour) (Annex 19)	LKR	649
Average salary - Nursing Officers (Per hour) (Annex 19)	LKR	269
Cost per inpatient day	LKR	1,014

Average cost per case		
Cost of drugs and supplies - Forceps delivery	LKR	825
Salaries - Doctors	LKR	324
Salaries - Nursing Officer	LKR	672
Cost of inpatient days	LKR	4,055
Total average cost per case - Forceps delivery	LKR	6834
Cost of drugs and supplies - Forceps delivery	LKR	5,725
Salaries - Doctors	LKR	324
Salaries - Nursing Officer	LKR	672
Cost of inpatient days	LKR	4,055
Total average cost per case - Vacuum delivery	LKR	10,777
Total Annual cost of the intervention		
Population in need of forceps delivery		3,348
Population in need of vacuum delivery		1,674
Total Annual cost of forceps deliveries	LKR	22,882,581
Total Annual cost for vacuum deliveries	LKR	18,041,458
Total annual cost of the intervention	LKR	40,924,039
Total average cost per case of AVD	LKR	8,148

3.4 ENAP Intervention - Comprehensive Emergency Obstetric Care

Tracer Key Intervention: Cesarean section

Definition:

C-section or caesarean delivery is the use of surgery to deliver one or more babies. A caesarean section is often performed when a vaginal delivery would put the baby or mother at risk. A caesarean delivery may be performed based on the shape of the mother's pelvis or history of a previous C-section. A C-section typically takes 45 minutes to an hour. It may be done with a spinal block such that the woman is awake or under general anaesthesia. Often a number of days are required in the hospital to recover sufficiently to return home.

Population in Need:

Percentage of cesarian sections out of all deliveries was 33.8% in 2014

Drugs and Supplies required Per Woman:

C-section	% receiving this treatment	Note	Number	Time per day	Days Per case / Episo de	Units per case
Gloves, surgeon's, latex, size 7-1/2, disposable, sterile, pair	100%	Gloves	1	4	1	1
Spinal anaesthesia						
Sodium lactate (Ringer) + set, 500ml	50%	To preload and avoid hypotension	2	1	1	2
IV giving/infusion set, with needle	50%	for drip during surgery	1	1	1	1
Lidocaine HCl (in dextrose 7.5%), ampoule 2ml	50%	spinal anaesthesia	1	1	1	1
Syringe, disposable, 2 ml, without needle	50%	for lidocaine injection	1	1	1	1
Needle, spinal, 22G, sterilizable, with stylet, stainless steel	50%	for lidocaine injection	1	1	1	1
Epinephrine, injection, 1 mg (as hydrochloride) in 1ml ampoule	25%	Adrenaline, 0.25ml, if anest. > 45 min	1	1	1	1
General anaesthesia						
Halothane, Liquid, Inhaler, 1 Bottle (250ml)	50%	general anaesthesia	1	1	1	1
Sodium lactate (Ringer) + set, 500ml	50%	IV drip during surgery	2	1	1	2

C-section	% receiving this treatment	Note	Number	Time per day	Days Per case / Episo de	Units per case
IV giving/infusion set, with needle	50%	for drip during surgery	1	1	1	1
Atropine, injection, 1 mg, (sulfate) in 1-ml ampoule	50%	antimuscarinic drug	1	1	1	1
Syringe, disposable, 5 ml, without needle	50%	for atropine injection	1	1	1	1
Needle, 21G, disposable	50%	for atropine injection	1	1	1	1
Prophylactic antibiotics						
Ampicillin, powder for injection, 500mg, vial	100%	antibiotics prophylaxis, 2G IV	4	1	1	4
Other						
Catheter, Foley, Ch 14	100%	Monitoring of urine output	1	1	1	1
Bag, urine, 2000ml	100%	Urine collection	1	1	1	1
Procedure						
Povidone iodine, solution, 10%	100%	Antiseptic	1	1	1	1
Blade, surgical, no. 22, sterile, disposable	100%		1	1	1	1
Needle, suture, assorted sizes, round body	100%	interior and exterior suture	3	1	1	3
Suture, catgut, chromic, 1, 150 cm	100%	Repair uterine incision	1	1	1	1
Suture, catgut, chromic, 1, 150 cm	100%	To close fascia	1	1	1	1
Suture, synthetic, non- absorbable, 3/0, braided polyester, 150cm	100%	To close skin	1	1	1	1
Gauze pad, 76 x 76 mm, sterile	100%	Dressing of the incision	1	1	1	1

C-section	% receiving this treatment	Note	Number	Time per day	Days Per case / Episo de	Units per case
After delivery						
Pethidine, HCl 50 mg/ ml, 2 ml	100%	Pain management after C- section	1	1	1	1
Syringe, disposable, 10 ml, without needle	100%	for pethidine injection	1	1	1	1
Needle, 21G, disposable	100%	for pethidine injection	1	1	1	1
Sodium lactate (Ringer) + set, 500ml	100%	IV drip during surgery	2	1	1	2
Oxytocin, injection, 10 IU in 1 ml ampoule	100%	20 units over 2 hours	2	1	1	2
IV giving/infusion set, with needle	100%	for drip during surgery	1	1	1	1
Paracetamol, tablet, 500 mg	100%	Pain management	1	4	3	12
If signs of infection						
IV giving/infusion set, with needle	25%		1	1	1	1
Sodium chloride, injectable solution, 0,9% isotonic, 500ml	25%	Shock/IV fluid for antibiotics	1	2	4	8
Ampicillin, powder for injection, 500mg, vial	25%	2g IV every 6 hours until fever-free for 48 hours	4	4	4	64
Gentamycin, injection, 40 mg (as sulfate)/ml in 2-ml vial	25%	5mg/kg body weight IV every 24 hours	7	1	4	28
Metronidazole, injection, 500 mg in 100 ml vial	25%	500mg IV every 8 hours	1	3	4	12

Personnel Time Required per Case:*For operation*

	Number	Time	Total time equivalent
Medical Officers	2	60 min	120m
Nursing Officer	2	60 min	120m
Anaesthesia MO	1	60 min	60m
PHO	1	15 min	15m
Midwife	1	15 min	15m
SKS	1	60 min	60m

For inpatient care

Medical officer 15 minutes a day during 5-day hospital stay

Nursing officer 30 minutes a day during 5-day hospital stay

Other Costs:

Five nights hospitalization for all women

Cost calculation*Cost of Drugs and supplies*

C-section	% receiving this treatment	Units per case	Unit cost (LRK)	Total Cost (LKR)
Gloves, surgeon's, latex, size 7-1/2, disposable, sterile, pair	100%	4	17.34	69.36
Spinal anaesthesia				658.74
Sodium lactate (Ringer), 500ml	50%	2	49.43	98.86
IV giving/infusion set, with needle	50%	1	30.54	30.54
Lidocaine HCl (in dextrose 7.5%), ampoule 2ml	50%	1	20.74	20.74
Syringe, disposable, 2 ml, without needle	50%	1	3.84	3.84
Needle, spinal, 22G, sterilizable, with stylet, stainless steel	50%	1	481.83	481.83
Epinephrine, injection, 1 mg (as hydrochloride) in 1ml ampoule	50%	1	22.93	22.93
General anaesthesia				2396.68
Halothane, Liquid, Inhaler, 1 Bottle (250ml)	50%	1	2253.33	2253.33
Sodium lactate (Ringer), 500ml	50%	2	49.43	98.86

C-section	% receiving this treatment	Units per case	Unit cost (LRK)	Total Cost (LKR)
IV giving/infusion set, with needle	50%	1	30.54	30.54
Atropine, injection, 1 mg, (sulfate) in 1-ml ampoule	50%	1	7.62	7.62
Syringe, disposable, 5 ml, without needle	50%	1	3.73	3.73
Needle, 21G, disposable	50%	1	2.60	2.6
Prophylactic antibiotics				47.8
Ampicillin, powder for injection, 500mg, vial	100%	4	11.95	47.8
Other				98.77
Catheter, Foley, Ch 14	100%	1	56.22	56.22
Bag, urine, 2000ml	100%	1	42.55	42.55
Procedure				788.52
Povidone iodine, solution, 10%	100%	1	256.88	256.88
Blade, surgical, no. 22, sterile, disposable	100%	1	12.65	12.65
Needle, suture, assorted sizes, round body	100%	3	63.26	189.78
Suture, catgut, chromic, 1, 150 cm	100%	1	44.54	44.54
Suture, catgut, chromic, 1, 150 cm	100%	1	41.27	41.27
Suture, synthetic, non- absorbable, 3/0, braided polyester, 150cm	100%	1	124.90	124.9
Gauze pad, 76 x 76 mm, sterile	100%	5	23.70	118.5
After delivery				210.18
Pethidine, HCl 50 mg/ml, 2 ml	100%	1	48.13	48.13
Syringe, disposable, 10 ml, without needle	100%	1	7.71	7.71
Needle, 21G, disposable	100%	1	2.60	2.6
Sodium lactate (Ringer) + set, 500ml	100%	2	49.43	98.86
Oxytocin, injection, 10 IU in 1 ml ampoule	100%	2	7.03	14.06
IV giving/infusion set, with needle	100%	1	30.54	30.54
Paracetamol, tablet, 500 mg	100%	12	0.69	8.28
If signs of infection				1593.78
IV giving/infusion set, with needle	25%	1	30.54	30.54

C-section	% receiving this treatment	Units per case	Unit cost (LKR)	Total Cost (LKR)
Sodium chloride, injectable solution, 0,9% isotonic, 500ml	25%	8	48.64	389.12
Ampicillin, powder for injection, 500mg, vial	25%	64	11.95	764.8
Gentamycin, injection, 40 mg (as sulfate)/ml in 2-ml vial	25%	28	7.92	221.76
Metronidazole, injection, 500 mg in 100 ml vial	25%	12	15.63	187.56
Cost - Spinal Anaesthesia				658.74
Cost -General Anaesthesia				2396.68
Cost - Treatment of Infection				1593.78
Cost - Basic				1214.63

Data Inputs

Data Inputs	Value	
Number of deliveries	334,821	
Prevalence of CS	33.80	
Average salary - Doctor (Per hour) (Annex 19)	LKR	648.76
Average salary - Nursing Officers (Per hour) (Annex 19)	LKR	268.80
Average salary - Midwife Officers (Per hour) (Annex 19)	LKR	265.42
Average salary - SKS (Per hour) (Annex 19)	LKR	186.12
Cost per inpatient day	LKR	1,013.85
Average hospital stay following CS (Days)	5	
Proportion of CS done under Spinal Anaesthesia (Assumption)	50%	
Proportion of CS done under General Anaesthesia (Assumption)	50%	

Total Annual cost of the intervention		
Population in need - CS	LKR	113,169
Cost of drugs and supplies - Basic	LKR	137,459,067
Cost of drugs and supplies - Spinal Anaesthesia	LKR	37,274,638
Cost of drugs and supplies - General Anaesthesia	LKR	90,183,641
Cost of drugs and supplies - Treatment of infections	LKR	45,091,821
Salaries - Doctors	LKR	330,389,296
Salaries - Nursing Officer	LKR	136,889,825
Salaries - Midwife	LKR	7,509,362
Salaries - SKS	LKR	21,063,107
Cost of inpatient days	LKR	573,684,478
Total annual cost for the intervention	LKR	1,379,545,234
Total average cost per case	LKR	12,190

3.5 ENAP Intervention - Basic Newborn care

Tracer Key intervention - Clean birth practice/cord care, warmth, and feeding

Basic newborn care is a set of preventive and supportive interventions taken at and around the time of the birth to ensure the survival of all newborns. These measures include:

- Clean birth process
- Immediate assessment of breathing
- Provision of warmth by adequate ambient temperature in the delivery area, immediate drying, immediate and prolonged skin to skin contact, warming, wrapping and delayed bathing
- Support for early initiation and exclusiveness of breastfeeding
- Hygienic cord care

Cost of this intervention is also included in the ENAP intervention package, “skilled care at birth”.

3.6 ENAP Intervention - Neonatal resuscitation

Tracer Intervention: Basic neonatal resuscitation

Definition:

Basic neonatal resuscitation at the time of birth comprises a set of interventions required to establish breathing and circulation in a newborn who is not spontaneously breathing/crying. These interventions include;

1. Immediate assessment of breathing during and after thorough drying
2. Stimulation by drying or rubbing the back while providing thermal care

3. Ensuring patent airway by placing the infant supine with head in the sniffing position and clearing the airway by sucking, if required
4. Providing positive pressure ventilation with a bag and mask equipment of appropriate size.

Population in Need:

Nearly 20% of newborns required some form of resuscitation

Oxygen only	6.0%
Suction only	5.7%
Positive pressure ventilation with Bag mask equipment	7.2%

Drugs and Supplies required Per Newborn:

Equipment required: the Annualised cost of two standard neonatal resuscitation trolleys (one for labour room and operation theatre) divided by average caseload per year.

Personnel Time Required per Case:

Doctor: 20 minutes Midwifery nurse: 20 minutes

Cost calculations

Data inputs

Data Inputs	Value	
Number of deliveries	334,821	
Percentage of newborns required some form of resuscitation	20.0	
Average salary - Doctor (Per hour) (Rs.)	LKR	649
Average salary - Nursing Officers (Per hour) (Rs.)	LKR	269
Cost of supplies per newborn (Annex 12)	LKR	8521

Total Annual cost of the intervention		
Population in need	66,964	
Cost of drugs and supplies per neonate	LKR	8,521
Salaries - Doctors (per neonate)	LKR	214
Salaries - Nursing Officer (per neonate)	LKR	89
Total average cost per neonate	LKR	8,824
Total cost of intervention per year	LKR	590,897,846

3.7 ENAP Intervention - Kangaroo mother care

Tracer Intervention: Kangaroo Mother Care

Definition:

Kangaroo mother care (KMC), defined as skin-to-skin contact between a mother and her newborn, frequent and exclusive or nearly exclusive breastfeeding, and early discharge from the hospital, has been proposed as an alternative to conventional neonatal care for low birthweight (LBW) infants (premature and small babies).

Population in Need:

All LBW births. Prevalence of LBW in Sri Lanka was 11.4 in 2015.

Supplies required Per Case:

The annualized cost of equipment (medical and non-medical) in mother-baby centre is divided by average caseload per year.

Personnel Time Required per Case:

Nurse/midwife 30 minutes per day

Other resources

Requires inpatient care/ Bed

Inpatient days - Average length of stay for low birth weight babies is around 4 days

Cost calculations

Data Inputs	Value	
Number of deliveries	334,821	
Percentage of newborns required KMC	11.4	
Average salary - Nursing Officers (Per hour) (Annex 19)	LKR	269
Cost of supplies per newborn (Annex 07)	LKR	1535
Cost per inpatient day	LKR	1,014
Median length of hospital stay for LBW baby	4	

Total Annual cost of the intervention		
Population in need - KMC	38,170	
Cost of drugs and supplies per neonate	LKR	1,535
Salaries - Nursing Officer (per neonate)	LKR	134
Cost of inpatient care per newborn	LKR	4,055
Total average cost per neonate	LKR	5,725
Total cost of intervention per year	LKR	218,518,970

3.8 ENAP Intervention - Treatment of severe infection

Tracer Intervention: Newborn Sepsis - Full Supportive Care

Definition:

Hospital-based management of sick newborn as an inpatient with supportive care, which includes;

1. Administration of intravenous antibiotics
2. Wider choice of antibiotics including broad-spectrum antibiotics
3. Option of using frequent/higher dosage if needed to maintain high blood antibiotic levels or coverage for meningitis,
4. Access to second-line antibiotic therapy for neonates with treatment failure on first line antibiotics
5. Intravenous access and administration of intravenous fluids if needed
6. Oxygen supplementation if required
7. Access to appropriate diagnostic procedures, such as monitoring of pulse, blood pressure, and oximetry reading, as well as monitoring/correction of hypoglycemia if required.

Population in Need:

Newborn sepsis in Sri Lanka assumed to be 12.5% ().

Drugs and Supplies required Per Newborn:

Basic Sepsis screening

1. Blood culture
2. Full blood count
3. CRP/micro ESR
4. Urine Culture
5. CSF - If necessary
6. Chest Xray- If necessary

If sepsis is clinically suspected, antibiotics should be commenced as early as possible after obtaining relevant cultures.

First line treatment

- Benzyl Penicillin (or Ampicillin) and Gentamicin
- add Cefotaxime or replace Gentamicin with Cefotaxime if meningitis is suspected

	% receiving this treatment	Number	Time per day	Days Per case / Episode	Units per case
Benzyle penicillin	100%	1	2	7	14
	100%	1	3	3	9
Gentamicin inj 40mg/ml 2ml amp	100%	1	1	10	10
Cefotaxime	30%	1	2	7	14
Lumbar puncture	30%	1			2
Blood culture	100%	2			1
CRP	100%	1			2
Full Blood Count	100%	2			2
Urine Culture	100%	2			1
IV giving/ infusion set, with needle	20%	1	1	1	1

Personnel Time Required per Newborn:

Doctor 60 minutes a day, nurse 2 hours per day for 10 days.

Other Costs:

10-nights hospitalization

Cost calculations

Cost of drugs and supplies

	% receiving this treatment	Units per case	Unit Price (LKR)	Total cost* (LKR)
Benzyle penicillin	100%	14	8.87	5,197,259
	100%	9	8.87	3,341,095
Gentamicin inj 40mg/ml 2ml amp	100%	10	7.9	3,306,357
Cefotaxime	30%	14	27.9	4,904,291
Lumbar puncture	30%	2	275	6,905,683
Blood culture	100%	1	800	33,482,100
CRP	100%	2	150	12,555,788
Full Blood Count	100%	2	200	16,741,050
Urine Culture	100%	1	250	10,463,156
IV giving/infusion set, with needle	20%	1	30.54	255,636
Total cost to treat all the newborns with sepsis per year				97,152,415
* To treat all the newborns with sepsis per year				

Data Inputs

Data Inputs	Value	
Number of deliveries	334,821	
Percentage of newborns with newborn sepsis	12.5	
Average salary - Doctor (Per hour) (Annex 19)	LKR	649
Average salary - Nursing Officers (Per hour) (Annex 19)	LKR	269
Cost per inpatient day	LKR	1,014
Cost of supplies per newborn	LKR	97152415

Total Annual cost of the intervention		
Newborns with newborn sepsis	41,853	
Cost of drugs and supplies per neonate	LKR	97,152,415
Salaries - Doctors (per neonate)	LKR	271,523,090
Salaries - Nursing Officer (per neonate)	LKR	224,999,712
Cost of inpatient care for newborn with sepsis	LKR	424,322,839
Total cost for intervention per year	LKR	1,017,998,055
Total average cost per neonate	LKR	24,323

3.9 ENAP Intervention - Inpatient supportive care for sick and small newborns

Tracer Intervention - IV fluid/feeding support and safe oxygen

Definition of tracer activities Safe oxygen administration

Involves the use of an appropriate delivery mechanism with adequate monitoring to ensure that babies maintained appropriate oxygen levels. Common interfaces used are nasal/ prong/ cannula, headbox . Continuous Positive Airway Pressure (CPAP) or in a small proportion of the most severe cases, mechanical ventilation. All babies require the monitoring of oxygen levels using pulse oximetry to ensure optimum and safe levels of oxygen are delivered to maximize survival and minimize potential damage.

Intra-gastric feeding

Refers to the administration of milk feeds through a small plastic tube. The tube should be passed by a trained individual, usually a nurse, through the nose (nasogastric) or mouth (orogastric) directly into the stomach. Where full enteral feeding is not tolerated, intravenous fluids or total parenteral nutrition (TPN) may be considered, in setting where these are available.

Safe administration of IV fluids

Intravenous fluids are most commonly administered through venous cannula inserted by a trained medical or nursing staff. They require careful monitoring of the insertion site for signs of infection, as well as meticulous monitoring of fluid intake and output, including serum electrolytes, urine output and daily records of weight. Intravenous fluids should be administered with caution, complemented by enteral milk feeds where feasible.

Due to lack of data inputs and difficulty of developing assumptions on resource use, this intervention was not costed in this cost analysis.

3.10 ENAP Intervention - Newborn screening

Tracer Intervention: Newborn screening for Congenital Hypothyroidism

Definition:

All the newborns should be screened for congenital hypothyroidism by obtaining a sample of blood through heel prick procedure in the postnatal ward before the newborn is discharged from the hospital.

Population in Need:

All newborns should be screened for congenital hypothyroidism before the discharge from the hospital.

Supplies required Per Case:

	Number required	Unit price (LKR)	Total cost (LKR)
Blood Lancet - Neonatal	1	150	150
Investigation form with filter paper	1	5	5
Laboratory cost per investigation	1	300	300
Total cost			455

Personnel Time Required per Case:

Nursing Officer 20 minutes per case

Other resources

Postal cost per one investigation LKR. 10

Cost calculations

Data Inputs

Data Inputs	Value	
Number of deliveries	334,821	
Average salary - Nursing Officers (Per hour) (Annex 19)	LKR	269
Cost of supplies per newborn	LKR	455

Total Annual cost of the intervention		
Population in need - CS	334,821	
Cost of drugs and supplies per neonate	LKR	455
Salaries - Nursing Officer (per neonate)	LKR	134
Postal cost per one investigation	10	
Total average cost per neonate	LKR	599
Total cost of intervention per year	LKR	200,691,707

3.11 Summary of the intervention costing

Summary of the intervention costing is presented in the Table -2, Table 3 Fig-3 and Fig -4.

Table 2 - Total annual costs of essential ENAP interventions in Sri Lanka

Essential ENAP interventions	Total Cost	
ENAP intervention package - Management of preterm delivery		
Tracer Intervention : Antenatal Corticosteroid	LKR	61,082,393
ENAP Intervention package - Skilled care at birth		
Tracer Intervention: Labor and Delivery Management / Essential care for all women and immediate essential newborn care - Facility-based delivery	LKR	861,800,352
ENAP Intervention Package - Basic Emergency Obstetric Care		
Tracer Intervention : AVD for Obstructed Labor	LKR	40,924,039
ENAP Intervention Package - Comprehensive Emergency Obstetric Care		
Tracer Intervention : Cesarean section	LKR	1,379,545,234
ENAP Intervention Package - Basic Newborn care		
Tracer intervention - Clean birth practice/cord care, warmth, and feeding	Cost under "Skilled care at birth"	
ENAP Intervention Package - Neonatal resuscitation		
Tracer Intervention : Basic neonatal resuscitation	LKR	590,897,846
ENAP Intervention Package - Kangaroo mother care		
Tracer Intervention: Kangaroo Mother Care	LKR	218,518,970
ENAP Intervention Package - Treatment of severe infection		
Tracer Intervention: Newborn Sepsis - Full Supportive Care	LKR	1,017,998,055
ENAP Intervention Package - Inpatient supportive care for sick and small newborns		
Tracer Intervention - IV fluid/feeding support and safe oxygen	Not done	
Newborn screening program in Sri Lanka		
Tracer Intervention - Screening all the newborns for congenital hypothyroidism	LKR	200,691,707
Total cost for essential ENAP interventions in Sri Lanka	LKR	4,371,458,597

Estimated Cost Comparisons between Individual ENAP interventions

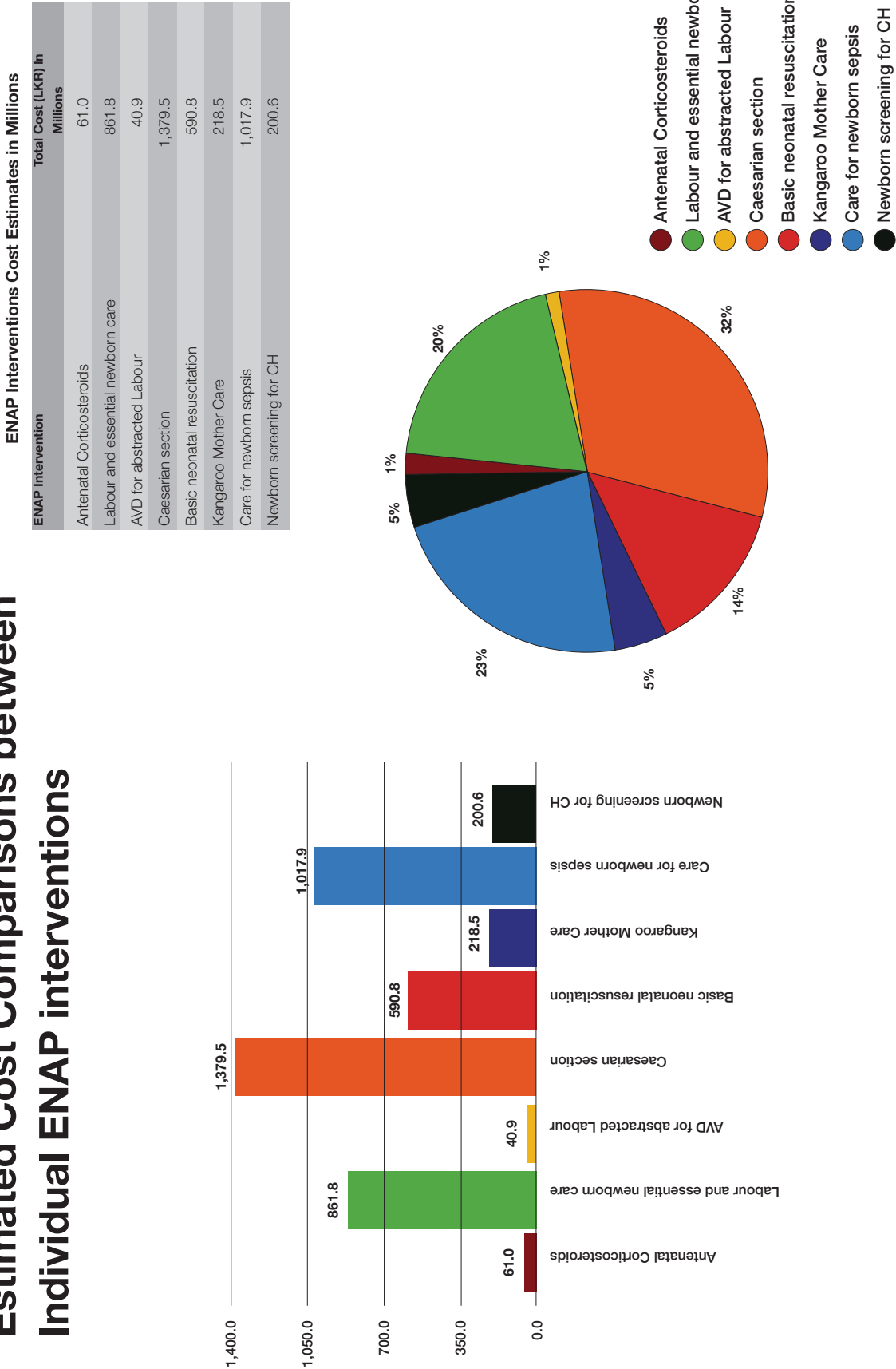


Figure 3 - Estimated cost comparisons between individual ENAP interventions

Table 3 - Average cost per case for essential ENAP intervention in Sri Lanka

Essential ENAP interventions	Total Cost	
ENAP intervention package - Management of preterm delivery		
Tracer Intervention : Antenatal Corticosteroid	LKR	2,606
ENAP Intervention package - Skilled care at birth		
Tracer Intervention: Labor and Delivery Management / Essential care for all women and immediate essential newborn care - Facility-based delivery	LKR	3,960
ENAP Intervention Package - Basic Emergency Obstetric Care		
Tracer Intervention: AVD for Obstructed Labor	LKR	8,148
ENAP Intervention Package - Comprehensive Emergency Obstetric Care		
Tracer Key Intervention: Cesarean section	LKR	12,190
ENAP Intervention Package - Basic Newborn care		
Tracer Key intervention - Clean birth practice/cord care, warmth, and feeding	Cost under “Skilled care at birth”	
ENAP Intervention Package - Neonatal resuscitation		
Tracer Intervention : Basic neonatal resuscitation	LKR	8,824
ENAP Intervention Package - Kangaroo mother care		
Tracer Intervention: Kangaroo Mother Care	LKR	5,725
ENAP Intervention Package - Treatment of severe infection		
Tracer Intervention: Newborn Sepsis - Full Supportive Care	LKR	24,323
ENAP Intervention Package - Inpatient supportive care for sick and small newborns		
Tracer Intervention - IV fluid/feeding support and safe oxygen	Not done	
Newborn screening program in Sri Lanka		
Tracer Intervention - Screening all the newborns for congenital hypothyroidism	LKR	599

CORRELATION BETWEEN AVERAGE AND TOTAL COST OF ENAP INTERVENTIONS

ENAP INTERVENTION	INTERVENTION NUMBER	TOTAL ANNUAL COST (LKR) IN MILLIONS	AVERAGE COST PER CASE (LKR)
Antenatal Corticosteroids	1	61.0	2,606
Labour and essential newborn care	2	861.8	3,960
AVD for abstracted Labour	3	40.0	8,148
Caesarian section	4	1,379.5	12,190
Basic neonatal resuscitation	5	590.8	8,824
Kangaroo Mother Care	6	218.5	5,725
Care for newborn sepsis	7	1,017.9	24,323
Newborn screening for CH	8	200.6	599

This Bubble chart shoes correlation between average and total intervention cost of key ENAP interventions. Bubble place in they axis indicates the total annual cost of intervention while size of the bubble represents the average cost per case.

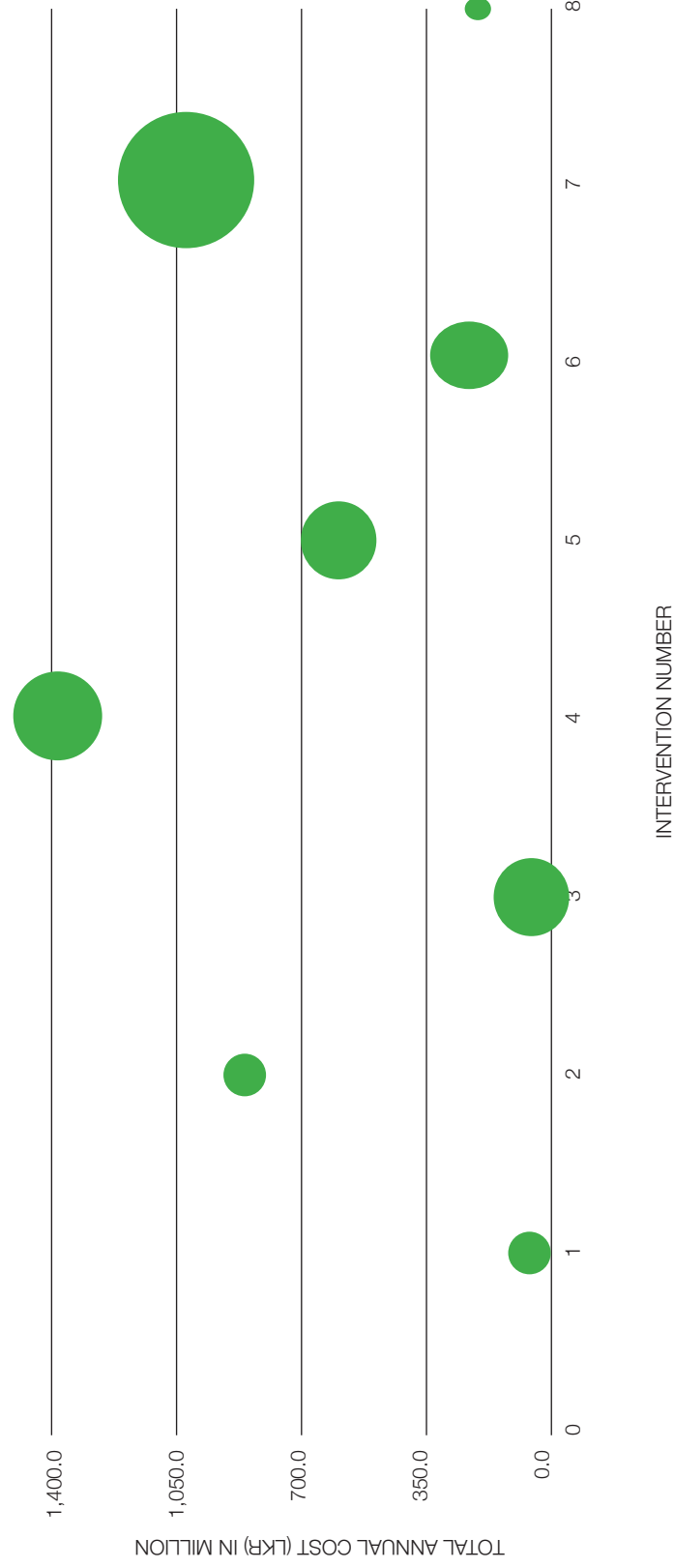


Figure 4– Correlation between average and total cost of ENAP interventions

4. Cost of priority activities of Sri Lanka Every Newborn Action Plan 2017-2020

4.1. Care during labour and childbirth

4.1.1 Promote and support skilled care at birth		
4.1.1.1 Upgrade facilities in the LR (140 LRs in 120 specialist hospitals) to provide skilled care (provide equipment to all the LR as per LR guide) by 2020		
Number of labour room to upgrade	LKR	140
Cost to provide equipment to a labour room	LKR	8,448,575
Total Cost for activity 1.1.1	LKR	1,182,800,485
4.1.1.2 Introduce a wall chart on care at the time of birth in Sinhala and Tamil for all the labour rooms		
Cost for poster development	LKR	600,000
Printing cost per poster	LKR	500
Number of posters to print	LKR	300
Total printing cost	LKR	150,000
Total Cost for activity 1.1.2	LKR	750,000
4.1.1.3 Train all staff in maternity units in all the specialist hospitals in EOC training (3 days) by 2020		
Cost Per one EOC training programme	LKR	61,500
Number of workshops to conduct	LKR	144
Total Cost for activity 1.1.3	LKR	8,856,000
4.1.1.4 Introduce obstetric formats to all the institutions with maternity units to improve the quality of record keeping and monitoring by 2018		
Cost for conducting one workshop to introduce formats, eIMMR and internal audits to each of the district	LKR	50,000
Number of workshops to conduct	LKR	26
Total Cost for activity 1.1.4	LKR	1,300,000
4.1.1.5 Introduce internal clinical audit to assess care at the time of delivery to all specialist hospitals		
Cost for conducting one workshop to Introduce internal clinical audit to assess care at the time of delivery to all specialist hospitals	LKR	50,000
Number of workshops to conduct	LKR	26
Total Cost for activity 1.1.5	LKR	1,300,000
Total Cost for activity 1.1	LKR	1,195,006,485

4.1.2 Promote female companion of choice at birth		
4.1.2.1 Develop guidelines for female companions and conduct advocacy and training programs		
Cost for development of the guide	LKR	400,000
Printing cost per guide	LKR	50
Number of guide to print	LKR	500
Total Printing cost	LKR	25,000
Cost to conduct workshops for advocacy and training with staff from practising areas for non-practicing areas to promote female companion at birth	LKR	40,000
Number of workshops to conduct	LKR	25
Total Cost for activity 1.2.1	LKR	1,425,000
Total Cost for activity 1.2	LKR	1,425,000

4.2 Essential Newborn Care

4.2.1 Promote and support essential newborn care		
4.2.1.1 Train all staff caring for newborns on Essential Newborn care (4 days course) by 2020		
Cost for one workshop	LKR	150,000
Number of workshops	LKR	117
Total cost for key activity 2.1.1	LKR	17,550,000
4.2.1.2 Conduct 10 workshops per year on Breastfeeding counselling (5 days course) up to 2020		
Cost for one workshop	LKR	175,000
Number of workshops	LKR	40
Total cost for key activity 2.1.2	LKR	7,000,000
4.2.1.3 Train all field staff (PHMM, PHNS, MOOH) in essential elements of the ENCC (3 days) by 2020		
Cost of development	LKR	300,000
Printing cost per manual	LKR	700
Number of manuals needed	LKR	7,000
Total Printing cost	LKR	4,900,000
Cost for one workshop	LKR	120,000
Number of workshops	LKR	356
Total cost for key activity 2.1.3	LKR	47,920,000
4.2.1.4 Develop, print and disseminate a protocol on essential newborn care to all the LR, PN wards and NN units		
Cost of development	LKR	1,700,000
Cost of printing per set of 17 protocols	LKR	17,000
Number of units to provide	LKR	405

Total cost for key activity 2.1.4	LKR	8,585,000
4.2.1.5 Provision of equipment to provide essential newborn care at postnatal wards		
Cost to provide equipment to newborn corner of postnatal ward	LKR	5,550,000
Number of postnatal wards to upgrade	LKR	145
Total cost for key activity 2.1.5	LKR	804,750,000
Total cost for key activity 2.1	LKR	885,805,000

4.3 Care of sick and small newborn

4.3.1 Promote and support care for sick and small newborn		
4.3.1.1 Upgrade neonatal units as per levels of neonatal care (Level I, II, III and III+)		
No of neonatal units at level III+	LKR	4
No of neonatal units at level III	LKR	19
No of neonatal units at level II	LKR	36
No of neonatal units at level I	LKR	46
Cost to provide essential equipments to III+ neonatal care unit	LKR	96,242,051
Cost to provide essential equipments to level III neonatal care unit	LKR	66,242,051
Cost to provide essential equipments to level II neonatal care unit	LKR	56,231,559
Cost to provide essential equipments to level I neonatal care unit	LKR	49,881,559
Total cost for the priority activity 3.1.1	LKR	5,577,486,759
4.3.1.2 Conduct 10 workshops per year on Advance Neonatal Life Support up to 2020		
Cost for one workshop	LKR	50,000
Number of workshops	LKR	40
Total cost for the priority activity 3.1.2	LKR	2,000,000
4.3.1.3 Train all staff in neonatal units with the sick newborn care training (3 days)		
Cost for one workshop	LKR	120,000
Number of workshops	LKR	127
Total cost for the priority activity 3.1.3	LKR	15,240,000
4.3.1.4 Establishment of the neonatal retrieval centres		
Number of retrieval centres	LKR	9
Cost to provide essential equipments to neonatal retrieval center	LKR	14,010,000
Total cost for the priority activity 3.1.4	LKR	126,090,000
4.3.1.5 Establish bed availability systems in all the specialist hospitals by 2020		
Cost of office equipment per unit	LKR	180,000
Number units	LKR	101
Cost for one workshop on bed availability system	LKR	50,000
Number of workshops	LKR	30
Total cost for the priority activity 3.1.5	LKR	19,680,000
Total cost for the priority activity 3.1	LKR	5,738,496,759

4.4 Cost of priority activities of SLENAP 2017-2020 - Summary

Table 4 - Cost of priority activities of SLENAP 2017-2020

Priority activity	Total cost	
4.1.Care during labour and childbirth		
4.1.1Promote and support skilled care at birth	LKR	1,195,006,485
4.1.1.1 Upgrade facilities in the LR (140 LRs in 120 specialist hospitals) to provide skilled care (provide equipment to all the LR as per LR guide) by 2020	LKR	1,182,800,485
4.1.1.2 Introduce a wall chart on care at the time of birth in Sinhala and Tamil for all the labour rooms	LKR	750,000
4.1.1.3 Train all staff in maternity units in all the specialist hospitals in EOC training (3 days) by 2020	LKR	8,856,000
4.1.1.4 Introduce obstetric formats to all the institutions with maternity units to improve the quality of record keeping and monitoring by 2018	LKR	1,300,000
4.1.1.5 Introduce internal clinical audit to assess care at the time of delivery to all specialist hospitals	LKR	1,300,000
4.1.2 Promote female companion of choice at birth	LKR	1,425,000
4.1.2.1 Develop guidelines for female companions and conduct advocacy and training programs	LKR	1,425,000
4.2.Essential Newborn Care		
4.2.1 Promote and support essential newborn care	LKR	885,805,000
4.2.1.1 Train all staff caring for newborns on Essential Newborn care (4 days course) by 2020	LKR	17,550,000
4.2.1.2 Conduct 10 workshops per year on Breastfeeding counselling (5 days course) up to 2020	LKR	7,000,000
4.2.1.3 Train all field staff (PHMM, PHNS, MOOH) in essential elements of the ENCC (3 days) by 2020	LKR	47,920,000
4.2.1.4 Develop, print and disseminate a protocol on essential newborn care to all the LR, PN wards and NN units	LKR	8,585,000
4.2.1.5 Provision of equipment to provide essential newborn care at postnatal wards	LKR	804,750,000
4.3. Care of sick and small newborn		
4.3.1 Promote and support care for sick and small newborn	LKR	5,738,496,759
4.3.1.1 Upgrade neonatal units as per levels of neonatal care (Level I, II, III and III+)	LKR	5,577,486,759
4.3.1.2 Conduct 10 workshops per year on Advance Neonatal Life Support up to 2020	LKR	2,000,000
4.3.1.3 Train all staff in neonatal units with the sick newborn care training (3 days)	LKR	15,240,000
4.3.1.4 Establishment of the neonatal retrieval centers	LKR	126,090,000
4.3.1.5 Establish bed availability systems in all the specialist hospitals by 2020	LKR	19,680,000
Total cost for priority activities of SLENAP 2017-2020	LKR	7,820,733,243

Annexes

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Annex -01

Estimated costs of standard treatment units and equipment sets

	Total cost	
Neonatal care unit - Level III+	LKR	96,242,051
Neonatal care unit - Level III	LKR	66,242,051
Neonatal care unit - Level II	LKR	56,231,559
Neonatal care unit - Level I	LKR	49,881,559
Neonatal retrieval center	LKR	14,010,000
Mother-baby centre	LKR	3,150,125
Labour room	LKR	8,448,575
Newborn corner of labour room	LKR	636,602
Labour room with newborn corner	LKR	9,085,177
Newborn corner of postnatal ward	LKR	5,550,000
Lactation Management Center	LKR	514,481
Neonatal Resuscitation Trolley	LKR	1,278,194
Delivery Kit	LKR	15,969
Episiotomy Kit	LKR	24,419
ARM set	LKR	7,198
Perineal /Cervical repair kit	LKR	53,901
Forceps delivery set	LKR	47,587
Cesarian section set	LKR	160,035

Annex – 02

Estimated costs of neonatal care unit - Level III+

Item	Number	Price Unit	Total cost
Multipara monitors	4	200,000	800,000
Pulse oxymeters	2	150,000	300,000
Neonatal resuscitation trolley (Including Infant warmer with resuscitator)	2	1278193.76	2556387.52
Syringe pumps	10	160,000	1,600,000
Infusion pumps	6	100,000	600,000
Electronic weighing scale (Digital)	4	2,992	11,968
Nebulizers (Oxygen driven)	2	30,000	60,000
Portable sucker (one jar)	6	200,000	1,200,000
Cold light for IV cannulation	2	300,000	600,000
Spot lamp	2	50,000	100,000
Computer	1	50,000	50,000
Phototherapy units - Single	6	300,000	1,800,000
Phototherapy units - Double (1 bottom)	4	300,000	1,200,000
Perspex shields (1m2)	10	1,000	10,000
Neonatal stethoscopes	20	1,000	20,000
Steel drums	6	4,294	25,764
IV infusion stands	12	4,500	54,000
X ray illuminator (Wide Size)	1	3,000,000	3,000,000
Ward round trolley	2	7,500	15,000
Flow meters and Humidifier bottle	4	7,021	28,084
O2 cylinder stands	4	13,800	55,200
Empty O2 cylinders	14	9,224	129,136
Head box	15	6,500	97,500
Cots	33	4,607	152,031
Incubators	10	800,000	8,000,000
ICU Ventilators - Neonatal	5	3,500,000	17,500,000
Neonatal Incubator Transport	1	1,050,000	1,050,000

Item	Number	Price Unit	Total cost
ICU Ventilator neonatal (Transport)	1	2,960,000	2,960,000
Thermometer -	20	624	12,480
Wall dispenser	1	1,500	1,500
Wall clocks	3	1,000	3,000
CPAP Machine	5	1,500,000	7,500,000
Infant Warmers	4	200,000	800,000
Total body Cooling system	1	10,000,000	10,000,000
Intensive phototherapy	1	650,000	650,000
Portable US scan machine	1	3,000,000	3,000,000
Neonatal transcutaneous bilirubinometer	1	300,000	300,000
Extra-Corporeal Membrane Oxygenation	1	30,000,000	30,000,000
Total cost for standard set of equipment in level III+ NCU			96,242,051

Annex – 03

Estimated costs of neonatal care unit - Level III

Item	Number	Price Unit	Total cost
Multipara monitors	4	200,000	800,000
Pulse oxymeters	2	150,000	300,000
Neonatal resuscitation trolley (Including Infant warmer with resuscitator)	2	1278193.76	2556387.52
Syringe pumps	10	160,000	1,600,000
Infusion pumps	6	100,000	600,000
Electronic weighing scale (Digital)	4	2,992	11,968
Nebulizers (Oxygen driven)	2	30,000	60,000
Portable sucker (one jar)	6	200,000	1,200,000
Cold light for IV cannulation	2	300,000	600,000
Spot lamp	2	50,000	100,000
Computer	1	50,000	50,000
Phototherapy units - Single	6	300,000	1,800,000
Phototherapy units - Double (1 bottom)	4	300,000	1,200,000
Perspex shields (1m2)	10	1,000	10,000
Neonatal stethoscopes	20	1,000	20,000
Steel drums	6	4,294	25,764
IV infusion stands	12	4,500	54,000
X ray illuminator (Wide Size)	1	3,000,000	3,000,000
Ward round trolley	2	7,500	15,000
Flow meters and Humidifier bottle	4	7,021	28,084
O2 cylinder stands	4	13,800	55,200
Empty O2 cylinders	14	9,224	129,136
Head box	15	6,500	97,500
Cots	33	4,607	152,031
Incubators	10	800,000	8,000,000
ICU Ventilators - Neonatal	5	3,500,000	17,500,000
Neonatal Incubator Transport	1	1,050,000	1,050,000

Item	Number	Price Unit	Total cost
ICU Ventilator neonatal (Transport)	1	2,960,000	2,960,000
Thermometer -	20	624	12,480
Wall dispenser	1	1,500	1,500
Wall clocks	3	1,000	3,000
CPAP Machine	5	1,500,000	7,500,000
Infant Warmers	4	200,000	800,000
Total body Cooling system	1	10,000,000	10,000,000
Intensive phototherapy	1	650,000	650,000
Portable US scan machine	1	3,000,000	3,000,000
Neonatal transcutaneous bilirubinometer	1	300,000	300,000
Total cost for standard set of equipment in level III NCU			66,242,051

Annex -04

Estimated costs of neonatal care unit- Level II

Item	Number	Price Unit	Total cost
Multipara monitors	4	200,000	800,000
Pulse oxymeters	2	150,000	300,000
Neonatal resuscitation trolley (Including Infant warmer with resuscitator)	2	1278193.76	2556387.52
Syringe pumps	10	160,000	1,600,000
Infusion pumps	6	100,000	600,000
Electronic weighing scale (Digital)	3	2,992	8,976
Nebulizers (Oxygen driven)	2	30,000	60,000
Portable sucker (one jar)	6	200,000	1,200,000
Cold light for IV cannulation	2	300,000	600,000
Spot lamp	2	50,000	100,000
Computer	1	50,000	50,000
Phototherapy units - Single	6	300,000	1,800,000
Phototherapy units - Double (1 bottom)	4	300,000	1,200,000
Perspex shields (1m2)	10	1,000	10,000
Neonatal stethoscopes	20	1,000	20,000
Steel drums	6	4,294	25,764
IV infusion stands	12	4,500	54,000
X ray illuminator (Wide Size)	1	3,000,000	3,000,000
Ward round trolley	1	7,500	7,500
Flow meters and Humidifier bottle	4	7,021	28,084
O2 cylinder stands	4	13,800	55,200
Empty O2 cylinders	14	9,224	129,136
Head box	15	6,500	97,500
Cots	33	4,607	152,031
Incubators	10	800,000	8,000,000
ICU Ventilators - Neonatal	5	3,500,000	17,500,000
Neonatal Incubator Transport	1	1,050,000	1,050,000

Item	Number	Price Unit	Total cost
ICU Ventilator neonatal (Transport)	1	2,960,000	2,960,000
Thermometer -	20	624	12,480
Wall dispenser	1	1,500	1,500
Wall clocks	3	1,000	3,000
CPAP Machine	5	1,500,000	7,500,000
Infant Warmers	4	200,000	800,000
Portable US scan machine	1	3,000,000	3,000,000
Intensive phototherapy	1	650,000	650,000
Neonatal transcutaneous bilirubinometer	1	300,000	300,000
Total cost for standard set of equipment in level II NCU			56,231,559

Annex - 05

Estimated costs of neonatal care unit -Level I

Item	Number	Price Unit	Total cost
Multipara monitors	4	200,000	800,000
Pulse oxymeters	2	150,000	300,000
Neonatal resuscitation trolley (Including Infant warmer with resuscitator)	2	1278193.76	2556387.52
Syringe pumps	10	160,000	1,600,000
Infusion pumps	6	100,000	600,000
Electronic weighing scale (Digital)	3	2,992	8,976
Nebulizers (Oxygen driven)	2	30,000	60,000
Portable sucker (one jar)	6	200,000	1,200,000
Cold light for IV cannulation	2	300,000	600,000
Spot lamp	2	50,000	100,000
Computer	1	50,000	50,000
Phototherapy units - Single	6	300,000	1,800,000
Perspex shields (1m2)	10	1,000	10,000
Neonatal stethoscopes	20	1,000	20,000
Steel drums	6	4,294	25,764
IV infusion stands	12	4,500	54,000
X ray illuminator (Wide Size)	1	3,000,000	3,000,000
Ward round trolley	1	7,500	7,500
Flow meters and Humidifier bottle	4	7,021	28,084
O2 cylinder stands	4	13,800	55,200
Empty O2 cylinders	14	9,224	129,136
Head box	15	6,500	97,500
Cots	33	4,607	152,031
Incubators	10	800,000	8,000,000
ICU Ventilators - Neonatal	5	3,500,000	17,500,000
Neonatal Incubator Transport	1	1,050,000	1,050,000
ICU Ventilator neonatal (Transport)	1	2,960,000	2,960,000
Thermometer	20	624	12,480
Wall dispenser	1	1,500	1,500
Wall clocks	3	1,000	3,000
Infant Warmers	4	200,000	800,000
Portable US scan machine	1	3,000,000	3,000,000
CPAP Machine	2	1,500,000	3,000,000
Neonatal transcutaneous bilirubinometer	1	300,000	300,000
Total cost for standard set of equipment in level I NCU			49,881,559

Annex 06

Estimated costs of neonatal retrieval centre

Item	Number	Unit Price		Total cost	
Transport Incubator	1	LKR	1,050,000	LKR	1,050,000
Transport ICU ventilator neonatal	1	LKR	2,960,000	LKR	2,960,000
Ambulance	1	LKR	10,000,000	LKR	10,000,000
Total cost for standard set of equipment in MBC				LKR	14,010,000

Annex 07

Estimated costs of Mother Baby Center

Item	Number	Price Unit	Total cost
<i>Electric equipment</i>			
Suction Appratus(Neonatal)	2	200,000	400,000
Infant Warmer with Resuscitator Baby	1	900,000	900,000
Hand dryers x 4	4	7,000	28,000
Sterilizer for sterilizing the feeding cups and utensils x 1	1	25,000	25,000
Emargency lamps x 2	2	2,500	5,000
Refrigerator for the dining room	1	50,000	50,000
Boiler	1	7,600	7,600
Washing machine with dryer	1	44,900	44,900
A television set for the counseling room	1	32,900	32,900
DVD or VCD for the counseling room	1	5,390	5,390
Computer	1	50,000	50,000
Printer	1	10,000	10,000
<i>Surgical Inventory</i>			
Phototherapy units - Single	1	300,000	300,000
Phototherapy units - Double	1	300,000	300,000
Digital weighing scales x1	1	2,992	2,992
Neonatal stethoscopes (low cost	2	1,000	2,000
Sphygmomanometers x 2	2	10,000	20,000
Laryngoscope x 1 (neonatal straight blade	1	80,242	80,242
Neonatal ambu bags x 1	1	2,355	2,355
Drug trolleys x 1	1	11,500	11,500
O2 cylinders	2	9,224	18,449
O2 Flow meter and humidifier bottle	2	7,021	14,042
O2 cylinder stands	2	13,800	27,600
Saline stands x 2	2	4,500	9,000
Miscellaneous:			
Digital Thermometer - Low reading	5	624	3,121
Small stainless steel feeding cups with lids	20	45	900
Set of Saucers, cups, glasses, plate racks, kettle and jugs for keeping water for the dining room.	1	10,000	10,000
Rectangular trays to keep feeding cups x 4	4	500	2,000
Wall Clock x 1	1	1,000	1,000

Item	Number	Price Unit	Total cost
Water filter x 1	1	10,500	10,500
Waste bins	3	5,000	15,000
Pedal bins for soiled nappies	10	750	7,500
Furniture			
Adult low beds	10	25,000	250,000
Bed drawers	10	11,675	116,750
bed for mothers in the feeding room	1	25,000	25,000
bed for the staff room	1	12,775	12,775
Stainless steel baby cots with lower half to keep baby's items	10	4,607	46,070
Feeding chairs to breastfeed - wide wooden chairs with low armrest	10	6,875	68,750
plastic chairs without low arm rest	15	1,225	18,375
Shoe rack	1	2,415	2,415
Stainless steel cloth hangers for drying (fixed outside	1	5,000	5,000
Linen cupboards	1	22,175	22,175
Baby bathing tubs	3	1,000	3,000
Stackable baskets to carry babies	3	1,000	3,000
A bookrack in the counselling room	1	10,000	10,000
Dining table	2	10,400	20,800
Chairs	15	1,070	16,050
Pantry cupboards (set)	1	50,000	50,000
Easy chairs fo corridors x 15	15	1,000	15,000
Table for duty station	1	37,850	37,850
Chairs for duty station	6	6,875	41,250
Computer table	1	5,775	5,775
Computer chair	1	5,275	5,275
Total cost for standard set of equipment in MBC			3,150,125

Base on the assumption that one MBC for 300 deliveries	
Useful life of equipment (Year)	5
Annualized cost of equipment of MBC	630025.05
Prevalence of LBW	11.4
Cost of equipment per LBW baby	1535.15

Annex 08

Estimated costs of labour room

Item	Number	Price Unit	Total cost
Basic Furniture and General items			
Delivery bed struts	8	300,000	2,400,000.00
Spot lamps	8	50,000	400,000.00
wall clock	1	1,000	1,000.00
Refrigerator	1	50,000	50,000.00
Revolving stools	8	21,240	169,920.00
Instrument cabinets	2	23,600	47,200.00
Emergency Drug Trolley	1	47,200	47,200.00
Patient Trolley	2	32,000	64,000.00
Oxygen Cylinders	4	9,224	36,897.04
O2 Flow meter and humidifier bottle	4	7,021	28,084.16
O2 cylinder stands	4	13,800	55,200.00
Rechargeable emergency lamp	2	2,500	5,000.00
Suction apparatus - adult	1	130,000	130,000.00
Wheel chair -commode	1	26,000	26,000.00
Instrument trolley	8	22,000	176,000.00
Waste basket with colour code system	8	15,000	120,000.00
Table for duty station	1	28,000	28,000.00
Chairs	8	6,875	55,000.00
Equipment			0.00
BP APPARATUS (Small , medium, and large)	3	10,000	30,000.00
Pinard fetal stethoscope	8	1,000	8,000.00
Adult stethoscope	3	2,000	6,000.00
Adult Laryngoscope	2	58,699	117,398.00
Adult ambu bag	2	9,666	19,332.24
Hand held dopler	4	90,000	360,000.00
CTG Machine	2	350,000	700,000.00
Pulsoxymeter (With pediatric probe)	1	150,000	150,000.00
Vacuum Extractor	1	100,000	100,000.00
Adult sucker	1	130,000	130,000.00
Nebulizer	1	50,000	50,000.00
Sterilizer	1	46,000	46,000.00
Mini autoclave	1	350,000	350,000.00

Item	Number	Price Unit	Total cost
Cutdown set	1	20,801	20,801.48
Female urinary catheter - metal	5	109	547.00
Surgical drum	6	4,294	25,762.38
Delivery set	30	15,969	479,070.00
Episiotomy sets	30	24,419	732,572.10
ARM sets	20	7,198	143,969.60
Cervical repair kit	6	32,310	193,860.00
Perineal repair kit	2	32,310	64,619.70
Specular sims	4	3,466	13,863.20
Specular Cuscos - Large	2	643	1,285.84
Specular Cuscos - Medium	2	7,247	14,494.06
Specular Cuscos - Small	2	571	1,142.96
Artery Forceps	6	3,184	19,102.14
Cheatle forceps	4	8,849	35,394.56
Dressing Scissors	2	265	529.36
Obstetric Forceps (Wriggley's)	1	3,824	3,824.18
Obstetric Forceps (Mid cavity)	2	400	800.00
Rotational forceps (High forceps)	1	2,842	2,841.89
Clinical oral thermometer	8	114	912.00
Infusion pump	6	100,000	600,000.00
<i>Linen and Other</i>			
Gowns	25	4,300	107,500.00
Washable aprons	12	2,300	27,600.00
Sterile Machintosh	24	1,534	36,816.00
Boots	10	767	7,670.00
Washable curtains (sets)	3	2,455	7,365.00
Total cost for standard set of equipment in labour room			8,448,574.89

Annex - 09

Estimated costs of newborn corner in the labour room

Item	Number	Price Unit	Total cost
Secca weighing scale	1	63,900	63,900.00
Neonatal suckers	1	200,000	200,000.00
Infant Magill's laryngoscope	2	80,242	160,483.90
Neonatal rescutaire	1	90,000	90,000.00
Neonatal costs	8	4,607	36,856.00
Oxygen Cylinders	1	9,224	9,224.26
O2 Flow meter and humidifier bottle	1	7,021	7,021.04
O2 cylinder stands	1	13,800	13,800.00
Neonatal stethoscope	1	1,000	1,000.00
Glucometers	1	0	0.00
BP apparatus with neonatal cuffs	1	10,000	10,000.00
Guedel airway different neonatal sizes (0,00,000,0000)	4	35	140.20
Neonatal ambu bags with masks	3	2,355	7,065.00
Flexible Stiletto	2	148	296.00
Mackintosh	24	1,534	36,816.00
Total cost for standard set of equipment in newborn corner of labour room			636,602.40

Annex 10

Estimated cost of newborn corner of postnatal ward

Item	Number	Price Unit	Total cost
Phototherapy Unit - Single	2	300,000	600,000
Suction Apparatus - Neonatal	1	100,000	100,000
Infant warmer with resuscitator	1	900,000	900,000
Pulse oximeter	1	150,000	150,000
OAE Machine	1	3,800,000	3,800,000
Total cost for standard set of equipment in newborn cones of postnatal wards			5,550,000

Annex 11

Estimated cost of Lactation Management Centre

Item	Number	Price Unit	Total cost
Neonatal suckers	1	100,000	100,000.00
Steriliser for sterilising the feeding cups and utensils	1	25,000	25,000.00
A television set for the counseling room	1	32,900	32,900.00
DVD or VCD for the counseling room	1	5,390	5,390.00
Computer	1	50,000	50,000.00
Printer	1	10,000	10,000.00
Digital weighing scales	1	2,992	2,992.00
Neonatal stethoscopes (low cost	1	1,000	1,000.00
Neonatal ambu bags with masks	1	2,355	2,355.00
Digital Thermometer - Low reading	4	624	2,496.00
Rectangular trays to keep feeding cups	4	500	2,000.00
Wall Clock	1	1,000	1,000.00
Water filter	1	10,500	10,500.00
Waste bins	3	5,000	15,000.00
Pedal bins for soiled nappies	4	750	3,000.00
Adult low beds	1	25,000	25,000.00
Stainless steel baby cots with lower half to keep baby's items	3	4,607	13,821.00
Feeding chairs to breastfeed - wide wooden chairs with low armrest	5	6,875	34,375.00
Shoe rack	1	2,415	2,415.00
Linen cupboards	1	22,175	22,175.00
A bookrack in the counselling room	1	10,000	10,000.00
Pantry cupboards	1	50,000	50,000.00
Chairs for duty station	6	6,875	41,250.00
Table for duty station	1	37,850	37,850.00
Kidney Trays	2	401	801.94
Torch	1	150	150.00
Tape	1	10	10.00
Doll	4	1,000	4,000.00
Artificial Breast	4	2,000	8,000.00
IEC materials	1	1,000	1,000.00
Total cost of standard set of equipment for LMC			514,480.94

Annex 12

Estimated cost of neonatal Resuscitation Trolley

Item	Number	Price Unit	Total cost
Infant warmer with resus	1	900,000.00	900000
Low-pressure sucker with meter adjustable to 100-150 mmHg pressure (low-pressure sucker	1	200,000.00	200000
Oxygen cylinder with functioning flow meter with pressure regulator with valve key.	1	7,021.04	7021.04
Neonatal Ambu bag (250 ml with the reservoir and O2 masks of both sizes (term and preterm)	3	2,354.70	7064.1
Laryngoscope with straight blades of both sizes, No:0 and No: 1	2	80,241.95	160483.9
ET tube introducer stilet (plastic/flexible)	2	148.00	296
Umbilical catheterisation pack - scalpel, artery forceps x 2, suture	2	1,664.36	3328.72
Cost per one set of equipment for newborn resuscitation			1278193.76

Need two sets one per operation theatre and One for Labour room	
Total cost for 2 neonatal resuscitation trolleys	2556387.52
Annualized cost (Useful life 5 years)	511277.504
Proportion of newborns required any form of resuscitation (%)	20
Number of neonates required any form of resuscitation per year (with 300 deliveries/ month)	60
Cost per resuscitation	8521.29

Annex 13

Estimated cost of delivery kit

Item	Number	Price Unit	Total cost
Artery forceps	2	3,183.69	6,367.38
Episiotomy scissors	1	4,000.00	4,000.00
Umbilical scissors	1	4,799.96	4,799.96
Kideney trays	2	400.97	801.94
Total cost of delivery set			15,969.28

Delivery sets for LR (300 deliveries per month)	30.00
Total cost for 30 delivery sets	479,078.40
Annual cost (Useful life 5 years)	95,815.68
Total deliveries per year	3,600.00
Equipment cost per delivery	26.62
Cost per resuscitation	8521.29

Annex 14

Estimated cost of episiotomy set

Item	Number	Price Unit	Total cost
Blunt operating scissors	1	13,000.00	13,000.00
Needle holder	1	10,807.37	10,807.37
Toothed dissecting forceps	1	144.65	144.65
Kidney Tray	1	400.97	400.97
Round body needle	1	63.26	63.26
Cutting needles	1	2.82	2.82
Total cost of episiotomy set			24419.07

Episiotomy sets per 300 deliveries	30.00
Total cost for 30 episiotomy kits	732572.10
Annual cost (Useful life 5 years)	146514.42
Prevalence of episiotomy (%)	75
Number of episiotomies per year	2700
Equipment cost per episiotomy	54.26

Annex 15

Estimated cost of ARM set

Item	Number	Price Unit	Total cost
Long artery forceps	1	6797.51	6797.51
Kidney Trays (Large)	1	400.97	400.97
Total cost of ARM set			7198.48

Annex 16

Estimated cost of perineal/cervical repair kit

Item	Number	Price Unit	Total cost
Sponge forceps	3	2554.07	7662.21
Artery forceps (9 inches)	3	6797.51	20392.53
Short tails Spencer wells artery forceps	4	105.46	421.84
Grren armitage forceps	4	857.23	3428.92
Toothed dissecting forceps	1	144.65	144.65
Scissors	1	264.68	264.68
Needle holders	1	10,807.37	10807.37
Round body needles	1	63.26	63.26
Cutting needles	1	2.82	2.82
Sims Vaginal Speculum	1	3465.8	3465.8
Cuscos Vaginal Speculum (medium)	1	7247	7247
Total cost of cervical/perineal repair kit			53901.08

Annex 17

Estimated cost of forceps delivery set

Item	Number	Price Unit	Total cost
Metal catheter	1	109.4	109.4
Sponge holders	3	2554.07	7662.21
Towel clips	4	697.79	2791.16
Tooth forceps	1	144.65	144.65
6' straight artery forceps	2	3183.69	6367.38
7' straight artery forceps	2	1986.73	3973.46
Sims speculum - Large	1	3465.8	3465.8
Sims speculum - Medium	1	617.2	617.2
Wrigley's forceps	2	3824.18	7648.36
Kjeland's / simpson	2	400	800
Kidney tray	1	400.97	400.97
Green Armitage forceps	6	857.23	5143.38
T.W.Needle Holder	1	8190.38	8190.38
Mayo's curved scissor	1	272.92	272.92
Total cost of Forceps delivery set			47587.27

Forceps delivery sets for 300 delivery unit	4
Total cost for 4 forceps delivery sets	190349.08
Cost per year (Use full life of 5 years)	38069.82
Proportion of forceps delivery	1
Population in need per year	36
Cost of equipment per case of forceps delivery	1057.49

Annex 18

Estimated cost of cesarean section set

Item	Number	Price Unit	Total cost
Sponge holders	4	2554.07	10,216.28
Towel clips	4	697.79	2,791.16
B.P. Handle No.04	1	101.53	101.53
Tooth forceps	1	144.65	144.65
Non-tooth forceps	1	3549.44	3,549.44
Macindo non tooth	1	2391.17	2,391.17
Mayo's curved scissor	1	272.92	272.92
Dressing scissor	1	264.68	264.68
Umbilical scissor	1	4799.96	4,799.96
Moynihans tissue forcep	4	11647.02	46,588.08
Moynihans Artery 150mm forceps	6	7338.64	44,031.84
6' straight artery forceps	2	3183.69	6,367.38
7' straight artery forceps	6	1986.73	11,920.38
Green amitage forceps	4	857.23	3,428.92
T.W.Needle Holder	2	8190.38	16,380.76
Wrigley's forceps	1	3824.18	3,824.18
Baby sucker nozzle	2	10.4	20.80
Kidney tray	2	400.97	801.94
Doyens retractor	1	478	478.00
Czerny Retractor	1	689.84	689.84
Morris retractor	1	583	583.00
Stainless steel bowl	1	375.73	375.73
Scalpel blade (4)	1	12.65	12.65
Total cost of CS set			160,035.29

There should be 3 sets per one CS per day per institution	
Prevalence of LSCS	33.8
CS per 300 deliveries (per month)	101.4
CS Per day	3.38
CS Per year	1216.8
CS sets per 300 delivery unit	10
Cost for 10 CS sets	1,600,352.90
Cost per year (Use full life 5 years)	320,070.58
Instrument cost per one LSCS	263.04

Annex 19

Calculation of average salary (Including extra duty) for healthcare staff

Data Inputs	Value	
Average salary - Doctor (Per month)	LKR	129,751
Average Number of working hours per month - Doctor		200
Average salary - Doctor (Per hour)	LKR	649
Average salary - Nursing Officers (Per month)	LKR	53,760
Average Number of working hours per month - Nurse		200
Average salary - Nursing Officers (Per hour)	LKR	269
Average salary - Midwife (Per month)	LKR	53,084
Average Number of working hours per month - Midwife		200
Average salary - Midwife (Per hour)	LKR	265
Average salary - SKS (Per month)	LKR	46,530
Average Number of working hours per month - SKS		250
Average salary - SKS (Per hour)	LKR	186

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