

Supplementary Materials:

Table S1. Mean score of basic emergency obstetric and newborn care service availability

Mean score of service availability	Years			p for trend*
	2014	2016	2018	
Service availability				
Obstetric signal functions				
Parenteral administration of antibiotics for mothers (%)	88.7	91.8	85.7	0.008
Parenteral administration of oxytocic drugs (%)	90.2	87.5	88.8	0.41
Parenteral administration of anticonvulsants (%)	21.9	29.3	38.9	<0.001
Assisted vaginal delivery (%)	99.8	99.1	96.1	<0.001
Manual removal of placenta (%)	80.7	81.1	84.8	<0.15
Manual removal of retained products (%)	16.9	20.5	39.4	<0.001
Mean availability of obstetric signal functions offered	66.3	68.2	72.3	<0.001
Newborn signal functions				
Antibiotics for preterm or prolonged PROM to prevent infection (%)	66.3	83.4	74.5	<0.001
Neonatal resuscitation with bag and mask (%)	33.2	38.8	53.0	<0.001
Corticosteroids in preterm labour (%)	15.9	21.0	23.1	0.009
KMC (Kangaroo mother care) for premature/very small babies (%)	58.6	69.9	71.9	<0.001
Injectable antibiotics for neonatal sepsis (%)	46.9	47.9	50.9	0.37
Mean availability of newborn signal functions offered	44.2	52.2	54.7	<0.001
Routines practices (perinatal)				
Administration of oxytocin for the prevention of postpartum haemorrhage (%)	98.7	99.3	97.6	0.05
Monitoring and management of labour using partograph (%)	96.4	96.1	93.5	0.04
Immediate and exclusive breastfeeding (%)	99.7	99.9	99.1	0.01
Hygienic cord care (%)	99.8	99.7	98.9	0.07
Thermal protection (drying baby immediately after birth and wrapping) (%)	99.3	98.6	99.3	0.34
Mean availability of routines practices	98.8	98.7	97.7	0.03
Mean availability	69.8	73.1	74.9	<0.001

*Unadjusted p trend

Table S2. Domain score and readiness index for basic emergency obstetric and newborn care

Domain and readiness index	Years			p for trend*
	2014	2016	2018	
Staff and training				
Guidelines for essential childbirth care (%)	84.5	53.0	34.3	<0.001
Check-lists and/or job-aids for essential childbirth care (%)	98.6	97.4	96.5	<0.001
Staff trained in essential childbirth care (%)	62.2	53.1	41.8	<0.001
Staff trained in newborn resuscitation (%)	42.9	46.0	42.4	0.64
Mean domain score (%)	72.1	62.4	53.7	<0.001
Equipment				
Emergency transport (%)	95.8	92.3	88.1	<0.001
Sterilization equipment (%)	23.4	19.8	34.9	<0.001
Examination light (%)	60.6	58.2	53.1	<0.001
Delivery pack (%)	98.7	69.4	97.7	0.64
Suction apparatus (mucus extractor) (%)	5.9	7.9	17.8	<0.001
Manual vacuum extractor (%)	8.6	6.6	19.7	<0.001
Vacuum aspirator or D&C kit (with speculum) (%)	28.0	25.6	36.9	<0.001
Neonatal bag and mask (%)	24.5	33.9	46.5	<0.001
Delivery bed (%)	96.9	96.9	95.2	0.004
Partograph (%)	97.3	95.4	91.1	<0.001
Gloves (%)	97.9	93.8	92.9	<0.001
Infant weighting scale (%)	82.9	77.7	73.9	<0.001
Blood pressure apparatus (%)	97.6	98.0	97.2	0.45
Soap and running water OR alcohol based hand rub (%)	96.8	93.8	95.7	0.14
Mean domain score (%)	65.3	62.1	67.2	0.89
Medicines and commodities				
Antibiotic eye ointment for newborn (%)	35.9	24.9	23.4	<0.001
Injectable uterotonic (%)	66.1	60.5	50.7	<0.001
Injectable antibiotic (%)	93.9	93.4	88.1	<0.001
Magnesium sulphate (injectable) (%)	13.3	17.7	21.3	<0.001
Skin disinfectant (%)	59.4	53.9	50.9	<0.001
Intravenous solution with infusion set (%)	51.4	38.9	43.6	<0.001
Mean domain score (%)	53.3	48.2	46.3	<0.001
Average readiness index (%)	63.6	57.6	55.8	<0.001

*Unadjusted p trend

Table S3. Availability, domain score and readiness index for comprehensive emergency obstetric care

Tracers indicators	Years			p for trend*
	2014	2016	2018	
Tertiary and secondary level health facilities	107 (100.0)	110 (100.0)	141 (100.0)	
Service availability				
Caesarean section (%)	64.5	61.4	55.9	0.06
Blood transfusion (%)	67.3	60.7	50.2	<0.001
Comprehensive emergency obstetric care (%)	55.1	48.0	45.7	0.08
Service readiness				
Staff and training				
Guidelines for CEmOC (%)	47.7	22.5	17.0	<0.001
Staff trained in CEmOC (%)	59.8	37.1	26.6	<0.001
Staff trained in surgery (%)	77.6	71.5	71.8	0.29
Staff trained in anaesthesia (%)	70.1	68.6	64.4	0.19
Mean domain score (%)	63.8	49.9	44.9	0.001
Equipment				
Anaesthesia equipment (%)	9.4	9.0	11.3	0.42
Resuscitation table (%)	46.7	32.2	44.5	0.60
Incubator (%)	35.5	37.9	33.9	0.57
Oxygen (%)	66.4	66.0	59.8	0.12
Spinal needle (%)	67.3	61.5	52.8	0.002
Mean domain score (%)	45.0	41.3	40.5	0.50
Diagnostics				
Blood typing (%)	73.8	74.8	70.9	<0.06
Cross match testing (%)	14.9	15.5	15.4	0.91
Mean domain score	44.4	45.2	43.2	0.87
Medicines and commodities				
Blood supply sufficiency (%)	29.9	20.3	22.2	0.18
Blood supply safety (%)	71.9	70.2	48.8	<0.001
Lidocaine 5% (%)	36.5	15.5	19.5	0.002
Epinephrine (injectable) (%)	57.9	48.1	48.4	0.12
Halothane (inhalation) (%)	58.9	50.8	49.3	<0.09
Atropine (injectable) (%)	67.3	59.6	54.3	<0.01
Thiopental (powder) (%)	49.5	24.6	29.0	0.001
Suxamethonium bromide (powder) (%)	18.7	8.9	15.7	0.97
Ketamine (injectable) (%)	72.9	61.4	53.9	0.002
Mean domain score (%)	51.5	39.9	37.9	0.005
Average readiness index (%)	51.2	44.1	41.6	0.02

*Unadjusted p trend