

Neonatal health in India

Refresher Tablet

- Neonatal period/neonate/newborn – first 28 days of life
- Perinatal period – 22 weeks of gestation to 7 days after birth
- Early Neonate –birth to first 7 days of life
- Late Neonate –after 7 days – 28 days of life
- Term – baby born after 37 completed weeks upto 42 completed weeks of gestation
- Preterm – baby born before 37 completed weeks of gestation
- Post-term – baby born after 42 completed weeks of gestation
- Normal birth weight (NBW) :2500-3999 g
- Low birth weight (LBW) : <2500 g
- Very low birth weight (VLBW) : <1500 g

Size of Problem

- More than **10 million children die** each year from preventable diseases. 27,000 deaths per day.
- About **6 million children die** per year worldwide, aged 1 month to 5 years
- About **4 million newborn die** in first month of life (40 % of all child deaths).

MDG 4 calls for a two third reduction in death rates for children under age of 5 by 2015 and almost 40 percent of these deaths occur in neonatal period

Where do the neonates die (1)

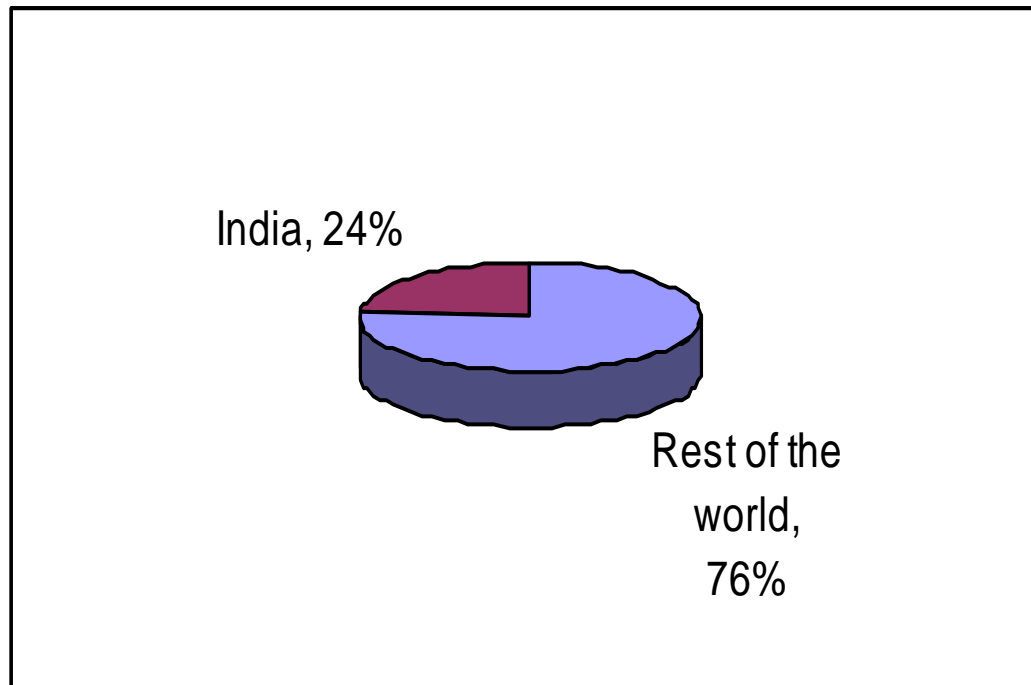
Neonatal mortality rate (per 1,000 live births)

Region	1990	1995	2000	2005	2010	2011	Decline 1990- 2011 (%)
Sub-Saharan Africa	45	44	42	38	35	34	24
Eastern and Southern Africa	43	41	38	34	30	29	32
West and Central Africa	48	47	46	43	40	39	18
Middle East and North Africa	27	24	21	19	17	16	39
South Asia	48	44	40	36	33	32	33
East Asia and Pacific	24	22	19	15	12	11	54
Latin America and Caribbean	22	19	16	13	10	10	55
CEE/CIS	19	18	15	12	10	10	50
World	32	31	28	25	22	22	32

Where do the neonates die (2)

Neonatal Deaths: India Vs Rest of the World

(More than 100 neonatal deaths in one hour)



Where do neonates die (3)

India:

Total births - 26 million (2.6 crore)

(World Rank No. 1)

Neonatal deaths - 0.94 million (9.4 lakh)

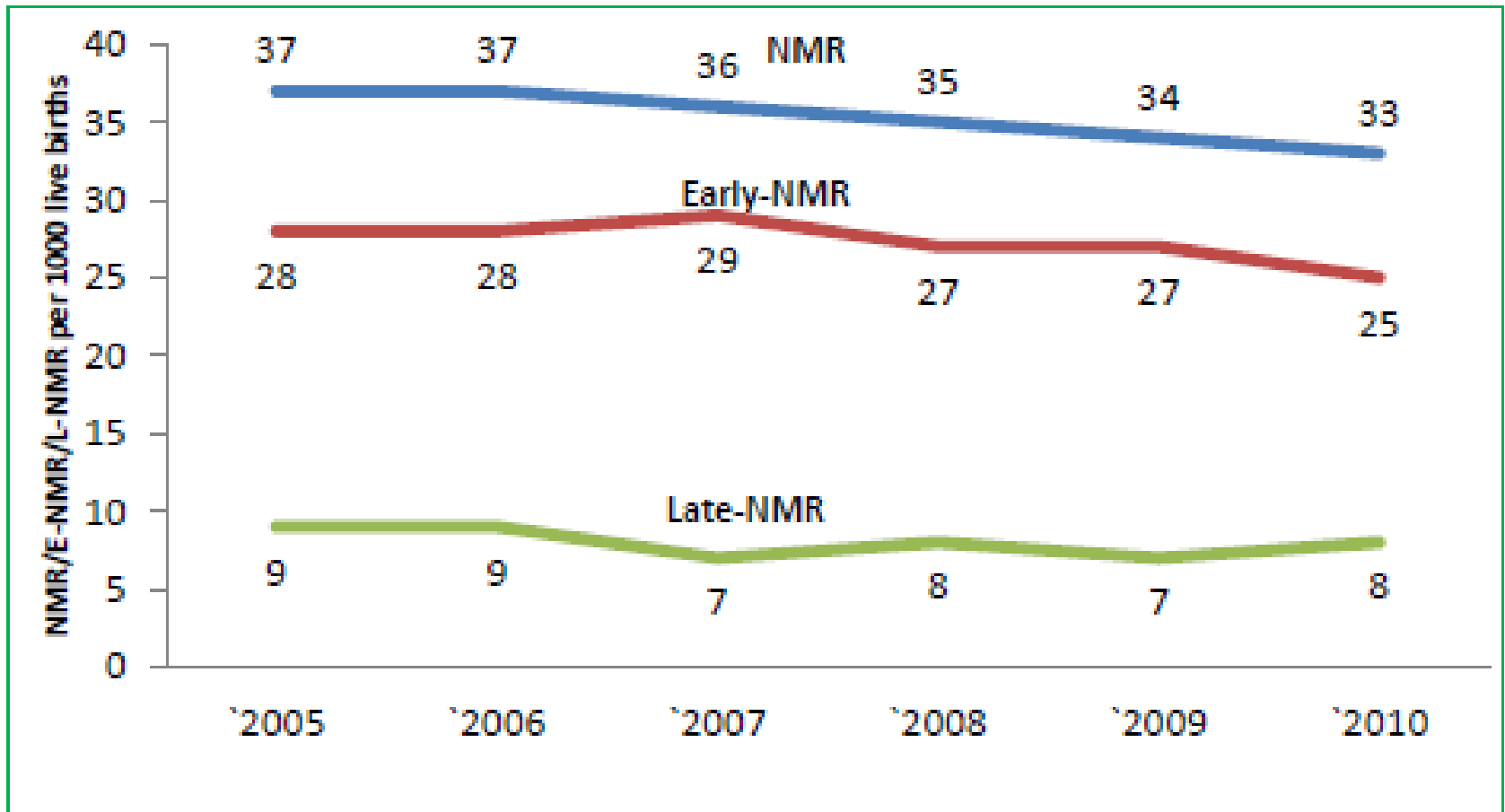
(World Rank No. 1)

	Total	Rural	Urban
Neonatal Mortality rate (0-28 days)	36	40	22
Early Neonatal Mortality Rate (0- 7days)	28	32	16
Late Neonatal Mortality Rate (7-28 days)	8	8	6
Perinatal Mortality Rate	37	41	24

Source: Census 2001 and SRS statistical report 2008

Where do neonates die (4)

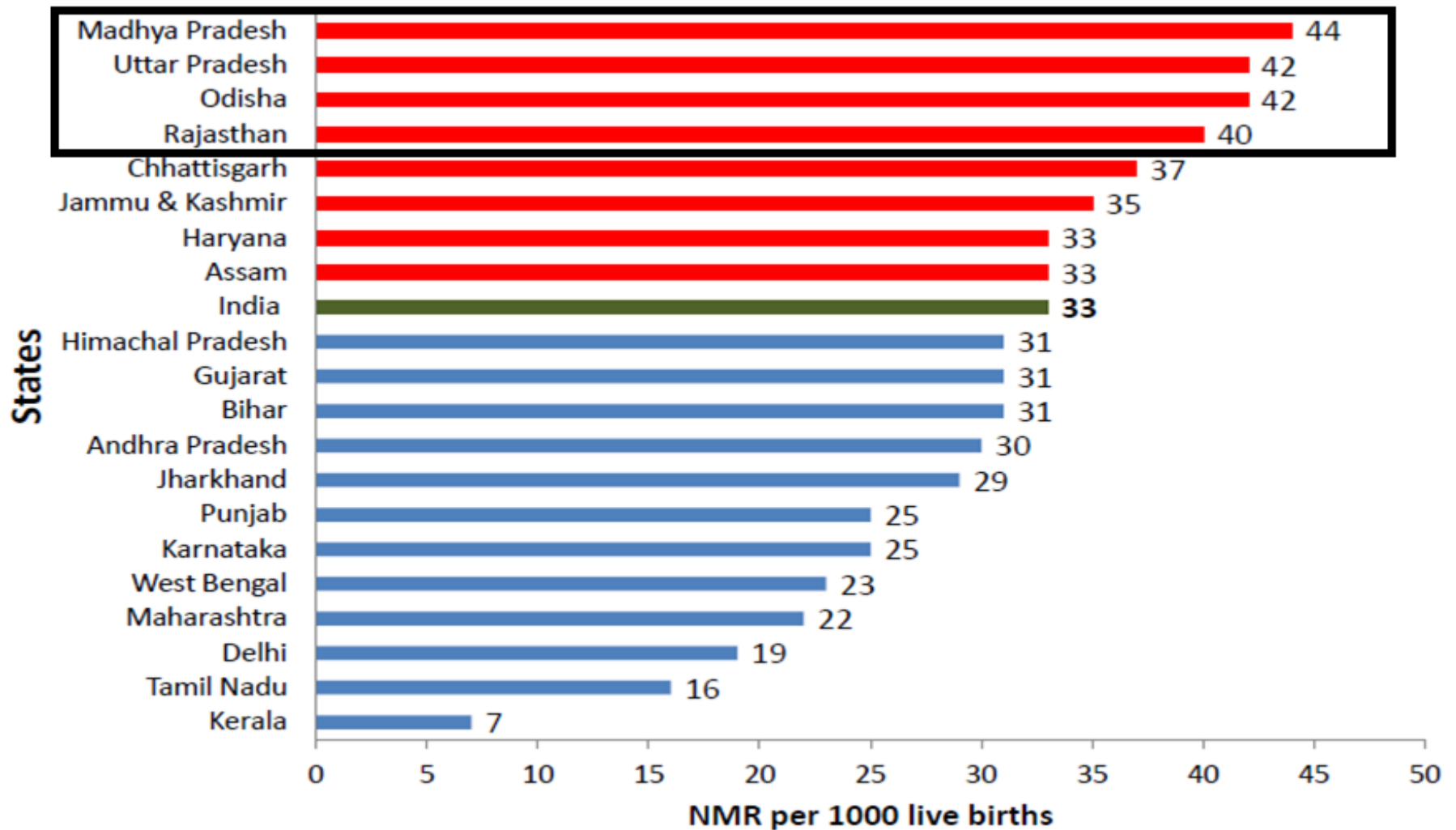
Trends in Neonatal mortality in India



- *NMR accounts for 70% of IMR and 56% of under-five mortality rate*
- *There is a wide state variation and rural-urban differentials in NMR*

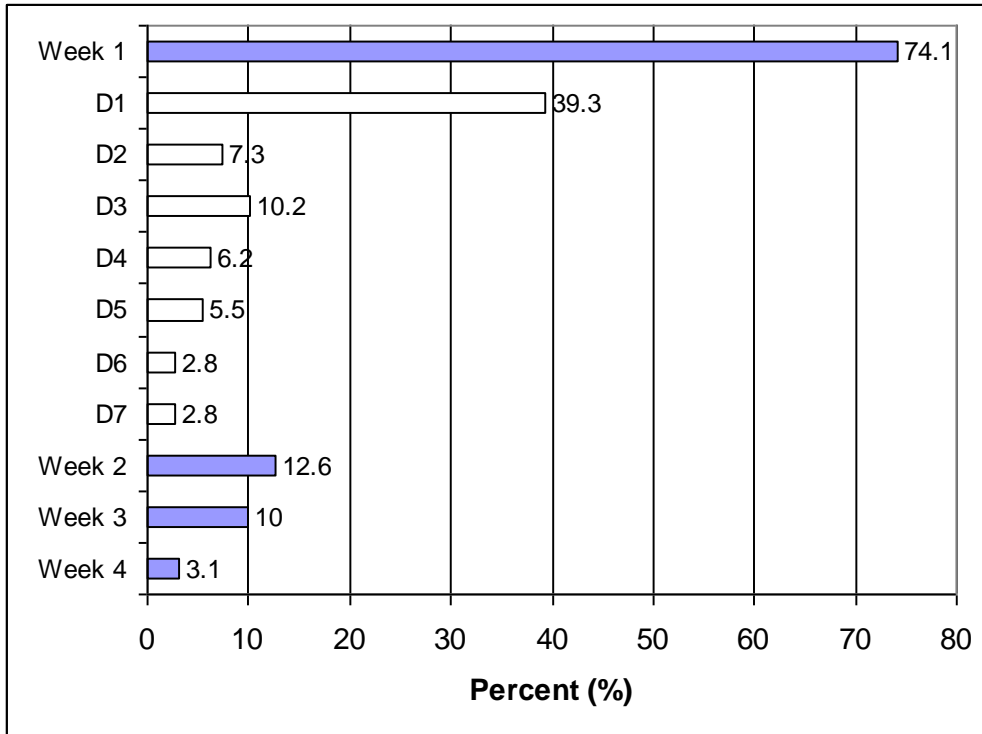
Where do neonates die (5)

Statewise variation in NMR (SRS 2010)



When do neonates die

First 28 Days- Critical period for Newborns
(Maximum deaths in first 28 days)

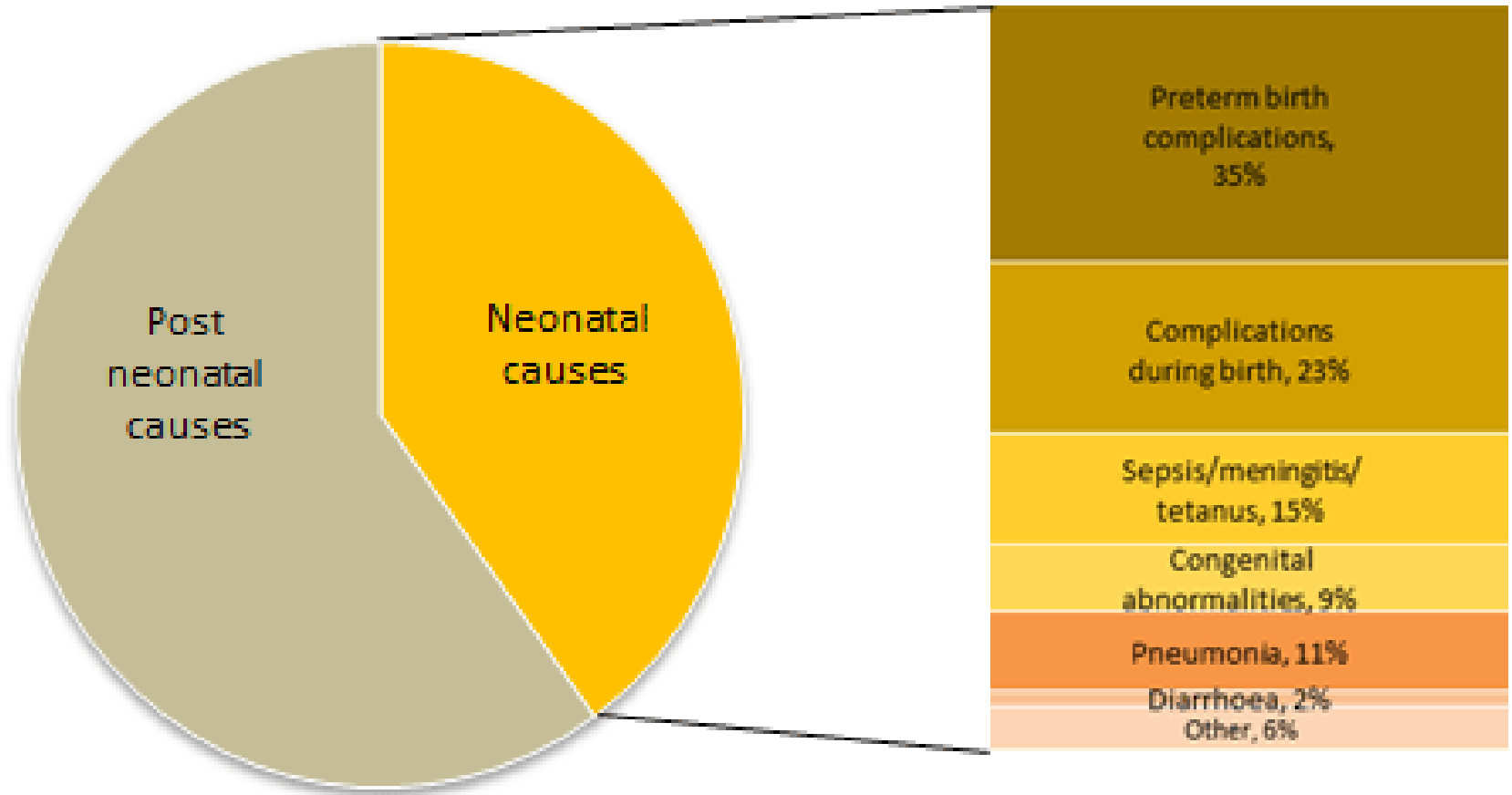


Day	% U5 deaths
1st day	20
By 3rd day	25
By 7th day	37
By 28th day	50

Nearly 3/4th of neonatal deaths occur within 7 days, mostly during first 24 hours

Why do the neonates die

Distribution of causes of death during the neonatal period %



Childbirth practices in rural Rajasthan: Implication on neonatal health and survival

Delivery Practices	Perception behind practices	Process adopted	Neonatal health outcomes
Frequent Vaginal examinations	<ol style="list-style-type: none"> 1. Assess progress of labor 2. Opening up of birth passage 	<ol style="list-style-type: none"> 1. Frequent vaginal examination ranging from 1 to 28 number were carried out by more than one birth attendant 2. Frequency increased when TBA perceived that labor contractions are weakening . 	Most women delivered fresh still births
Fundal pressure	Reinforce women efforts at bearing down and ease the process of child delivery	<ol style="list-style-type: none"> 1. Most common position of applying fundal pressure is attendant sitting behind women seated on floor with hands encircling her abdomen 2. Fundal pressure often applied in rapid pulses between 50 to 185 times during each delivery 	Baby comes out with force and often asphyxiated and sustains birth trauma. Sometimes placenta ejected simultaneously with baby
Augmentation of labor	Women don't work hard-so unable to generate sufficient strength to deliver child	<ol style="list-style-type: none"> 1. Injections and drips used (Mostly oxytocin and valetamate bromide) 2. In home deliveries TBA or relatives invited modern providers to give injections 3. Number and timings mostly decided by modern providers 	Fetal distress and birth asphyxia are common

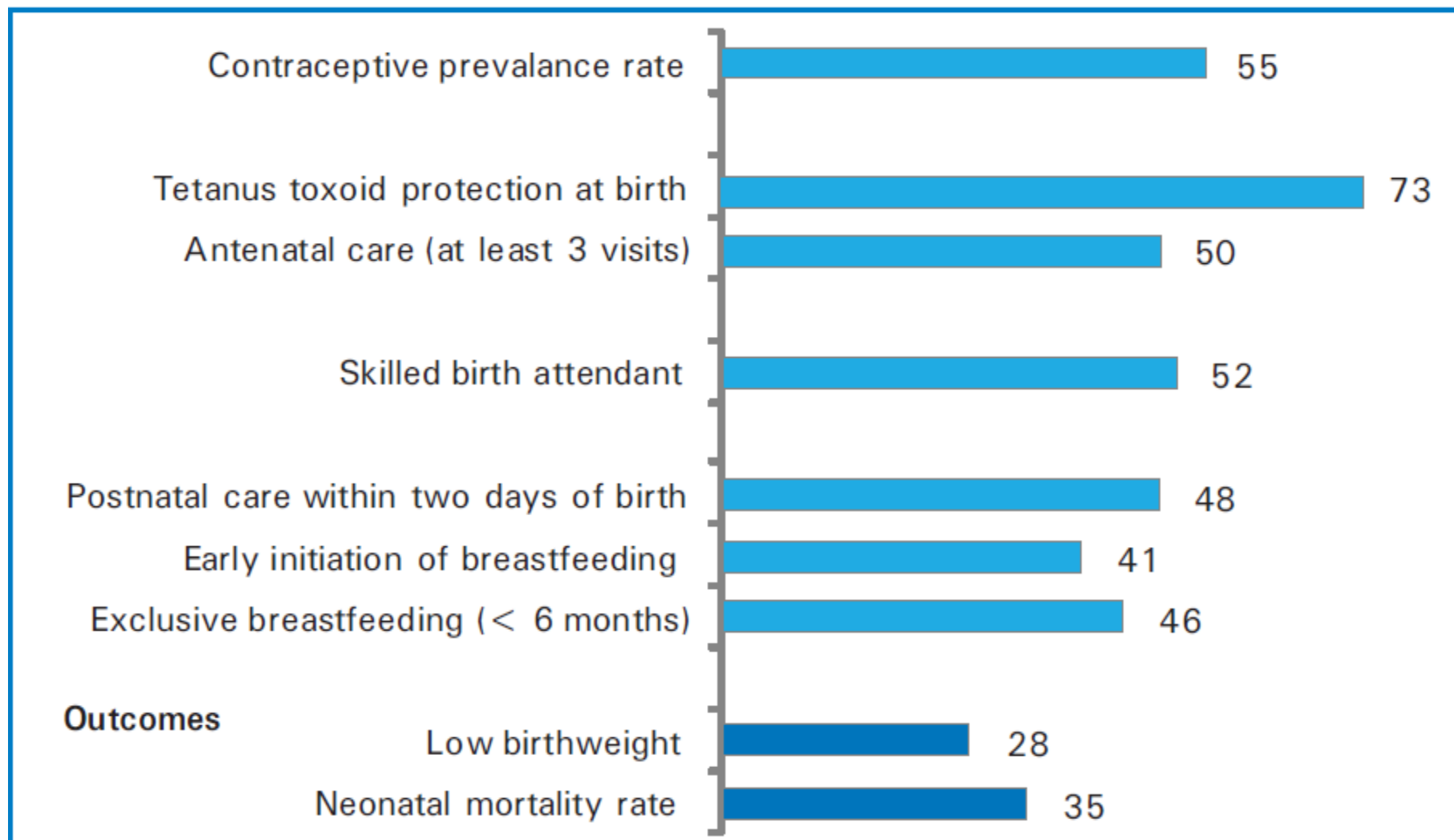
Approaches for neonatal survival (1)

Key interventions to reduce neonatal mortality

STAGE	INTERVENTION
Preconception	Folic acid supplementation
	Family planning
	Prevention and management of sexually transmitted diseases including HIV
Antenatal	Syphilis screening and treatment
	Pre-eclampsia and eclampsia prevention
	Tetanus toxoid immunization
	Intermittent preventive treatment for malaria
	Detection and treatment of asymptomatic bacterium
Intrapartum (birth)	Antibiotics for preterm rupture of membranes
	Corticosteroids for preterm labour
	Detection and management of breech
	Labour surveillance for early diagnosis of complications
	Clean delivery practices
Postnatal	Resuscitation of newborn baby
	Breastfeeding
	Prevention and management of hypothermia
	Kangaroo mother care (for infants with low birthweight) in health facilities
	Community-based case management of pneumonia

Approaches for neonatal survival (2)

Coverage of key interventions to reduce neonatal mortality



Approaches for neonatal survival (3)

Community based interventions

Study	Design	Home Visits for newborn care on	Other Interventions	Neonatal deaths reduction
SEARCH, India	One intervention, one control	Days 1, 2, 3, 5, 7, 14, 21 and 28	Care at birth, treatment of newborn infections by village worker, extra care for LBW, community mobilization activities	61%
Ankur, India	Before after	Same as SEARCH	Care at birth, treatment of newborn infections by village worker, extra care of LBW, community mobilization activities	51%
Sylhet, Bangladesh	Cluster randomized Trial	Days 1, 3 and 7	Treatment of sepsis by village health worker, community mobilization activities, health facility strengthening	34%
Shivgarh, India	Cluster Randomized Trial	Days 1 and 3	Birth preparedness, hygienic delivery, skin to skin care for all babies, community mobilization activities	53%
Hala, Pakistan	4 Vs 4 clusters, non random	Days 1, 3, 7, 14 and 28	Care at birth, extra care for LBW, community mobilization activities	30%
Ekjut, India	Cluster randomized trial		Participatory action and learning for women by a facilitator on strategies to address maternal and newborn health problems	32%
Case India	Randomized control trial		Community based intervention by utilizing existing government infrastructure, Health education through home visits by ANM and Anganwadi workers	
Bangladesh, (by Azad)	Two trials with a factorial design		Participatory women's groups and health services strengthening to improve maternal and neonatal health outcomes, TBA training on bag and mask resuscitation of newborns with asphyxia	Higher still births and neonatal deaths in control clusters

Approaches for neonatal survival (4)

Government programmes

Reproductive and Child Health – II (2005-10)

- IMNCI: Community & facility
- Skilled care at birth
- Essential newborn care for health professionals
- Home based newborn care
- Up gradation of health facilities

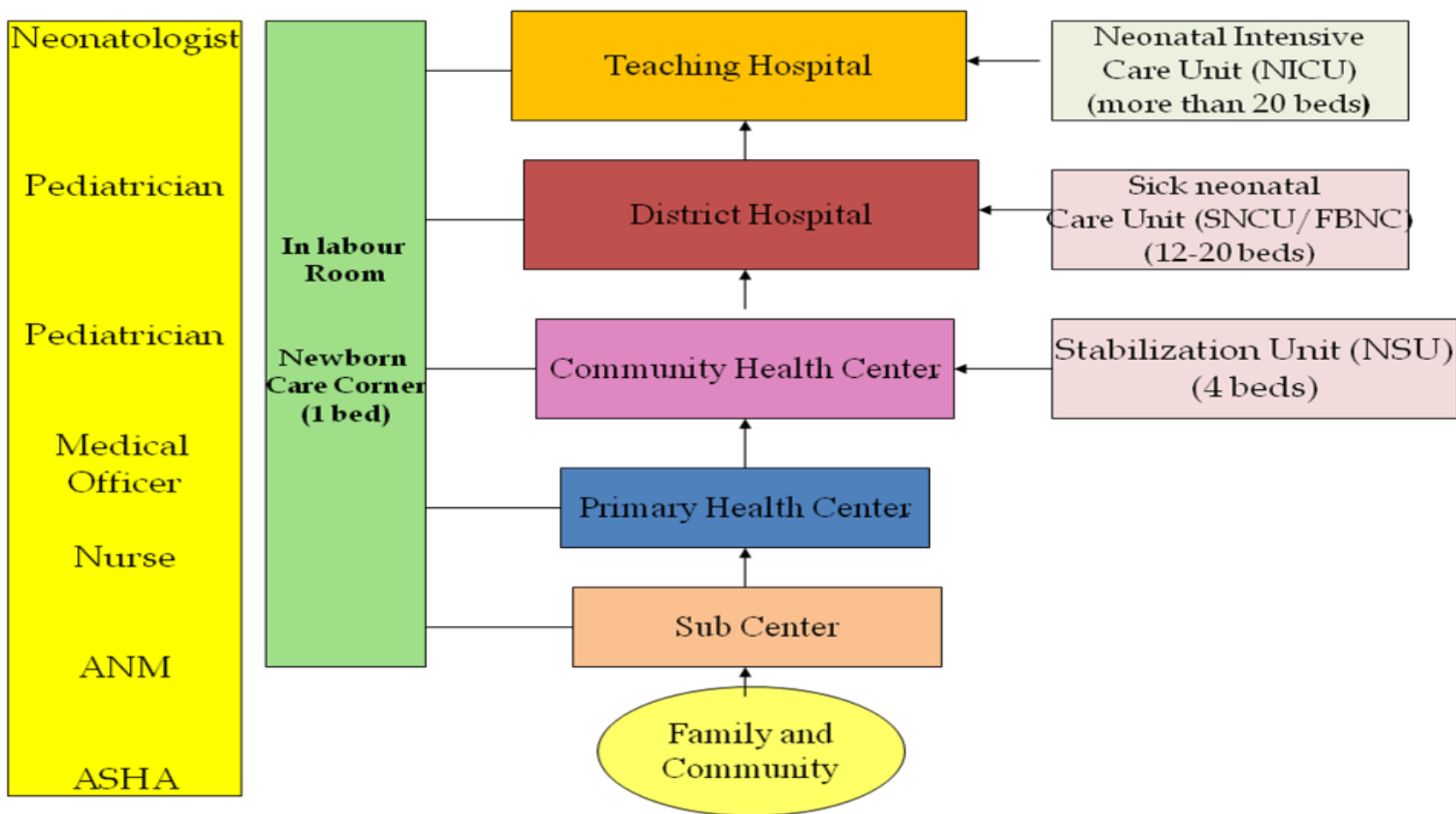
National Rural Health Mission (NRHM)

- ASHAs in each village to improve maternal and child health services
- Strengthening of health facilities
- Creation of SCNUs
- *Janani Suraksha Yojana (JSY)*: To promote institutional deliveries

Approaches for neonatal survival (5)

Facility based interventions

Levels of Neonatal Care in India



Neonatal care

Essential newborn care

- Care at birth to all newborns delivered at health facility
- Setting up of newborn care corners at all delivery points (LR+OT)
- Training of health personnel in NSSK and SBA
- Currently 11458 NBCCs functional (estimated number of delivery points: 18,181)

Sick newborn care

- Care to estimated 10% newborns, free entitlements under JSSK
- Setting up Newborn Stabilization units at FRUs; & special newborn care units at district hospitals
- FIMNCI and FBNC (4+14) training for the caregivers
- Currently 1674 NBSUs and 395 SNCUs functional across the country

Home based newborn care

- 6 visits in 42 days in case of institutional delivery, 7 visits in home deliveries
- Provision of incentive for home visits by ASHAs
- Filling information in MCP card & ensuring immunization (BCGO & birth registration)
- Training of ASHAs in IMNCI plus

Importance of NBSUs

- NBSUs expand the reach of special newborn care within a district, beyond the district hospital

If properly linked to SNCU and NBCC then:

- Reduces delay in initiation of appropriate care (delay in reaching SNCU from a distant area) for sick newborns and improves outcomes
- Helps in stabilizing sick newborns before referral to higher centre
- Prevent overloading of SNCUs at the district hospital
- Reduce the cost of care

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(Promoting neonatal survival in Rajasthan)

- The project is implemented by Department of Medical, Health and Family welfare in collaboration with ARTH, WHO and UNICEF
- Aim is to study the impact on neonatal mortality rate by promoting referral of newborns with danger signs and strengthening first level facilities for improved management of labor, essential newborn care and management of severely ill newborns
- 8 Intervention and 8 Control clusters selected through off-site randomization at WHO, Geneva

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Intervention area

1. Abu Road, Sirohi
2. Choti Sadri, Pratapgarh
3. Chota Dungra, Banswara
4. Devgarh, Rajsamand
5. Ganoda, Banswara
6. Gangapur, Bhilwara
7. Kapasan, Chittogarh
8. Partapur, Banswara



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Intervention

- Establish a 24*7 helpline service to refer sick newborns to CHCs for treatment
- Training of ASHAs in the intervention area to recognize danger signs
- Mobilize families to seek treatment and use helpline for sick newborn
- Establish Newborn Stabilization Units (NBSUs) at CHCs (infrastructure, equipment, supplies and staff training for routine and sick newborn care)
- Improve MIS to capture information on services provided

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CHC strengthening on newborn care

- 5 facility assessments of 8 intervention CHCs on neonatal care facilities have been conducted (assessments conducted based on Indian public health standards guidelines 2010)
- Dissemination of CHC assessment results and liaison with government health officials at district and state levels
- Establishment of Newborn Stabilization Units (NBSU)
- Clinical training of CHC staff (3 batches, supported by UNICEF)

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Major Findings - NBSU

Infrastructure

- Functioning equipments in place at most CHCs
- 24*7 water and electricity mostly available
- Floor area and civil structure as per guidelines in most of places

Human resource

- Major bottleneck in getting the unit operational and sustaining it
- No designated manpower at NBSUs

Trainings

- Huge training need
- Only 50% of the CHC staff could be trained in 3 batches of which only 36% are available to provide services due to transfers of staff

Drugs and Equipments

- Most of the drugs available at all facilities
- Irregularity in supply of drugs from RMSC
- Inventory management lacking at facilities

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Major Findings - NBSU

Service Utilization

- less clarity in admission and referral criteria at NBSU
- Mostly underutilized in terms of admissions and duration of stay

Record Keeping

- Very basic and irregular record keeping as well as reporting

Referral

- Free referral transport available under various national/state schemes
- Minimal referral linkage or communication system

Assessment of clinical practices

- Incorrect practices-over use of IV fluids and antibiotics
- Gaps between knowledge and practices in neo-natal care skills
- No SOP followed

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Major Findings – Essential Newborn care

Labor room conditions

- Inadequate aseptic mechanisms
- Irregular infection control systems
- Poor infrastructure
- Negligent attitude towards privacy of patients
- Unclean toilets
- Personnel not clear on essential newborn care practices

Postnatal wards

- Overcrowded and neglected zone
- Same staff to manage PN ward, LR and NBCC
- BCC practices not done due to lack of time
- Discharge before 48 hrs in most places
- Discharge advice inadequate

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Major Findings – Essential Newborn care

Newborn care corner

- Structural area rather than functional area
- Radiant warmer & resuscitation kits mostly available and in working condition
- Incorrect use of equipment
- Irregularities in sepsis and housekeeping protocols
- Skills practiced to provide essential newborn care are lacking at most of the facilities

Conclusion

- Systems need strengthening
- Strengthen existing NBSUs with manpower for optimum utilization
- Quality of care is major issue
- Functional NBSUs would share the overcrowding of SNCUs
- Individual efforts at certain facilities are laudable.