



Rapid Improvement Cycles for Improving Newborn Health Outcomes

Why Improving Newborn Outcome is Important?

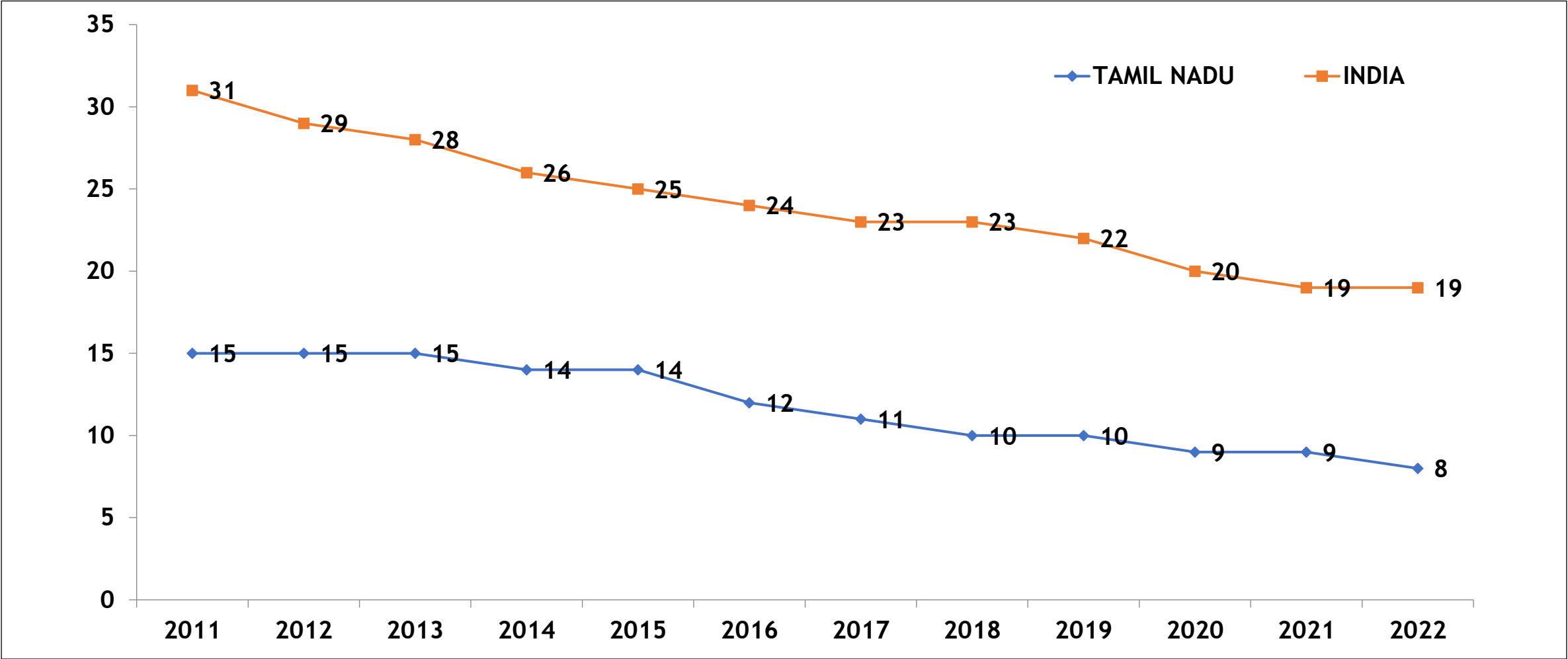
- Every year 0.7 million newborns die in India
- Most deaths occur within the first 28 days, especially the first 24 hours.
- India has committed to **SDG 3.2** → reduce NMR to ≤ 12 by 2030.
- Also aligns with India's **RMNCH+A strategy**, **LaQshya program**, and **National Health Policy goals**.



ENSURE HEALTHY LIVES AND PROMOTE
WELL-BEING FOR ALL AT ALL AGES

SDG Target 3.2 | Newborn and child mortality: By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality and under-5 mortality

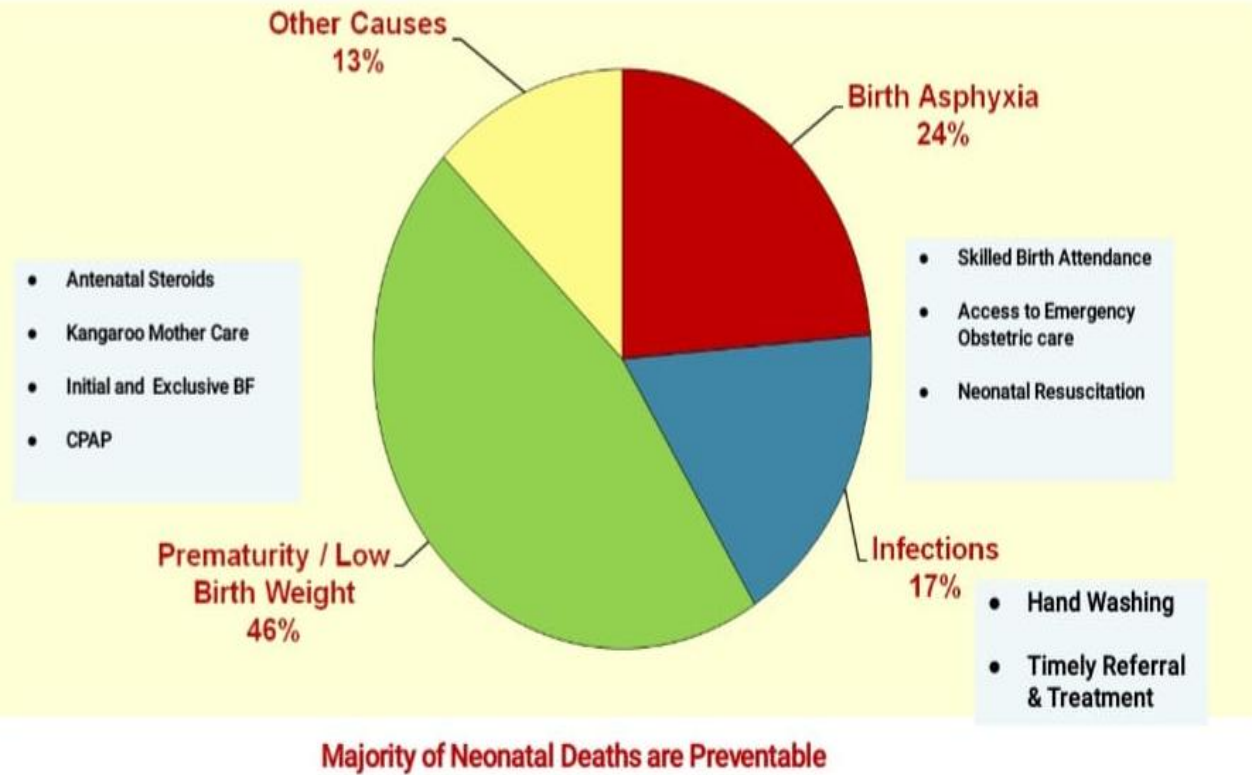
Neonatal Mortality Rate



SOURCE : SRS 2022

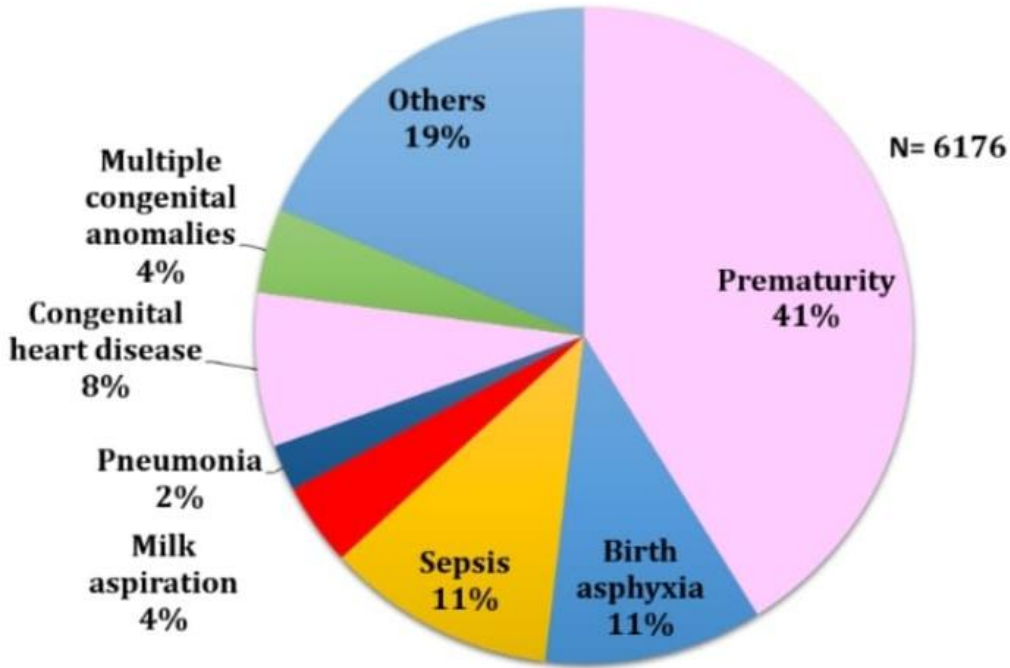
Leading causes of Newborn Death

all preventable with simple, timely interventions



India

Infant Cause of Death - Apr'24-Mar'25



Tamil Nadu

Key Challenges in Newborn Care

Clinical Challenges

- Prematurity & Low Birth Weight
- Birth Asphyxia (delayed resuscitation)
- Neonatal Sepsis & Infections
- Congenital Anomalies (late diagnosis, limited care)
- Nutrition & Breastfeeding Issues
- Limited Skilled Workforce

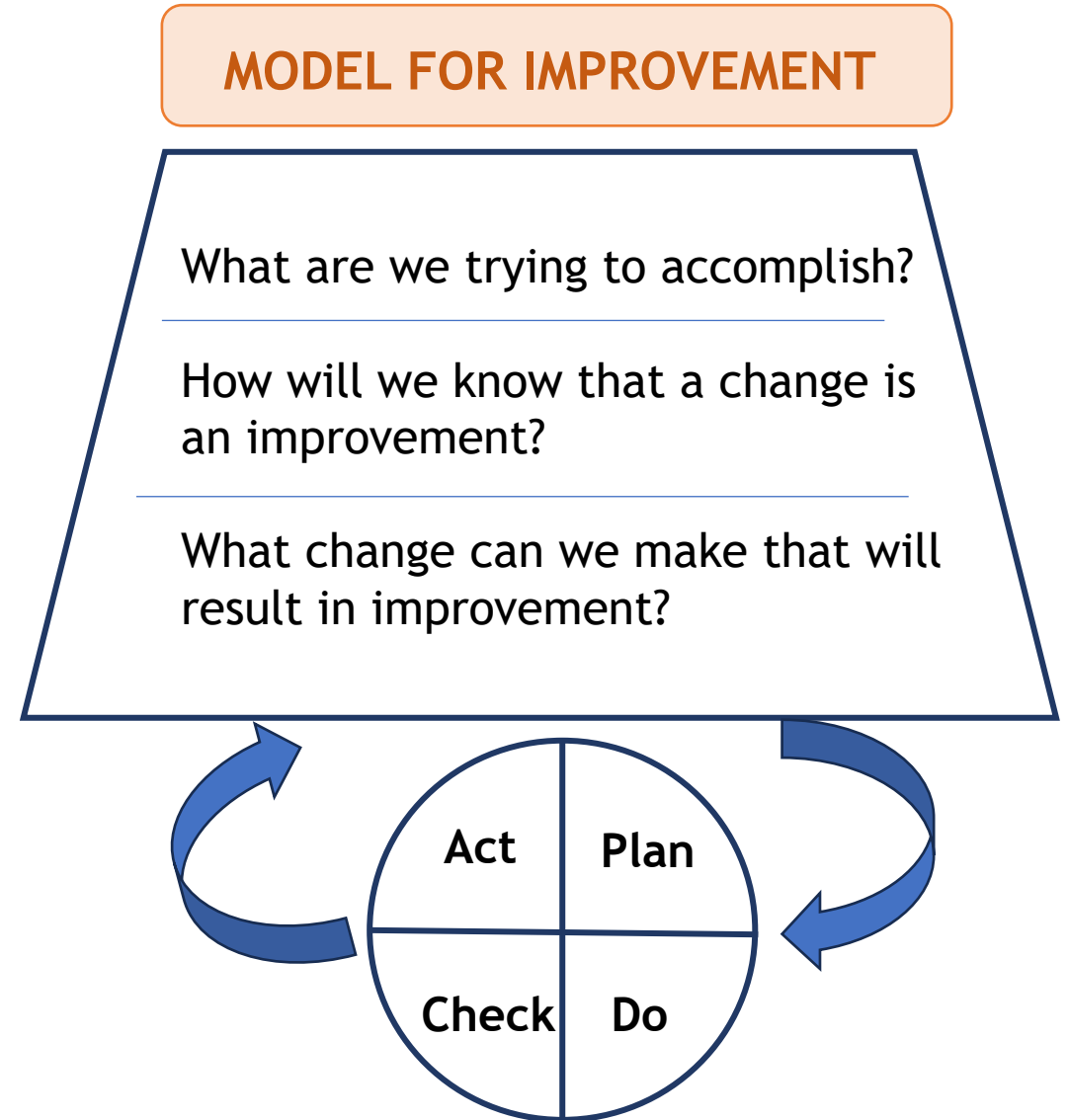
Administrative Challenges

- Infrastructure gaps (NICU/SNCU, equipment)
- Manpower shortages vs. high patient load
- Supply chain issues (drugs, oxygen, consumables)
- Weak data & real-time monitoring systems
- Gaps in referral pathways
- Financial constraints for QI activities

What is a Rapid Improvement Cycle?

Rapid-cycle improvement is a “Quality improvement method that identifies, implements and measures changes made to improve a process or a system.”

Rapid Improvement cycles are conducted using a multipronged approach. Each RI cycle includes use of observation checklist, review of case records and interview with facility staff, simulation drills, onsite need-based mentoring.



SIX RAPID IMPROVEMENT CYCLES

1

Real-time Partograph generation, usage of safe birth & surgical safety check-list and strengthening documentation practices for generating robust data for driving improvement

2

Presence of birth companion during delivery, Respectful Maternity Care and enhancement of patients' satisfaction

3

Assessment, triage and timely management of complications including strengthening of referral protocols

4

Management of Labour as per protocols including Active Management of Third Stage of Labour (AMTSL) & rational use of Oxytocin

5

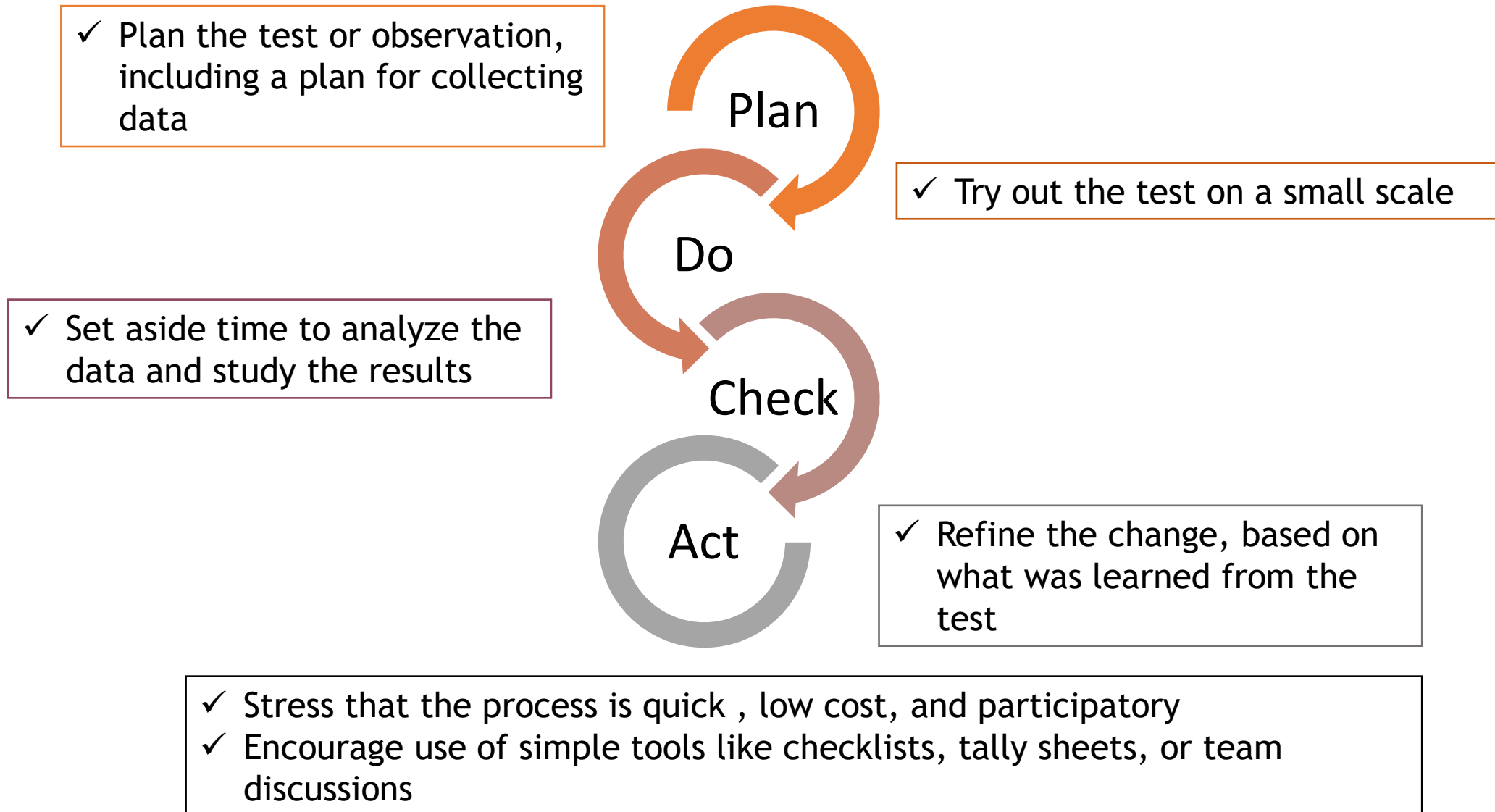
Essential and emergency care of newborn & pre-term babies including management of birth asphyxia, timely initiation of breast feeding as well as Kangaroo Mother Care (KMC) for pre-term newborn

6

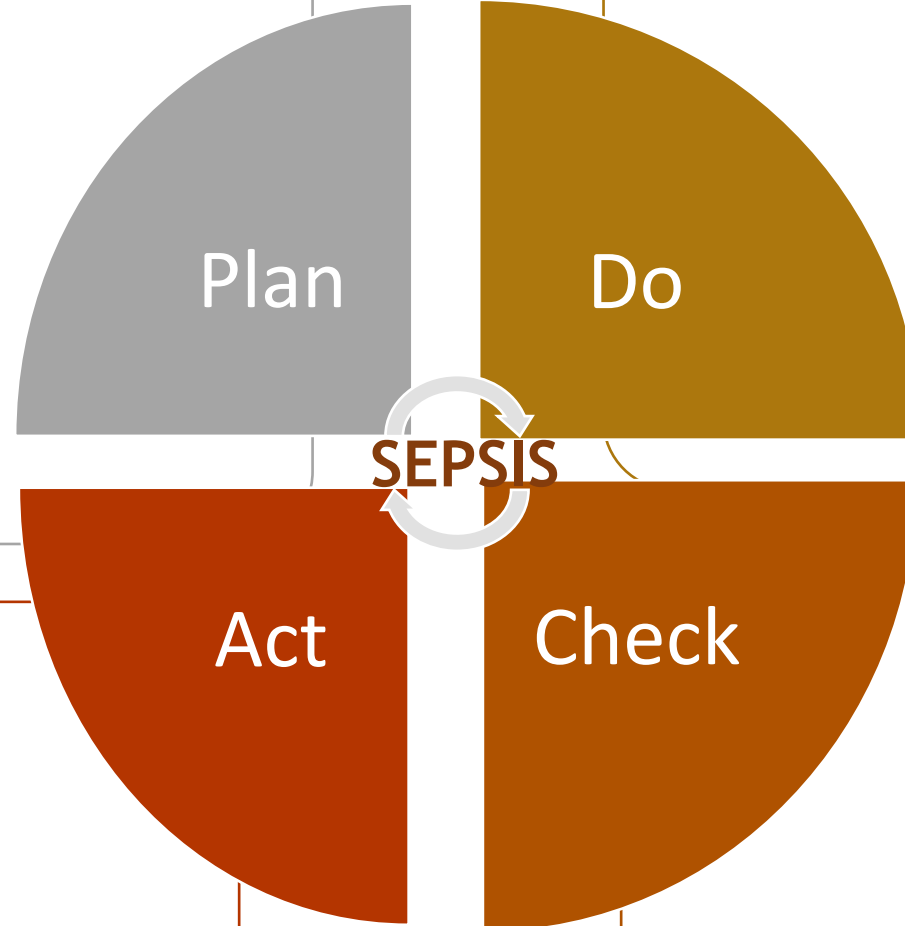
Infection Prevention including Biomedical Waste Management

QI Cycles (6)- 24 Contacts Duration-12 months

Approach for Rapid Improvement Cycle



- Identify problem: High number of neonatal deaths due to sepsis
- Do Root cause analysis
- Intrapartum Antibiotic Protocol for Asymptomatic Mother
- Train staff on asepsis
- Standardize antibiotic use
- Measure outcomes



- Pilot antibiotic protocol
- Collect data on sepsis cases
- Provide adequate supply of PPE, hand wash etc.
- Conduct orientation for staff on sepsis prevention.
- Regularly monitor equipment cleaning checklist

- Conduct regular infection control practice audit
- Update infection control policy if effective

- Check incidence rate
- Monitor hand hygiene audit compliance
- Check Antibiotic usages

- Identify problem: High number of neonatal deaths due to Neonatal asphyxia
- Do Root cause analysis
- Train delivery room staff in neonatal resuscitation (e.g., Helping Babies Breathe protocol).
- Ensure availability and readiness of resuscitation equipment (bag & mask, suction devices, oxygen)
- Establish a “Golden Minute” response protocol.

Plan

Do

- Conduct mock drills and hands-on training for delivery staff.
- Check and prepare resuscitation equipment before every delivery.
- Pilot use of a standardized checklist for readiness in the labor room.

BIRTH ASPHYXIA

Act

Check

- Scale up the neonatal resuscitation training and make checklist mandatory (if successful)
- Revise training, reinforce drills, ensure backup equipments
- Reassess the gaps and design alternative interventions

- Monitor and record time from birth to initiation of resuscitation.
- Review survival outcomes of asphyxiated neonates.
- Assess staff performance and confidence during real cases.
- Identify barriers (e.g., equipment not ready, delayed response, inadequate skills).

- To reduce incidence and improve survival of preterm babies.
- Ensure persistent prenatal care, balanced diet, optimum weight gain.
- Control/treat infections and manage comorbidities.
- Provide antenatal corticosteroids for threatened preterm labor.
- Manage anatomical risks (e.g., short cervix).
- For preterm neonates: early CPAP, surfactant, infection control, enteral feeding, thermoregulation.
- Preterm birth rate, survival rate, adherence to antenatal care protocols, neonatal outcomes (ventilation use, infection rates).

- Conduct regular infection control practice audits in labor rooms and NICUs.
- Update infection control policy/protocols if interventions are effective.
- Standardize antenatal care packages (nutrition, stress management, comorbidity screening).
- Ensure availability and readiness of preterm care equipment (CPAP, surfactant, thermal devices).
- Revise training modules for healthcare staff based on feedback and observed gaps.
- Scale up successful practices to other facilities/departments.

- Pilot structured antenatal care program for high-risk mothers.
- Train staff in both antenatal and neonatal interventions
- Introduce readiness checklist for preterm management (CPAP, surfactant, feeding protocols, thermal care).

- Compare preterm birth rates before and after intervention.
- Review outcomes: survival, complications, NICU admissions.
- Assess adherence to antenatal visits and neonatal protocols.
- Identify challenges (supply gaps, staff adherence, maternal factors)

PREMATURITY



Bridging Policy and Practice through RICs

Operationalizing Policy Intent

- Policies often set ambitious neonatal health targets (reduce sepsis, asphyxia, prematurity).
- RICs allow these targets to be translated into **practical, testable changes** in real clinical settings.

Identifying Implementation Gaps

- Policies may assume infrastructure, equipment, and skills are in place – but frontline realities differ.
- RICs quickly uncover **bottlenecks** (e.g., no functioning CPAP, delayed antibiotics, staff skill gaps).

Adapting Guidelines to Context

- National protocols are broad, but RICs help **adapt them locally** (district hospital, PHC, tribal setting).
- Ensures feasibility while staying aligned with policy principles.

Generating Local Evidence

- Small-scale testing provides **real-time data** on what works and what doesn't.
- These results create evidence that can **feed back into policy refinement**.

Encouraging Accountability & Learning

- RICs require data tracking and regular reflection by frontline teams.
- Promotes a **culture of continuous improvement** and shared accountability for neonatal outcomes.

Scaling What Works

- Once effective practices are identified (e.g., surfactant protocol, resuscitation checklist), they can be **scaled up systematically** under state/national programs.

Making Health Systems Responsive

- Instead of static policies, RICs enable **dynamic adaptation** of neonatal care systems.
- Bridges the time lag between **policy formulation** and **real impact**.

Thank You

Questions & Discussion