Quality Improvement for Newborn Health: from Local solutions to National Network

NQOCN
National Quality of Care Network

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India: Basic Demographics

- Population: 13 billion

- Total Maternal Deaths (2015) : 44,000

- Neonatal Mortality Rate :26/1000 live births

- Still Birth Rate: 22/1000 live births

- 27% of global neonatal mortality.

- 20% of global maternal mortality.

http://www.qualityofcarenetwork.org/country/india
http://unicef.in/Whatwedo/1/Maternal-Health
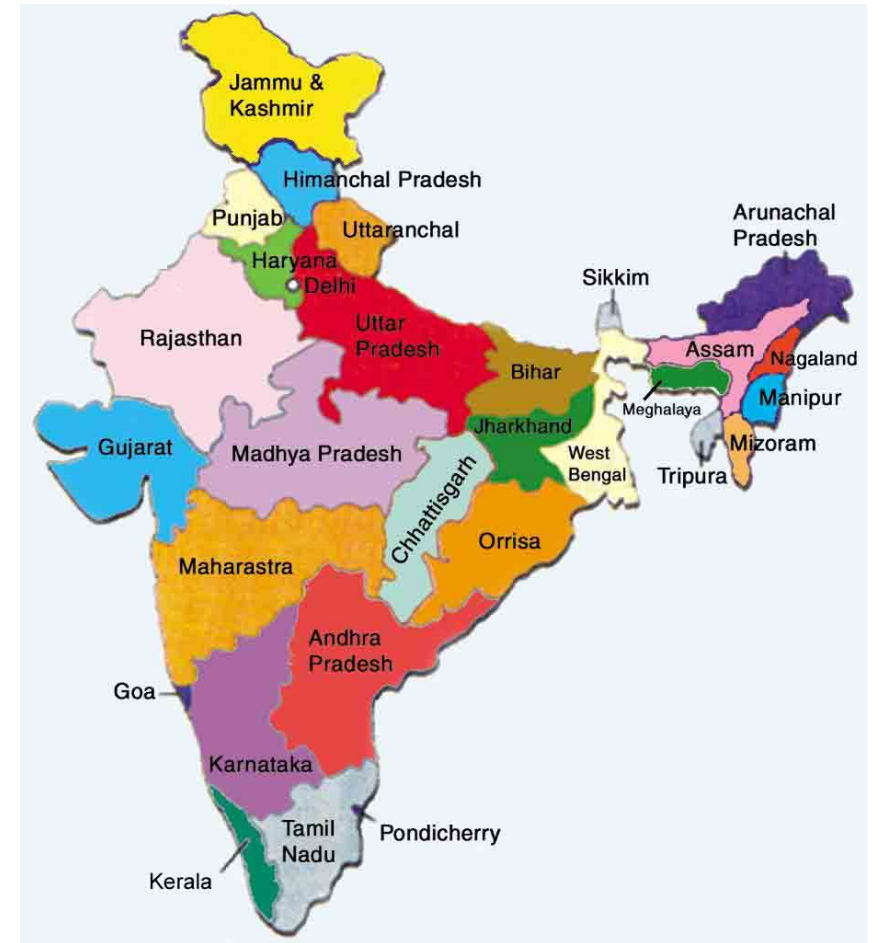
Coverage of Key Interventions : Scope for Improvement

- Antenatal Care (4 or > visits) :   45.5%

- Skilled Attendance at Delivery :   81.1%

- Early Initiation of breast feeding :   44.6%

- Exclusive Breast Feeding :   64.9%

- Post Natal Visit for baby :   33.6%

- Post Natal care for mother :   39.3%

- National Availability of EmOC :   37%

http://www.qualityofcarenetwork.org/country/india

Resource Constraints

- Density of physician/1000 population: 0.72

- Density of Doctors , Nurses and Midwives in India : 24.4/10,000 population.

- **Global Critical Threshold : 23/10,000 population.**

WHO Global Atlas of Health Workforce

Adequate Preparedness to improve Quality of Care

- Leadership
- Plans
- Strategies
- Standards
- Data
- Supporting systems

http://www.qualityofcarenetwork.org/country/india

Kalawati Saran Children's Hospital (KSCH), New Delhi ,India

- One of the largest tertiary care hospitals in India catering exclusively to pediatric population.

- Department of Neonatology caters to a load of 15,000 deliveries a year

- Over 2500 NICU admissions /year.

- Runs a super-speciality course of DM Neonatology affiliated to Delhi University

- Collaborative Center and National Center for Excellence for multiple national programs of the Government of India Ministry of Health.

2013-2014 : Our initial journey towards ensuring quality in SNCUs

Accreditation of SNCUs

2014-2015

Quality Assurance Centric

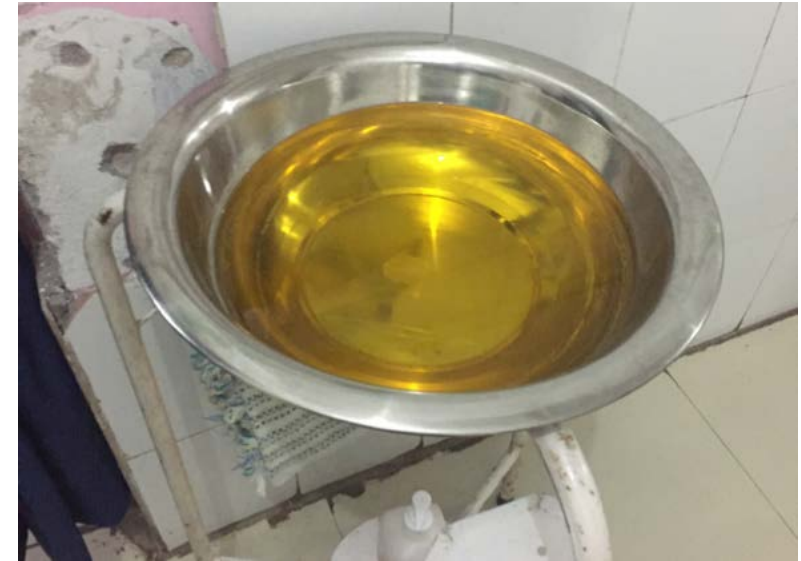## Bottle Neck Analysis

Meghalaya : Assessment of Quality of Neonatal Healthcare (2015-2016)

Health Service Delivery : a major bottleneck

Ground Reality: Across MNH Facilities

Do we wait for the ideal condition, resources, manpower and time to improve quality of care ?

OR

WE fix our Problems ourselves

- Strengthen our systems

- Increase their efficiency

- Make them more equitable

- Make them **TRANSPARENT**

Without Asking for more Resources

Start of our journey in Quality Improvement

- **Aug 2015**:   QI Team from GOSH, London visited KSCH

- **Aug 2015** :   Learning session on basic QI Methodology

- **May 2016**:   WHO Regional Workshop for QI for MNH, New Delhi

- **June 2016**:   Start of QI coaching sessions at KSCH with USAID
                                ASSIST

- **July 2016**:   Start of First QI project on Hypothermia at arrival.
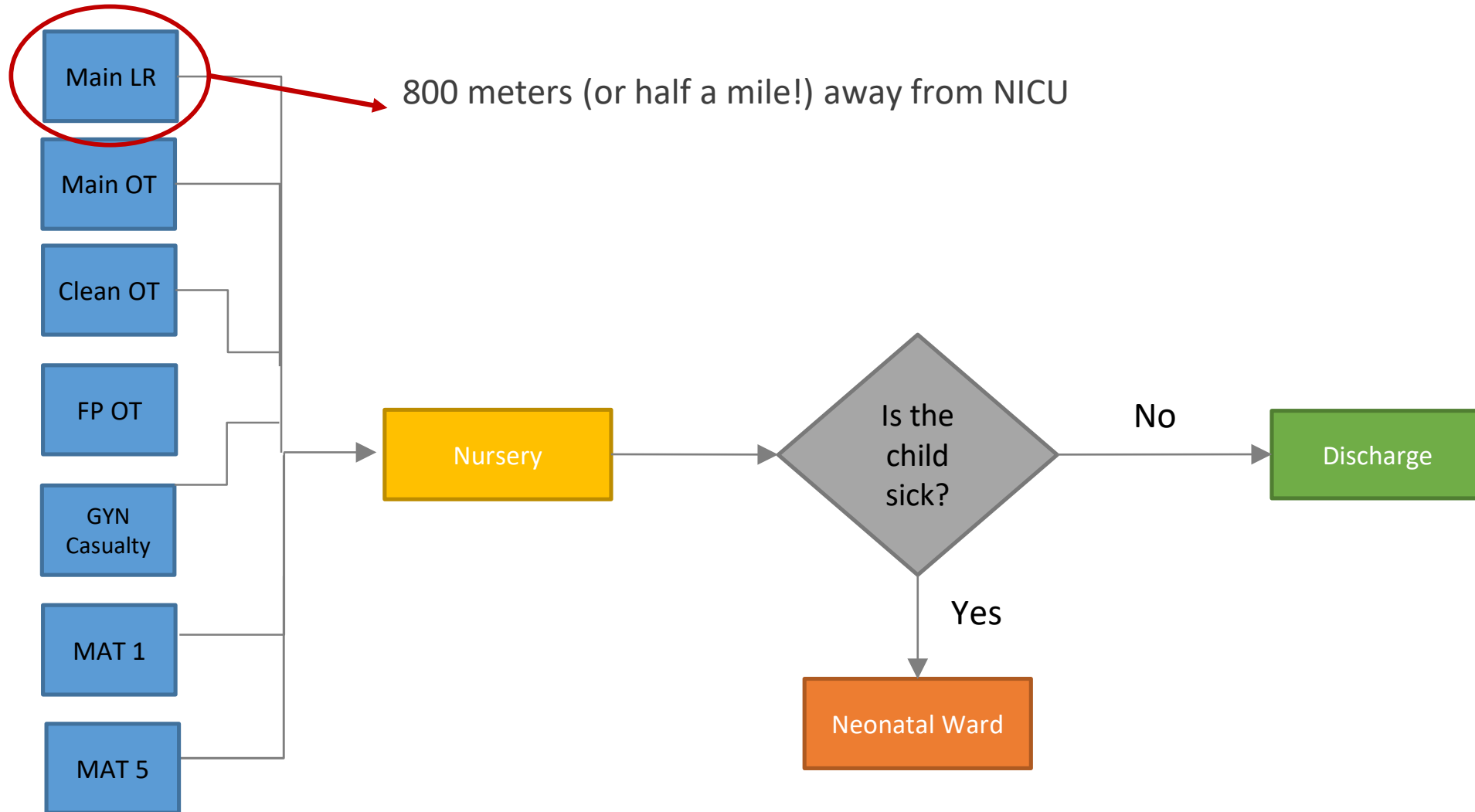
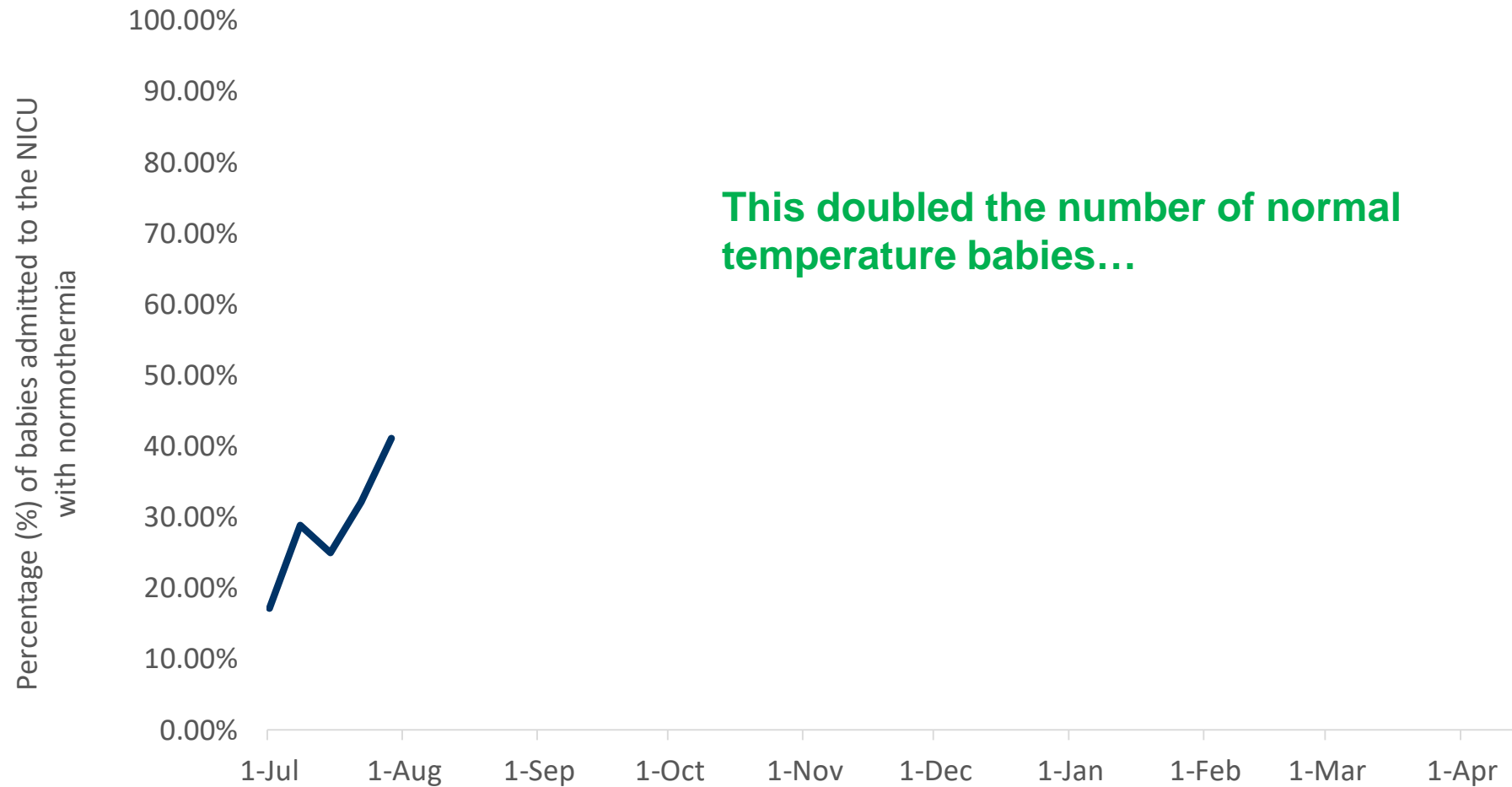# Reduction of neonatal hypothermia at admission: A Quality Improvement Initiative

Department of Neonatology ,LHMC, New Delhi
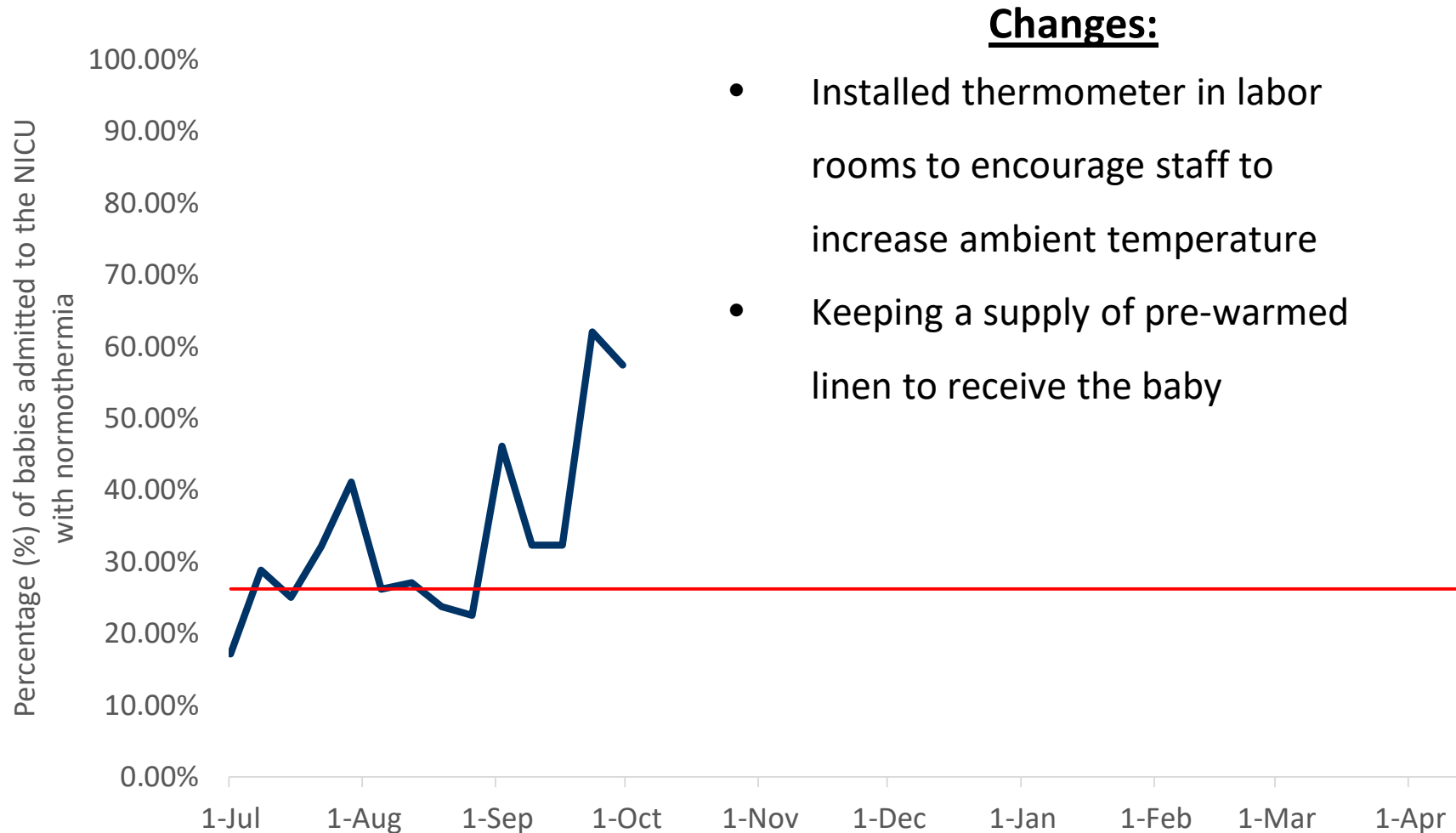
June 2016 - till date
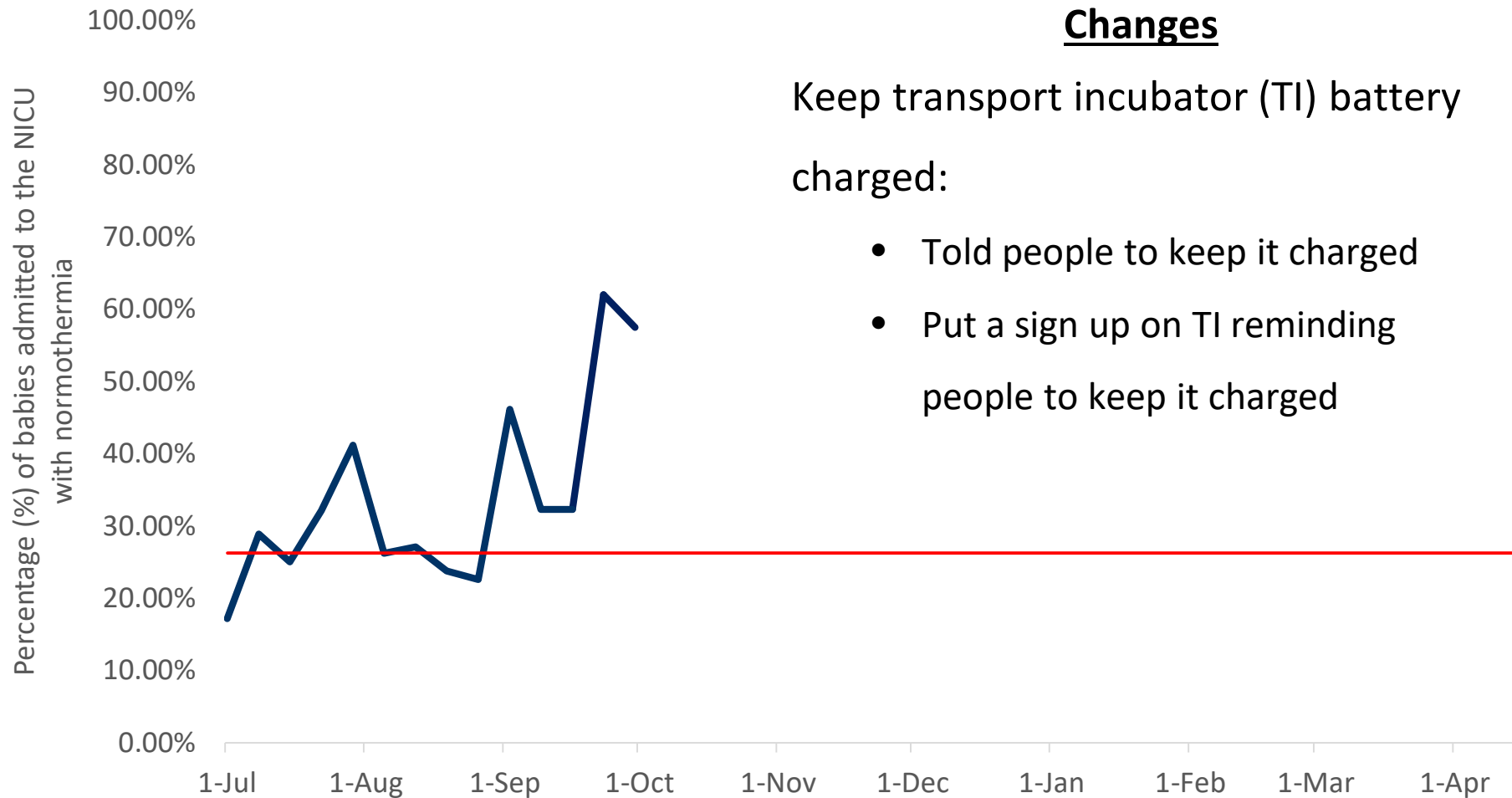
Newborns arriving in the NICU?

800 meters (or half a mile!) away from NICU

Main LR

Main OT

Clean OT

FP OT

GYN Casualty

MAT 1

MAT 5

Nursery

Is the child sick?

No → Discharge

Yes → Neonatal Ward

The hospital started work to reduce hypothermia in July 2017 by 'sensitizing' staff

This doubled the number of normal temperature babies…

Continued the improvement work

Changes:

- Installed thermometer in labor rooms to encourage staff to increase ambient temperature

- Keeping a supply of pre-warmed linen to receive the baby

Started analyzing the problem more and making system changes

Percentage (%) of babies admitted to the NICU with normothermia

Changes

Keep transport incubator (TI) battery charged:

- Told people to keep it charged
- Put a sign up on TI reminding people to keep it charged

Initial Improvement… but sustainability was challenging
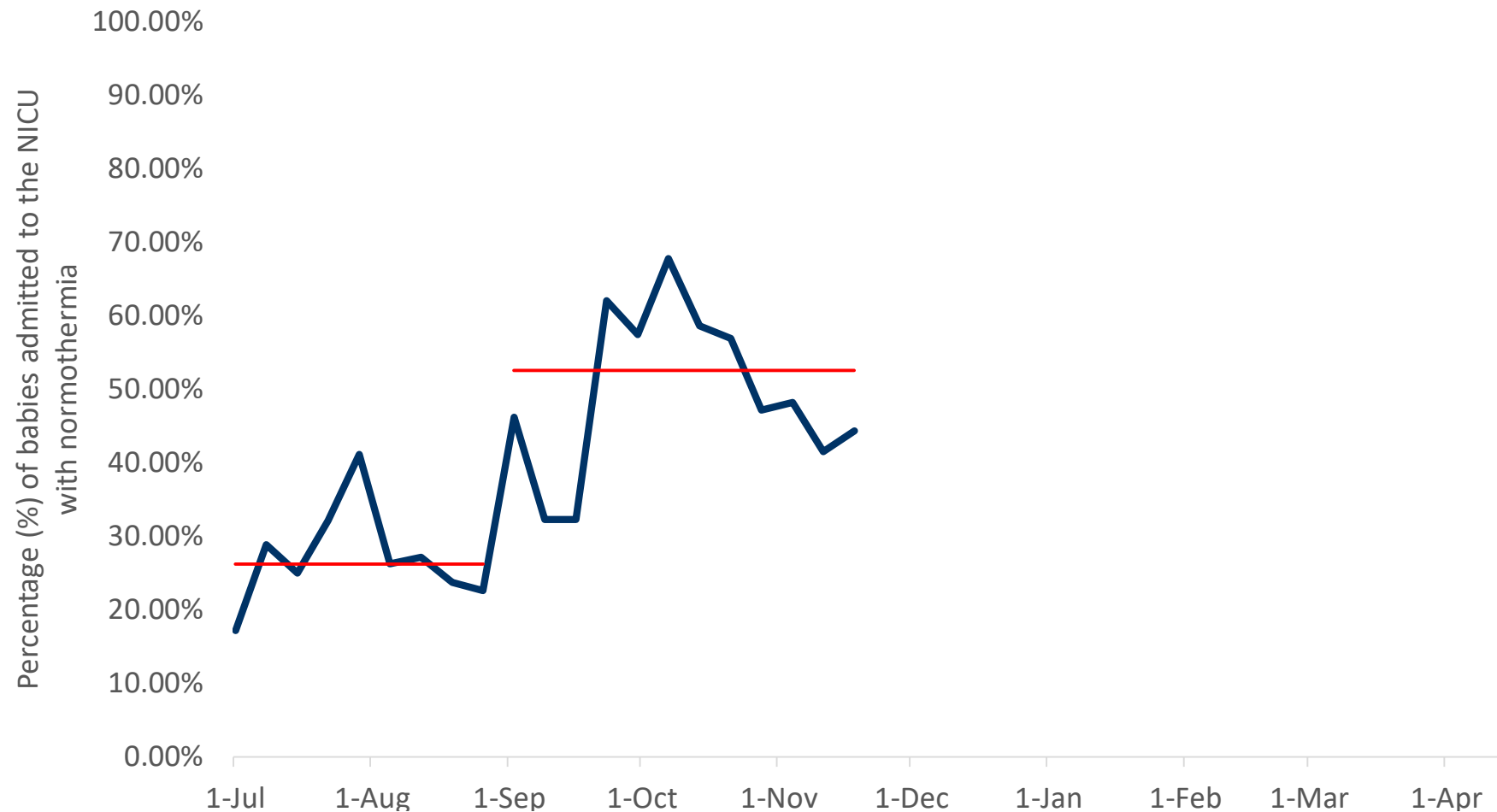
Used system changes to keep battery charged

Changes

- Tape charging leads to TI

- Set up dedicated
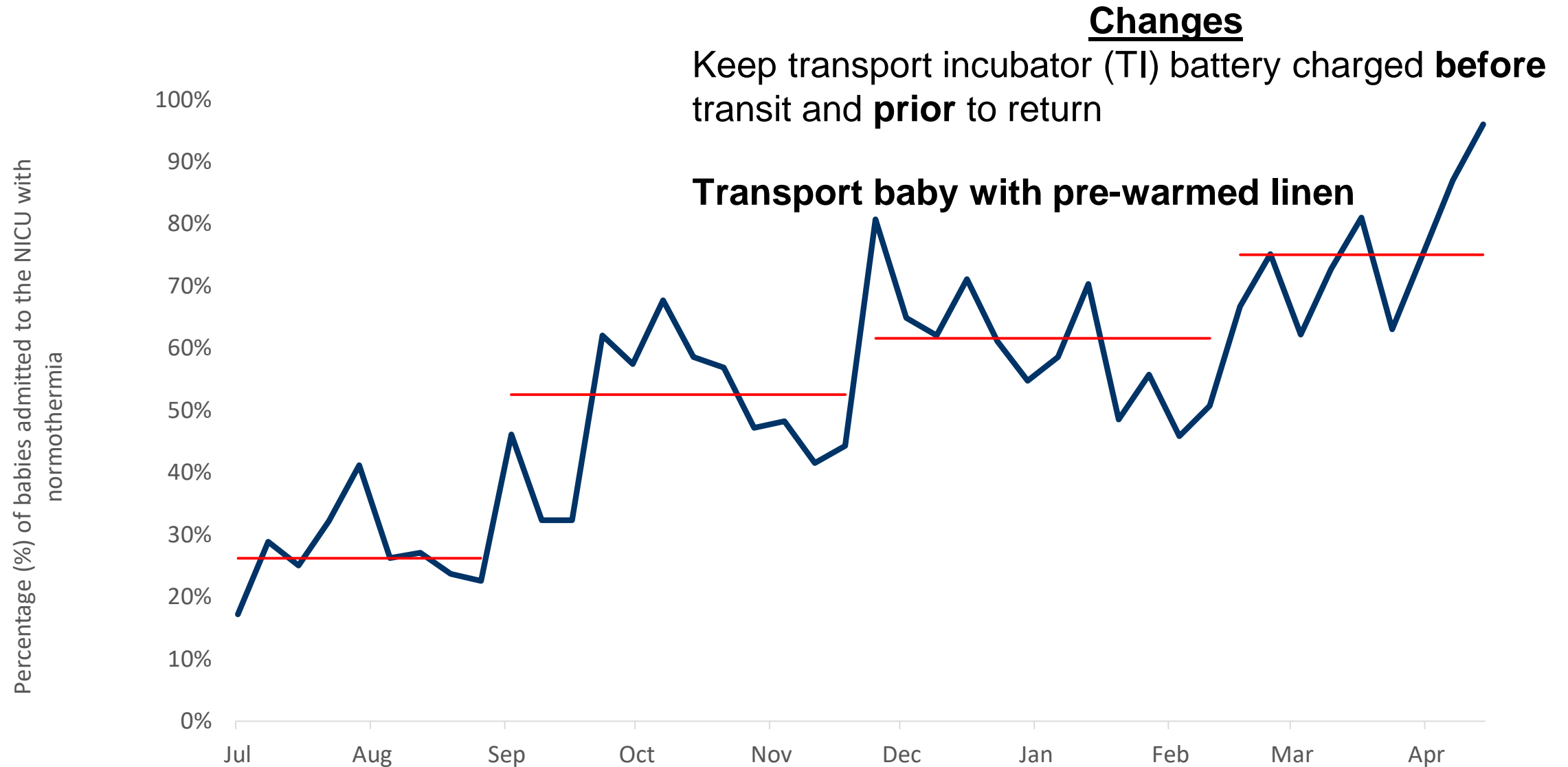
  "charging bays"
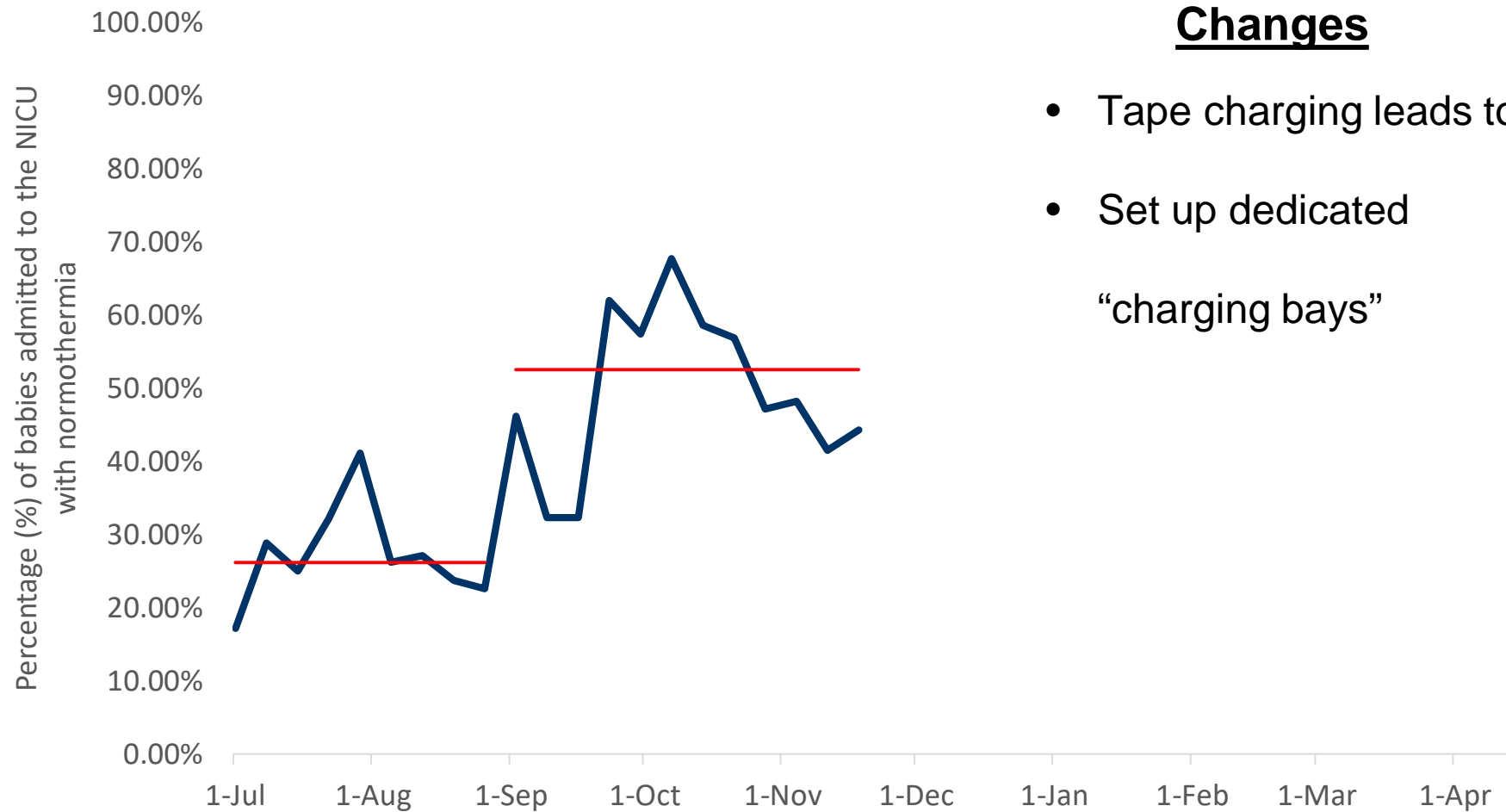
Improvement, but batteries were old and no longer holding a charge >15 min

Use new system changes

Changes

Keep transport incubator (TI) battery charged **before** transit and **prior** to return

Transport baby with pre-warmed linen

Y-axis: Percentage (%) of babies admitted to the NICU with normothermia

X-axis: Jul, Aug, Sep, Oct, Nov, Dec, Jan, Feb, Mar, Apr

21
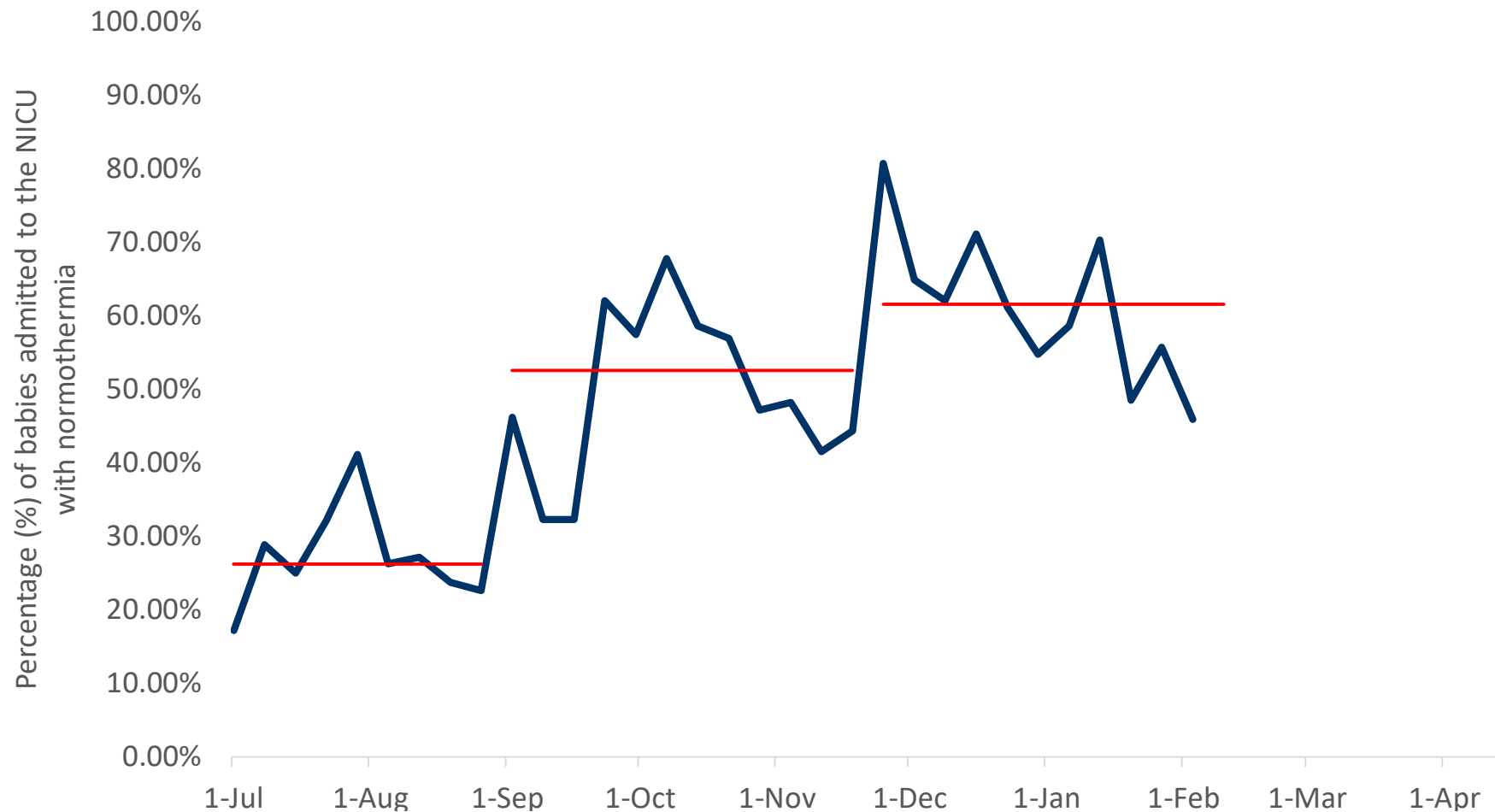
Improving temperature management during transportation

- 89.7% reduction of moderate hypothermia.
- **55% reduction in deaths/1000 patient days.**

Average Moderate Hypothermia: 39, 38, 42, 28, 21, 24, 22, 26, 15, 8, 4

Death/1000 patient days: 12.69, 11.67, 13.7, 13.04, 11.51, 9.3, 9.9, 9.6, 7.68, 5.44, 5.69

X-axis: 2016 Jun, July, Aug, Sep, Oct, Nov, Dec, 2017 Jan, Feb, March, April
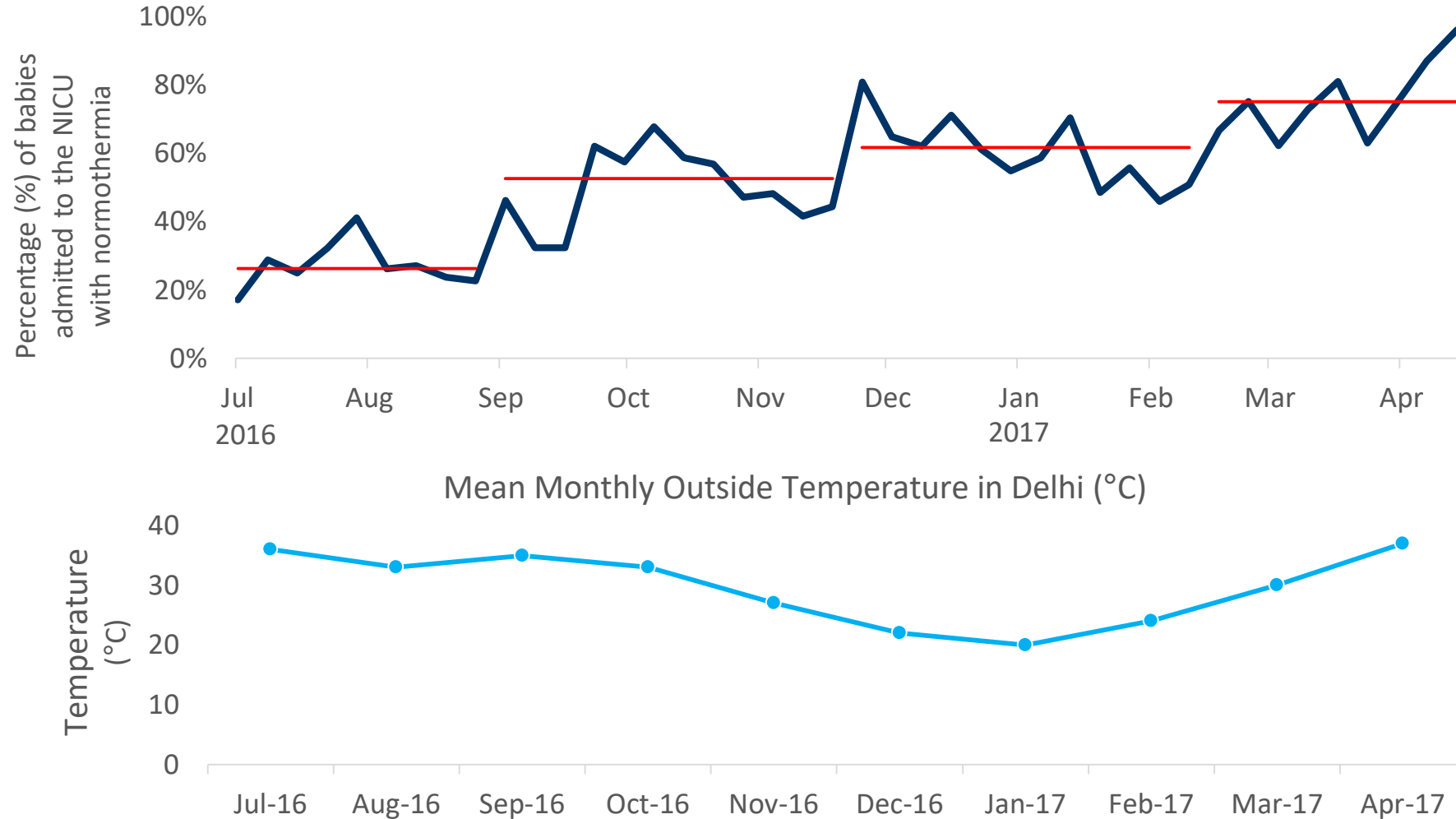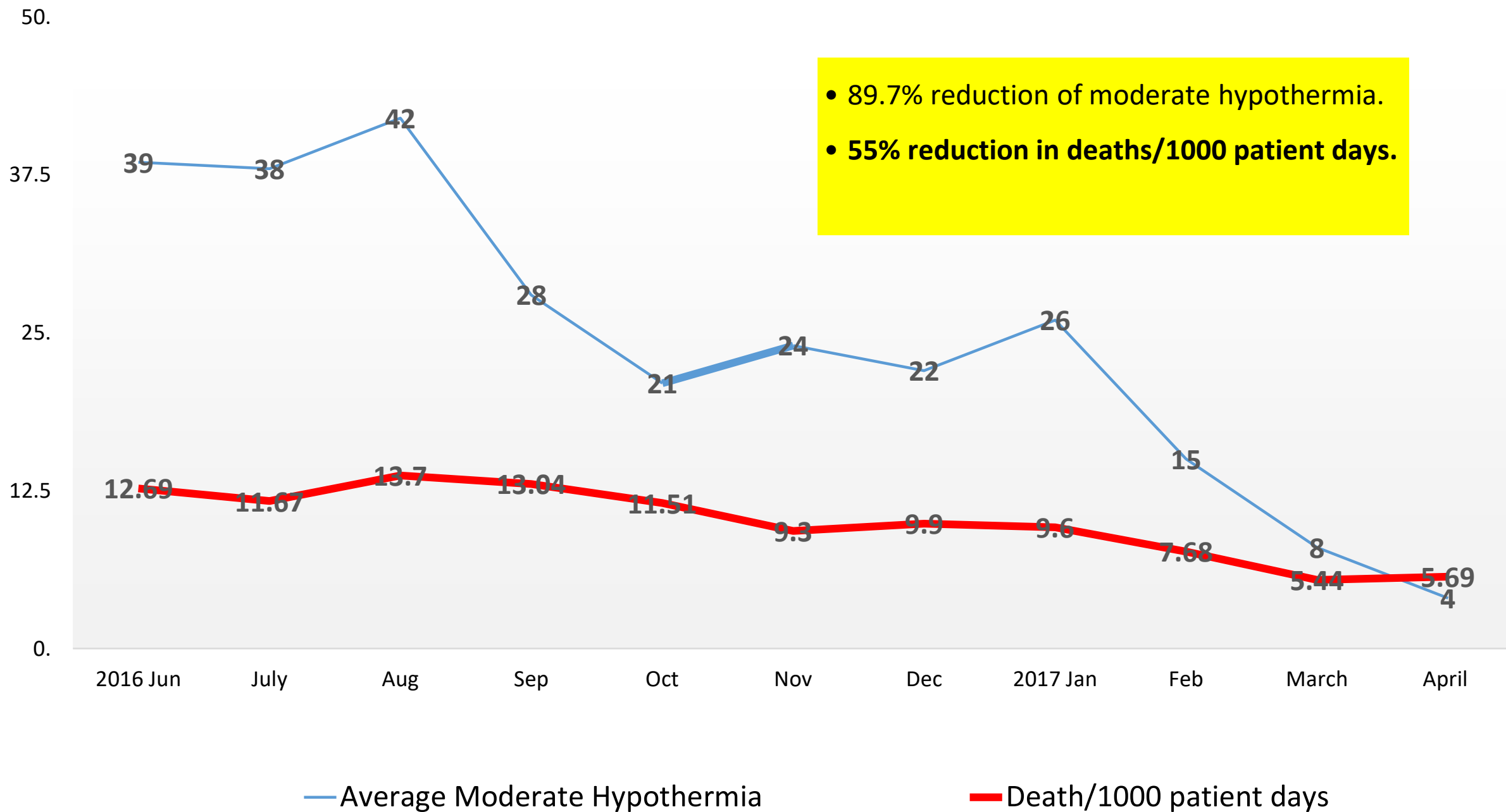
Start of the Network (2016-2017)

Initial Results KSCH
- Increase in normothermia
- Reduction of all cause mortality

Dissemination of QI Skills
- To likeminded teams led by local champions
- Organization of multiple 2 day QI workshops &TOT session.

Capacity Building
- Networking of teams
- Onsite and offsite coaching support
- Experience sharing under a common platform
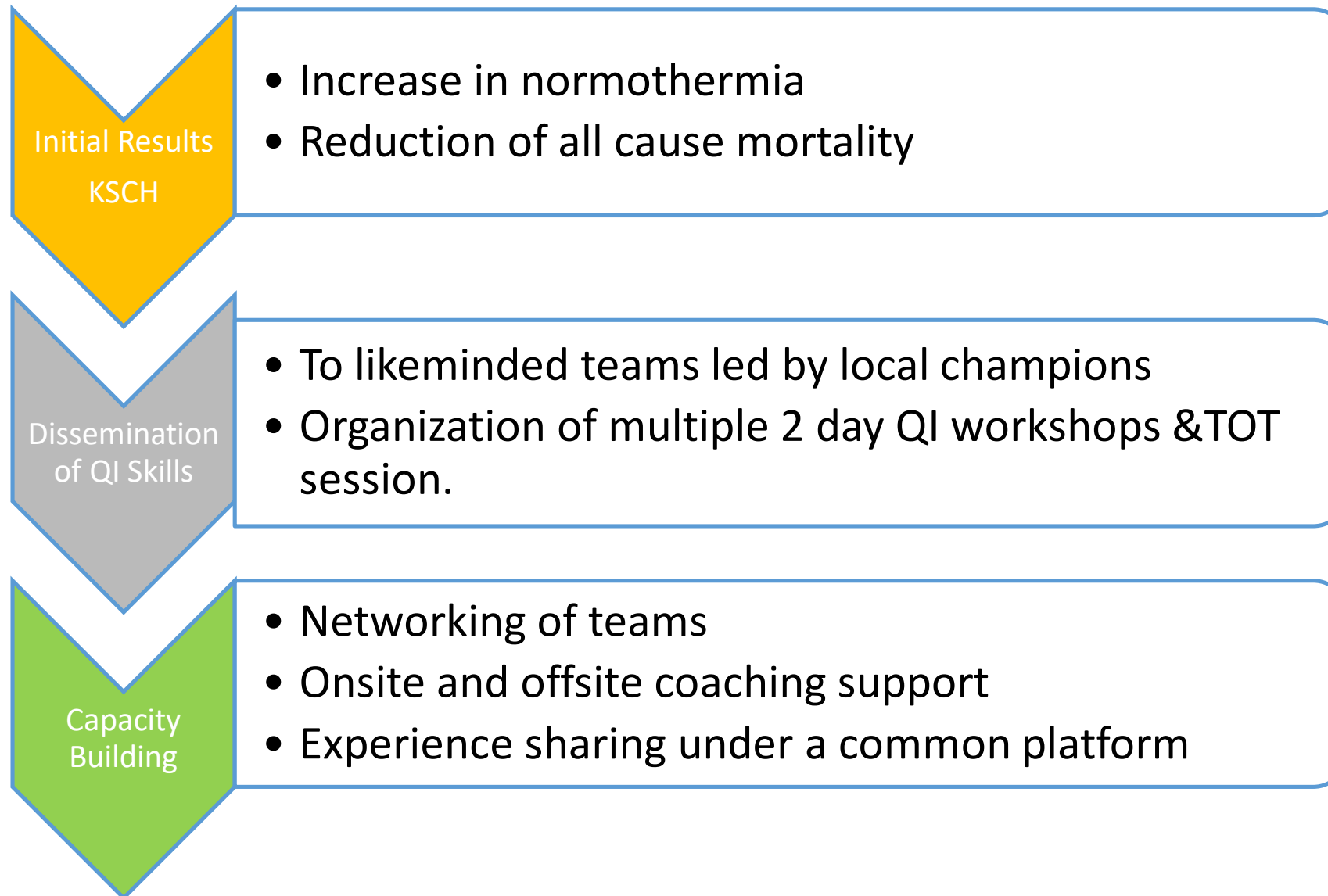
How we identified the initial teams: Prerequisites

- Had a local champion for neonatal healthcare in place .

- Geographically close to KSCH

- Voluntarily expressed desire to be a part of the process.

- Agreed to self finance their travel and stay .

What factors encouraged the teams to take up QI trainings?

- Novelity

- Sense of Purpose

- Desire to replicate success stories at their facilities.

- Improve clinical outcomes

QI Networking Sessions: Oct 2016-Aug 2017
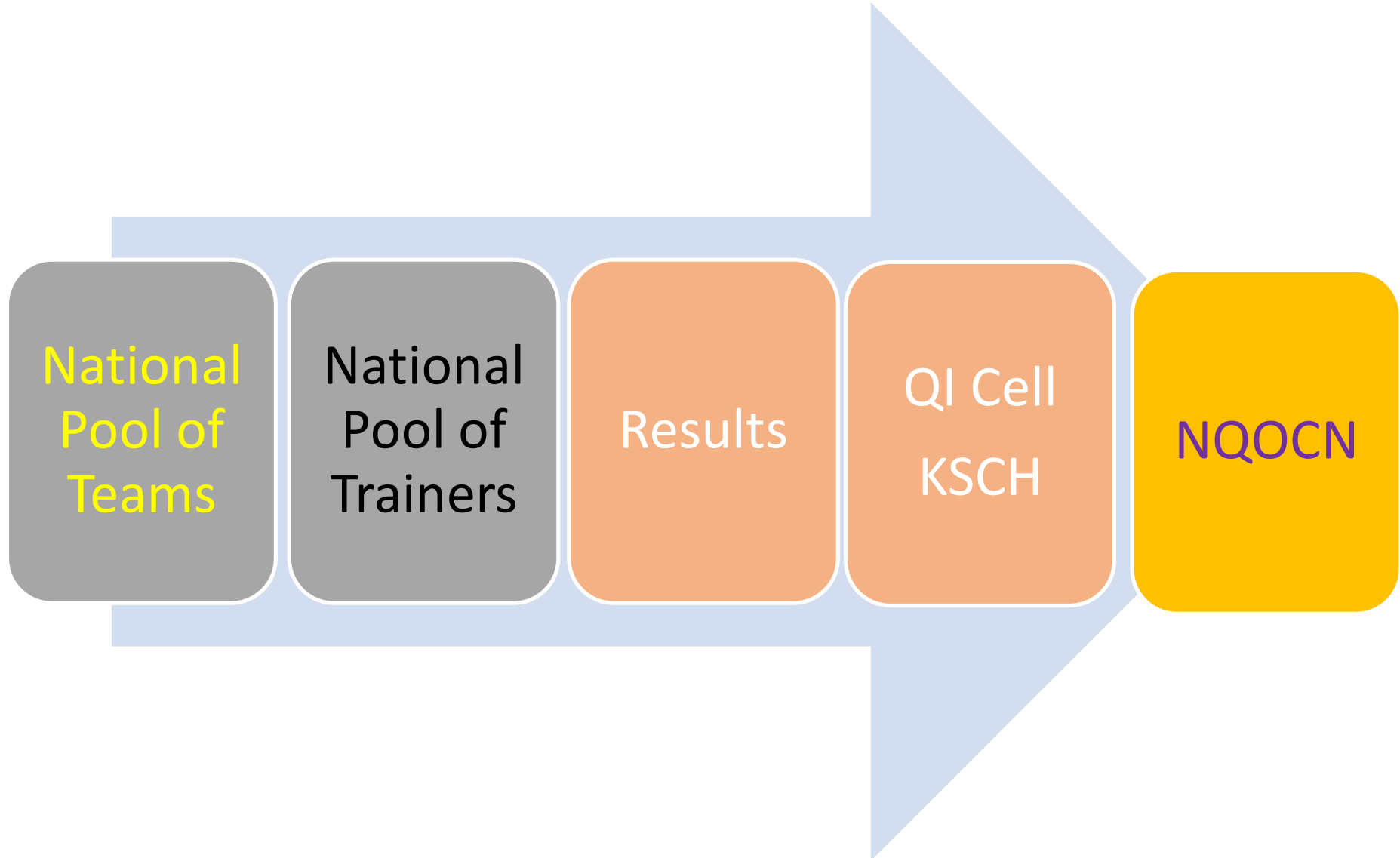
FINANCES FOR WORKSHOPS

Jan 2017-Aug 2017

National Pool of Teams

National Pool of Trainers

Results

QI Cell KSCH

NQOCN

National Quality Of Care Network(NQOCN) : Objectives

Our Network

- 9 states (UP, MP, MS, Haryana, Kerala, TN, Karnataka, Meghalaya, Delhi)

- Nearly 70 teams

- Delivery load of over 140,000 deliveries/year.

- Expression of Interest :Punjab (CMC Ludhiana), State NHM MP.

Drivers ?

- **"Local Champions"** at the national level who were advocating the cause of the newborn for decades.

  - most knew each other

  - had worked together on diverse subjects other than QI

  - had a common belief that they could not wait for the ideal situation to act and had to fix their problems themselves

  - **NQOCN** provided them with a "common platform" for action

- Cadres of HCW previously uninvolved in decision making were made a part of the NQOCN teams thereby increasing their **self esteem and motivation** to perform for the network.

"Flat Hierarchy" , "Voluntary", "Honorary", "Not for Profit", "Self Financing"
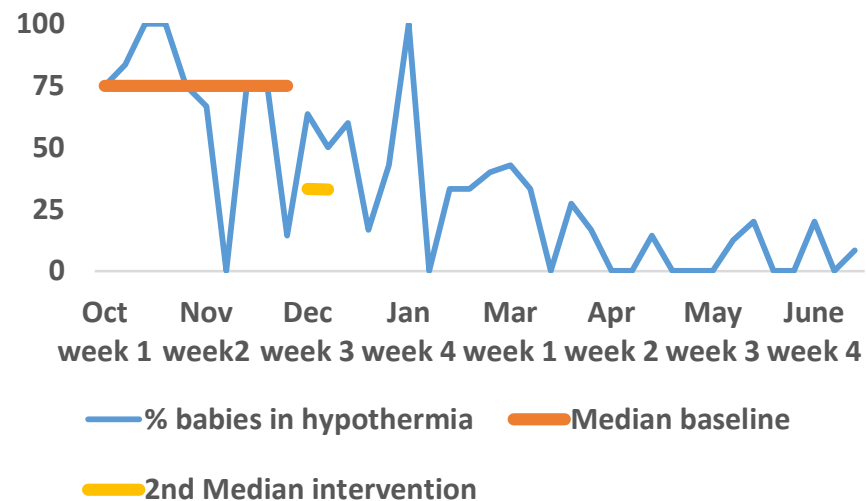
What Drives us ?

- Passion to improve outcomes,

- Novelty,

- Connectedness

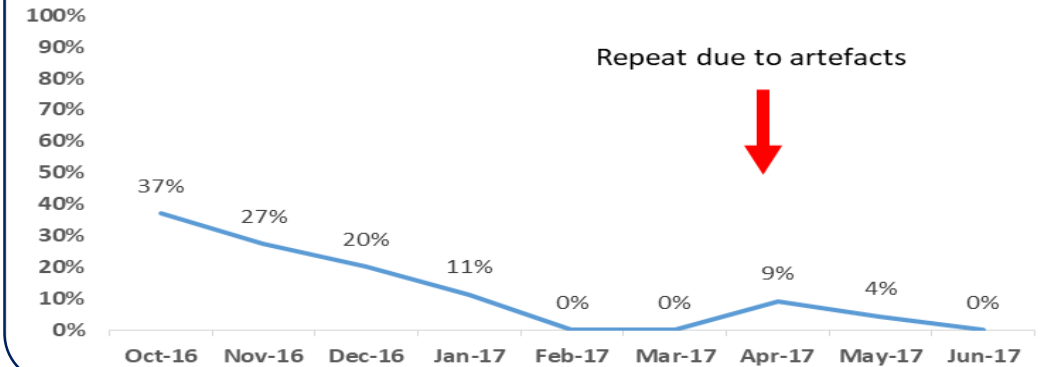- Willingness to change,

- Empathy,

- Compassion,

- Results

Our initial Results:
Standalone Private Facilities

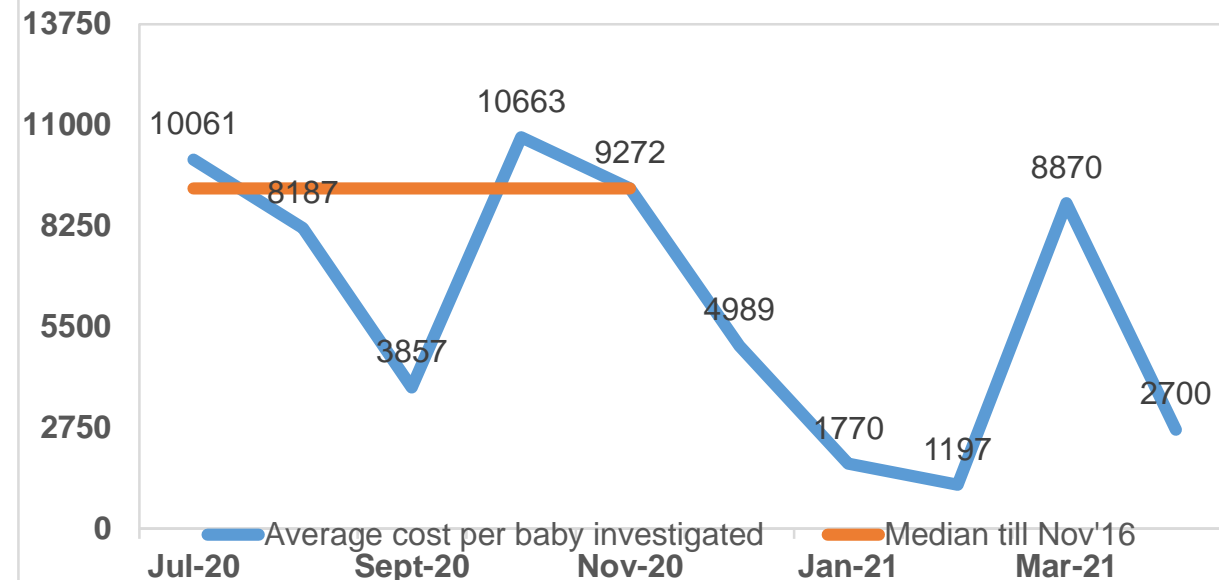### Reducing hypothermia at Chinmoy Mission Hospital Banglore

100
75
50
25
0

Oct
Nov
Dec
Jan
Mar
Apr
May
June

week 1 week2 week 3 week 4 week 1 week 2 week 3 week 4

—— % babies in hypothermia   —— Median baseline

—— 2nd Median intervention

Proportion of babies with duplicate x-ray done Ovum hospital banglore

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%

Repeat due to artefacts

37%
27%
20%
11%
0%
0%
9%
4%
0%

Oct-16 Nov-16 Dec-16 Jan-17 Feb-17 Mar-17 Apr-17 May-17 Jun-17

Reduction in average cost of investigation per baby

Manipal Hospital, Karnataka

13750
11000
8250
5500
2750
0

10061
8187
10663
9272
3857
4989
1770
1197
8870
2700

—— Average cost per baby investigated   —— Median till Nov'16

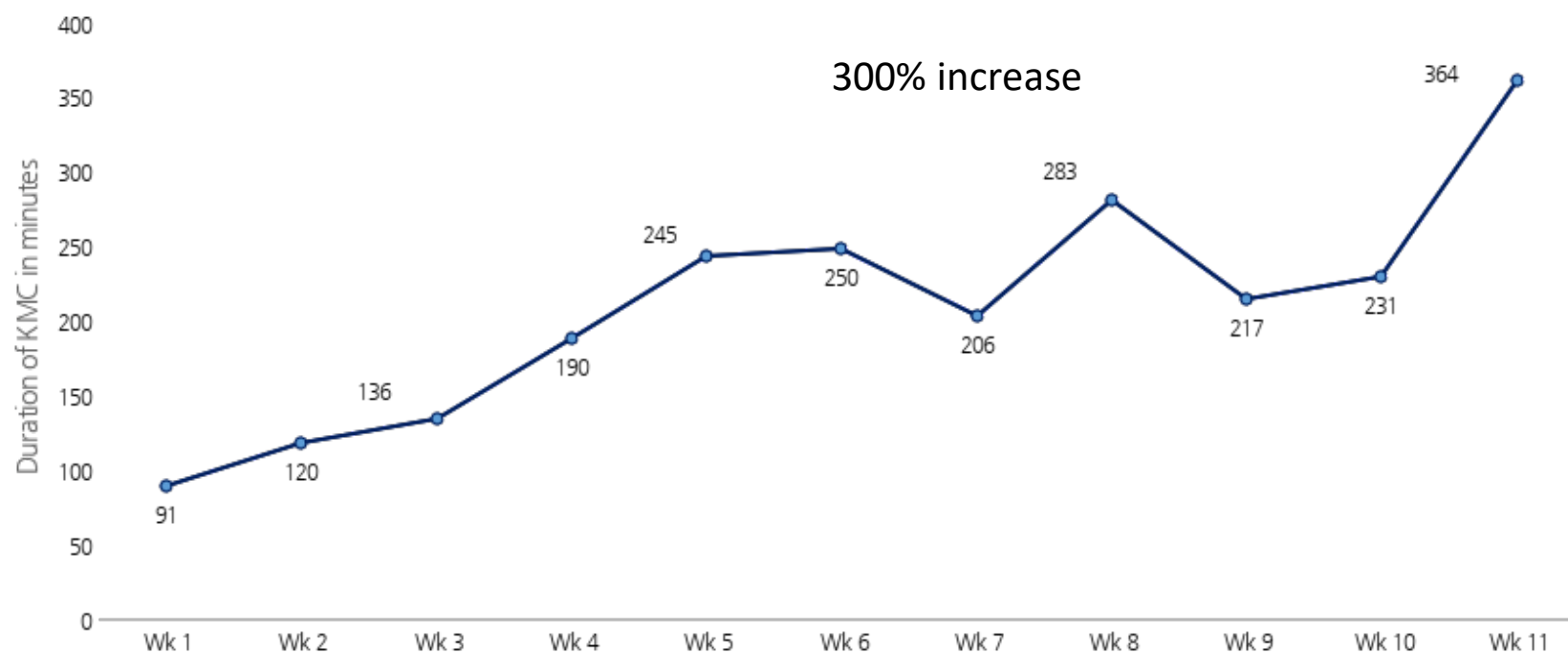Jul-20   Sept-20   Nov-20   Jan-21   Mar-21

Standalone Nursing homes :
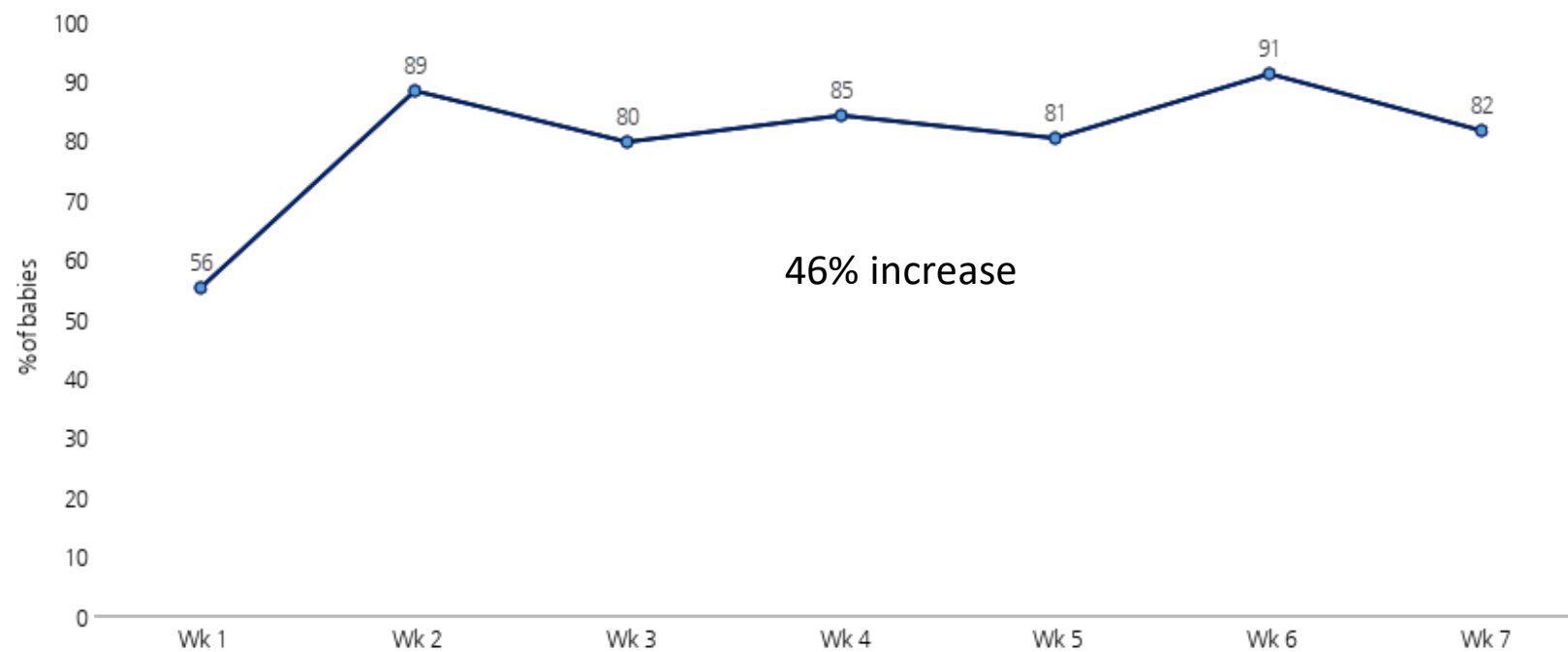## Deogiri Children's Hospital (Maharashtra)
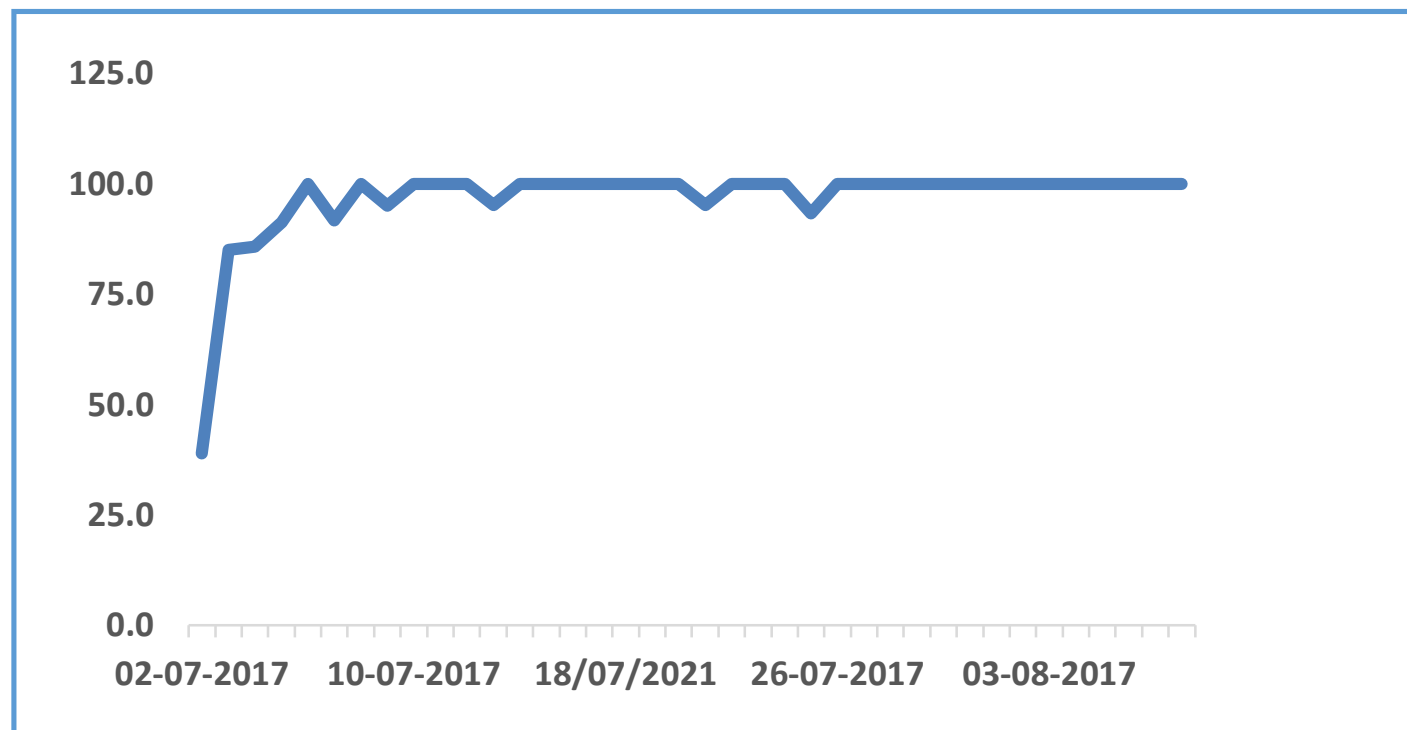
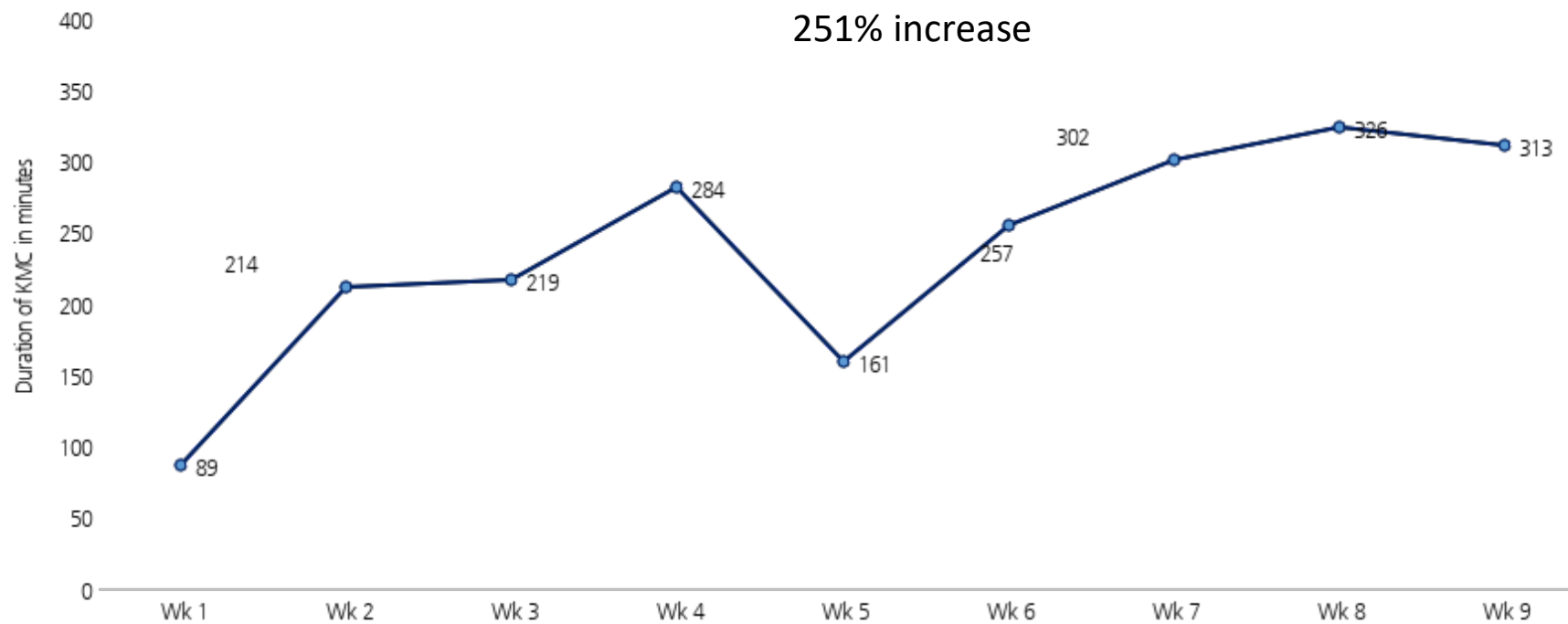**Proportion babies getting sucrose analgesia**

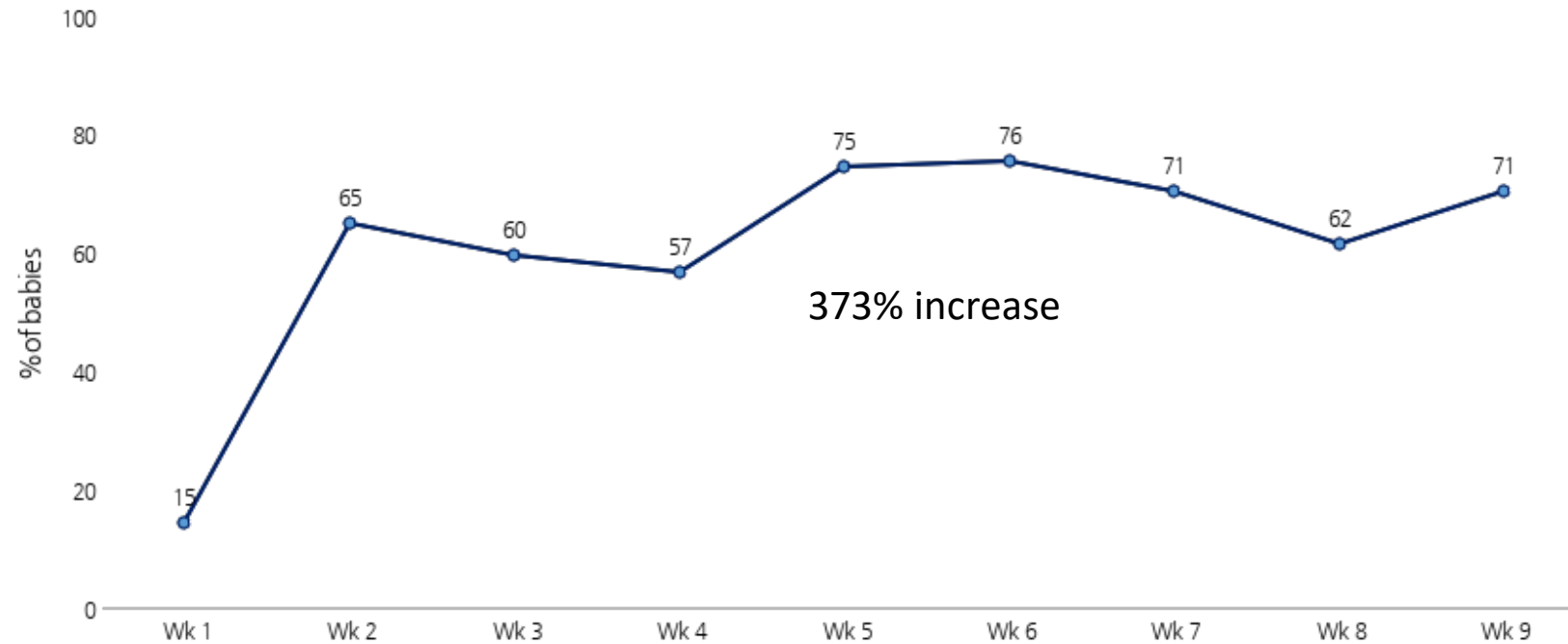# Increasing duration of KMC per baby in SNCU, Ganesh Das hospital

300% increase

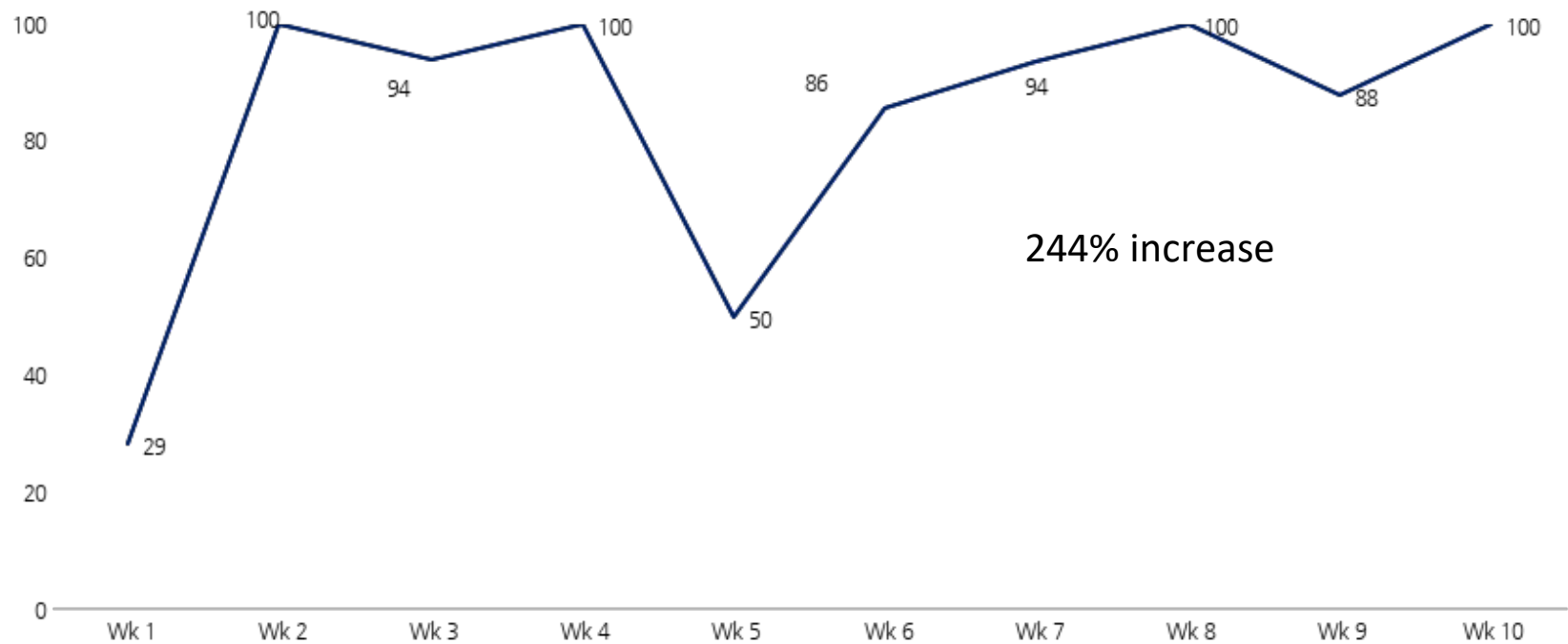Increasing the % of babies breastfed within one hour of birth in MCH Tura

Increasing duration of KMC per baby in SNCU, MCH Tura

251% increase
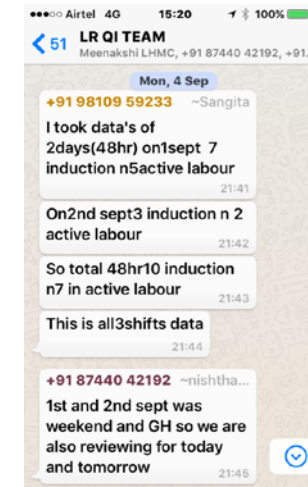
Increasing the % of babies getting immediate skin to skin contact and basic newborn care on mothers abdomen in MCH Tura

373% increase

Increasing the % of babies breastfed within one hour of birth in NEIGRHIMS

Coaching Support

Coaching Support : Finances

ASSIST
- Travel
- Onsite coaching

Meghalaya NHM
- Travel
- Onsite coaching

MP NHM
- Travel
- Onsite mentoring of SNCU

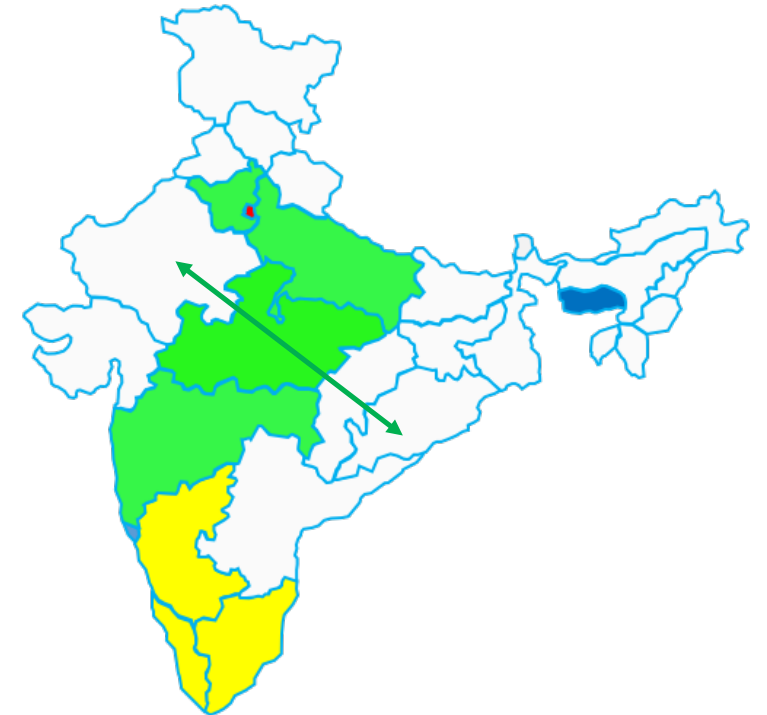**Individual facilities**
- Monthly QI meetings
- Local Hospitality

NQOCN
- Free Off site mentoring
- Onsite mentoring (if paid by host)

What Now?

- **Expand:**
  - Geographical (more peripheral)
  - Pool of local champions, trainers, coaches, teams and facilities
  - Partners

- **Sustain:**
  - Keeping the interest alive
  - Financial plan
  - Formal organizational structure.

Learning Lessons

- Informal QI Networks can play an important role in complimenting the formal networks of QoC.

- Majority of Health Care Workers want to improve outcomes but lack the skill and system support to do so.

- Attaching value to work and exposing teams to a practical method to improve clinical processes helps them to work cohesively.

Learning Lessons

- Identify and reconnect with the local champions ,provide them the environment

  to learn and spread this learning.

- Go beyond preferences, comfort zones and brandings to pickup your teams.

- Do not wait for an executive order to act, start your improvement work now!

Key mantra to sustain any network: robust financial plan, perseverance and connectedness.

ACKNOWLEDGEMENTS

- Nigel Livesley, Director South Asia, USAID ASSIST URC
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- Rajesh Mehta ,WHO SEARO.
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- Prof. Arvind Saili, Former Head, Neonatology , LHMC, New Delhi
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