

### **Project Title**

To improve Parental Involvement & Neurodevelopment Care for Premature Infants in the Neonatal ICU

### **Project Lead and Members**

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- Ereno IL
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- Delphine Seto
- Robyn Foo
- B. Ismail
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### **Organisation(s) Involved**

Singapore General Hospital

### **Healthcare Family Group Involved in this Project**

Medical, Allied Health

### **Specialty or Discipline**

Neonatology & Developmental Medicine, Physiotherapy

### **Aims**

To increase parental involvement and implement timely developmental care intervention from 40% to 100% in premature infants born  $\leq 32$  weeks over 12 months in SGH.

- Reduction in length of stay
- Days to regain birth weight
- Days to achieve full feeds

- Test of Infant Motor Performance

## **Background**

See poster appended / below

## **Methods**

See poster appended / below

## **Results**

See poster appended / below

## **Lessons Learnt**

See poster appended / below

## **Conclusion**

See poster appended / below

## **Additional Information**

Singapore Healthcare Management (SHM) Conference 2021 – Shortlisted Project  
(Patient Experience Category)

## **Project Category**

Care & Process Redesign, Quality Improvement, Workflow Redesign, Value Based  
Care, Length Of Stay, Safe Care

## **Keywords**

Early Parental Education, Developmental Care Bundle, Kangaroo Care

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**Singapore Healthcare Management 2021**

# Project H2K

## To Improve Parental Involvement & Neurodevelopmental Care for Premature Infants in the Neonatal ICU

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### Background of the Problem

#### STRESSFUL ENVIRONMENT

Neonatal ICU can be stressful for both preterm infants and their parents. Medical intervention & environmental stressors eg: blood taking, bright light or loud noise may alter physiological function of the infants.



#### AFFECTING DEVELOPMENT

Mismatches between extra- and intra-uterine during the critical period of the developing brain may affect future developmental outcomes.

#### EARLY PARENTAL INVOLVEMENT

Builds **quality experiences** in infant's NICU journey and improves **neurodevelopmental outcomes**.

### Mission Statement

**1 Project Huddle to Kuddle (H2K)** aims to increase **parental involvement** and implement timely **developmental care** intervention from **40% to 100%** in premature infants born  $\leq 32$  weeks over **12 months** in SGH.

**2 Secondary Outcomes:**

- Reduction in length of stay (LOS)
- Days to regain birth weight (BW)
- Days to achieve full feeds
- Test of Infant Motor Performance (TIMP)

### Methodology

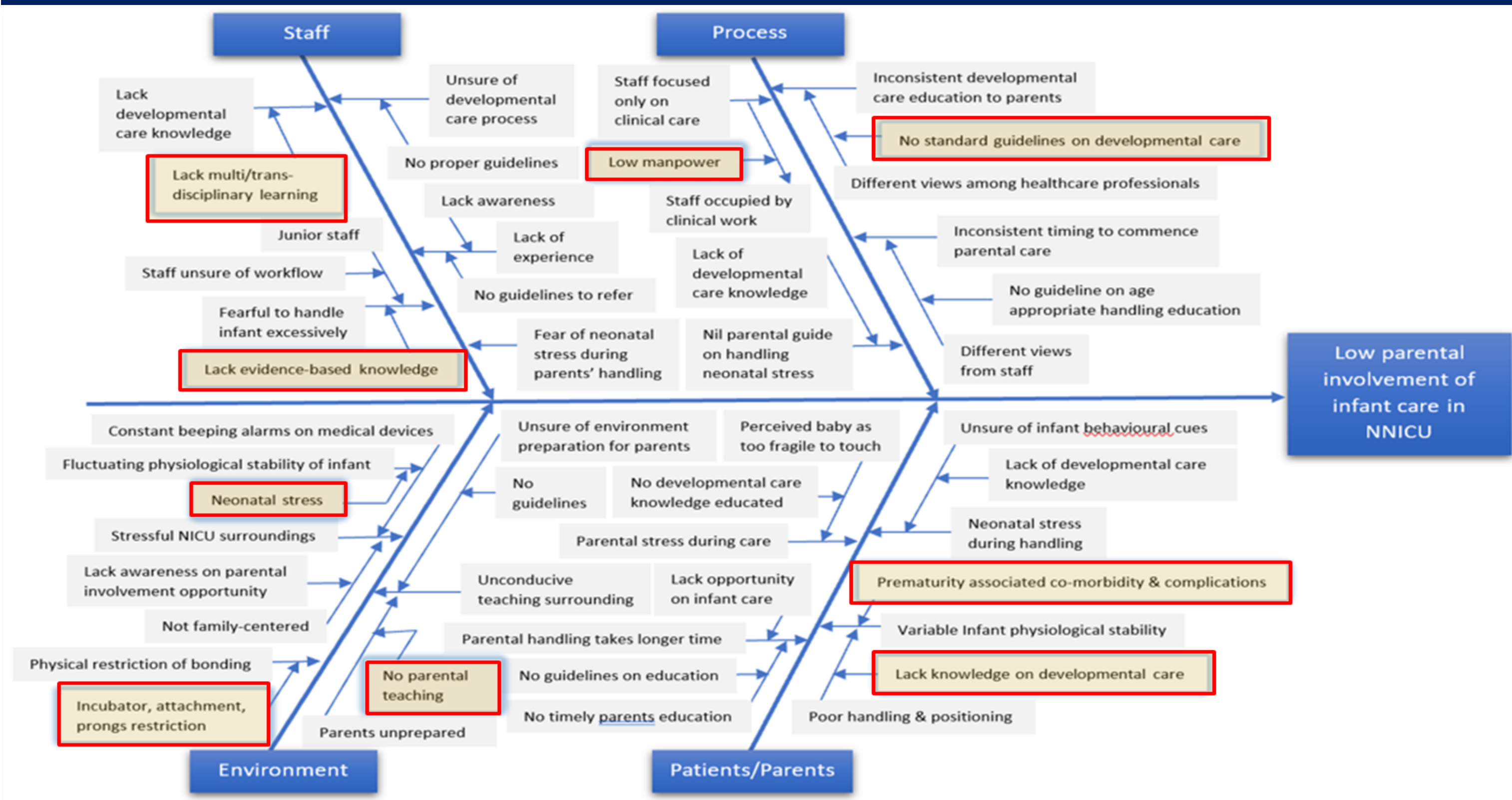


Fig 1. Fish Bone Diagram of Causes

#### Pareto Chart Low Parental Involvement in NICU

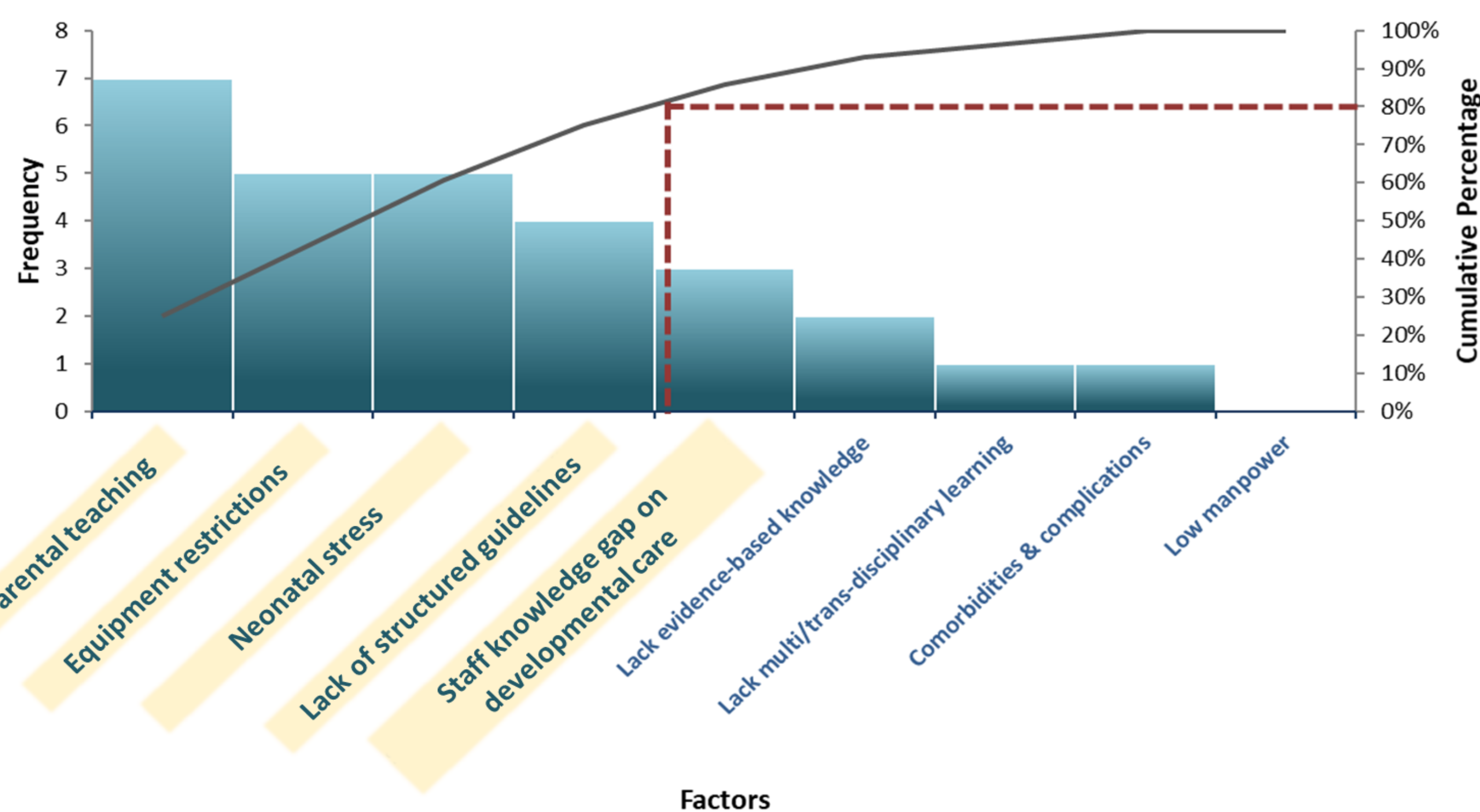
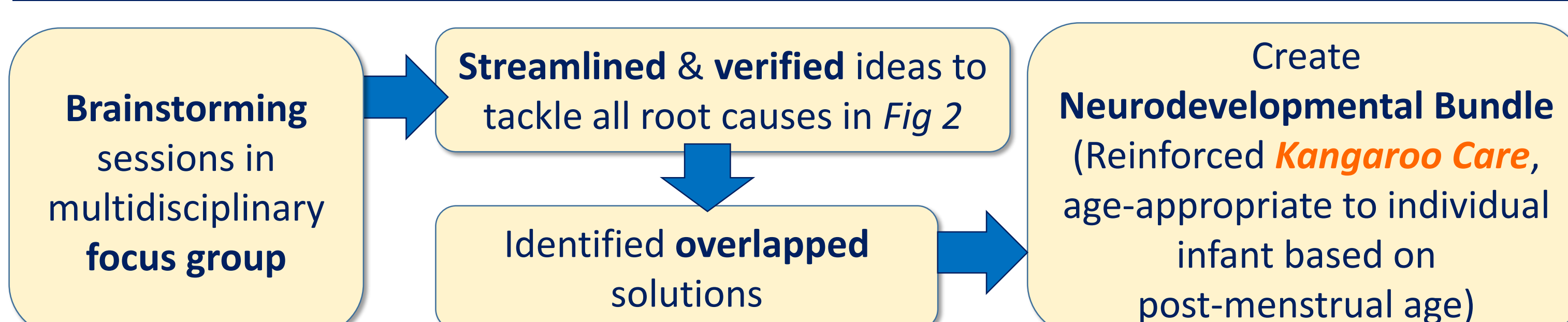


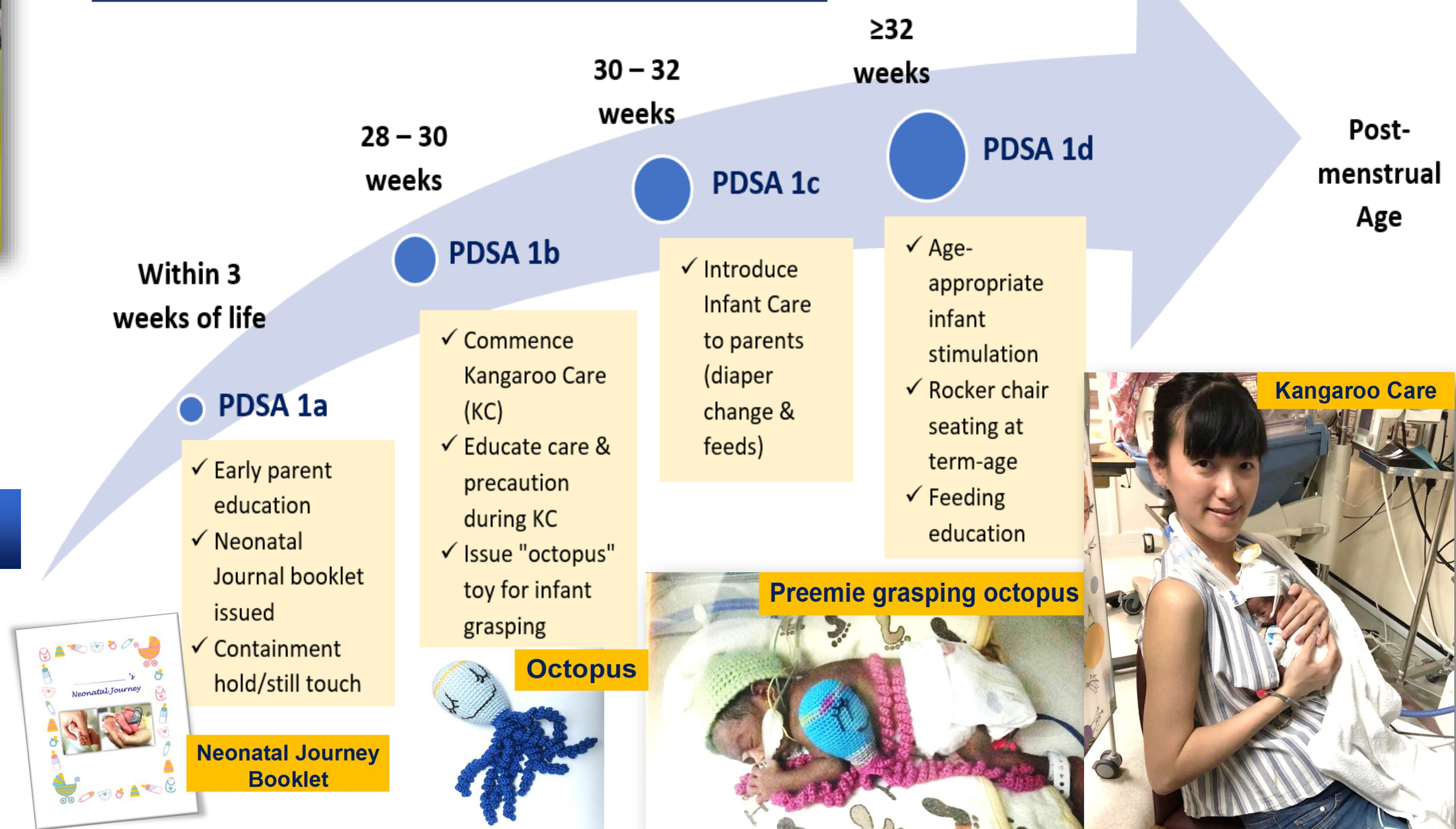
Fig 2. Pareto Chart of Low Parental Involvement in NICU

### Analysis



### Intervention

#### Developmental Care Bundle



### Results

#### Timely Developmental Care

Achieved in **100%** of the preterm infants born  $\leq 32$  wks

#### Increased Parental Level of Participation

Increased Likert scale from **<40%** to **80%** in all 7 parental involvement domains eg: diaper change & assist feeding ( $p < 0.005$ )



#### Improved days to Full Feeds & Regain BW

Mean days to achieve full feeds and regain BW improved by **4 days & 1 day** respectively [NS]

**Improved Motor Status**  
Increased mean TIMP scores by **2 points** [NS]

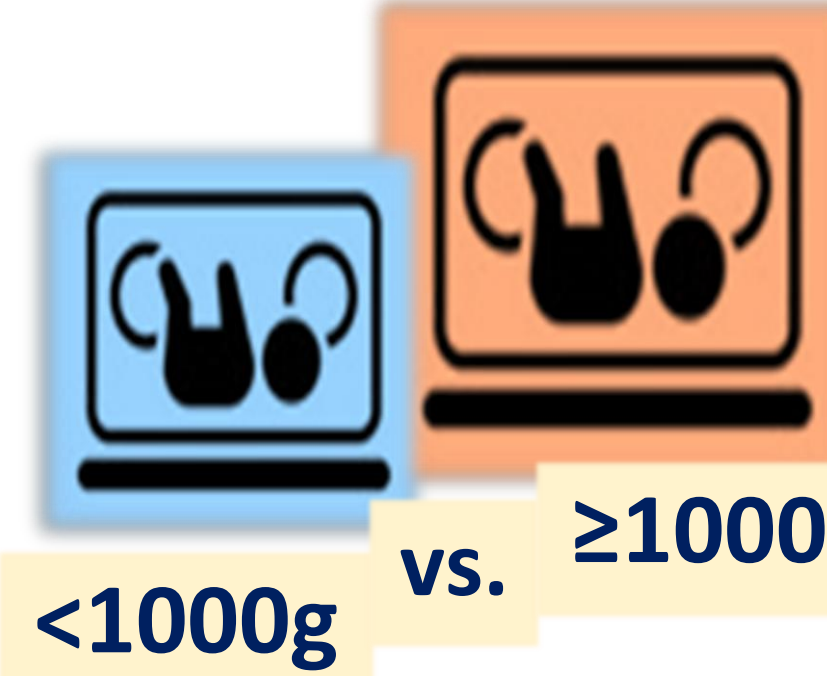
**Reduced Length of Stay**  
Reduced mean LOS in HD by **4 days** [NS]

\*HD – high dependency unit NS – Not Significant S – Significant

### SUBGROUP ANALYSIS

**Baby with BW  $\geq 1000$ g had:**

#### Comparison of BW



#### Reduced HD Length of Stay

Significantly reduced by **7 days** ( $p < 0.05$ )

#### Regained BW earlier

Significantly earlier by **3 days** ( $p < 0.05$ )

#### Achieved Full Feeds earlier

Significantly earlier by **7 days** ( $p = 0.069$ )

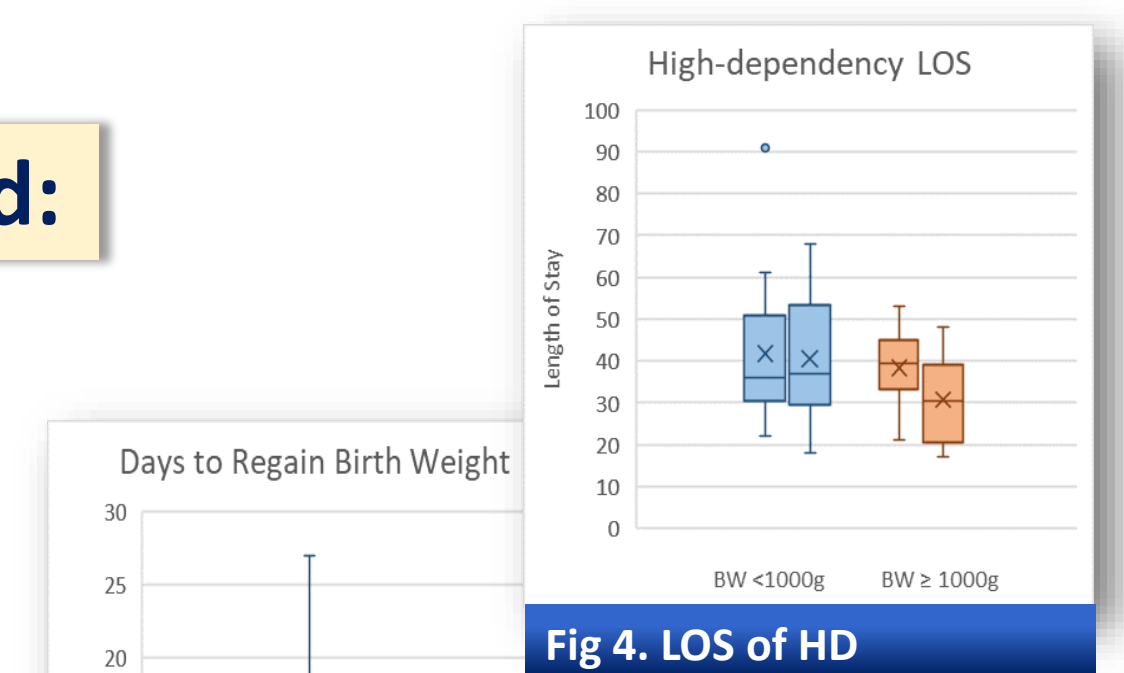


Fig 4. LOS of HD

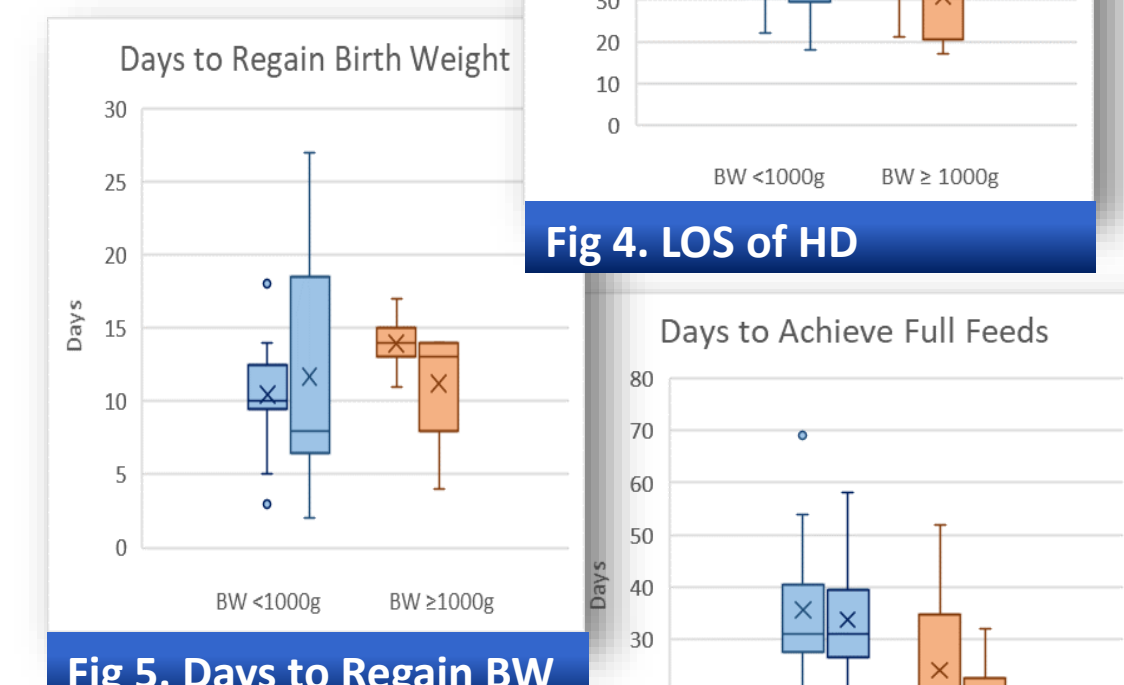


Fig 5. Days to Regain BW

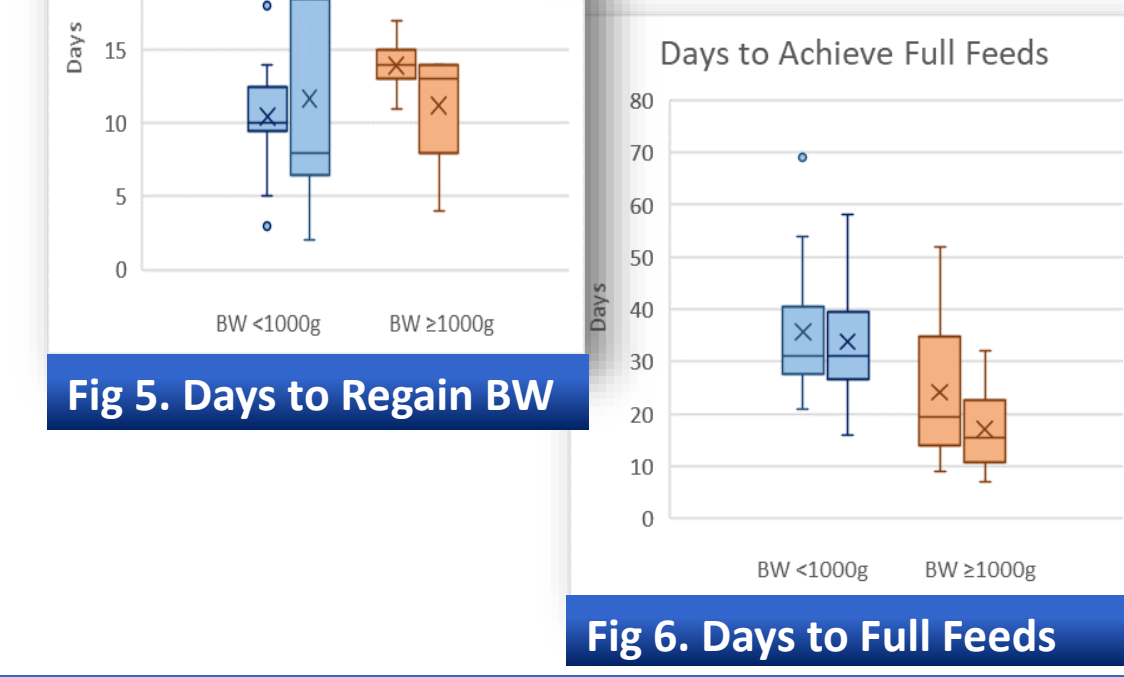


Fig 6. Days to Full Feeds

### Sustainability

- 1 Monitor Consistent Parental Education & Involvement**  
Ensure e-documentation within 3 weeks of life of the infants
- 2 Patient Safety**  
Close monitoring of kangaroo care
- 3 Compliance in Infection Control**  
Ensure daily washing of octopus and wipeable rocker chair
- 4 Reinforce Guidelines**  
Visible guideline forms on patient's clipboard

### Acknowledgement

We would like to thank the sponsors, Dr Poon Woei Bing (Head, Neonatology) and Jennifer Liaw Suet Ching (Head, Physiotherapy), for being supportive and encouraging of this project.