

## Surrey Memorial Hospital (SMH)

### Background

- Routine eye screening is indicated for all neonates born at:
  - less than 30 weeks gestational age, or less than 1250 grams
- Retinopathy of prematurity (ROP) exams are associated with immediate pain and distress, as well as prolonged physiologic changes
- Pharmacologic and non-pharmacologic interventions are available, but no regimen has proven to be consistently effective
- What interventions were routinely used, and do we have an opportunity to reduce pain and distress with ROP exams at SMH?

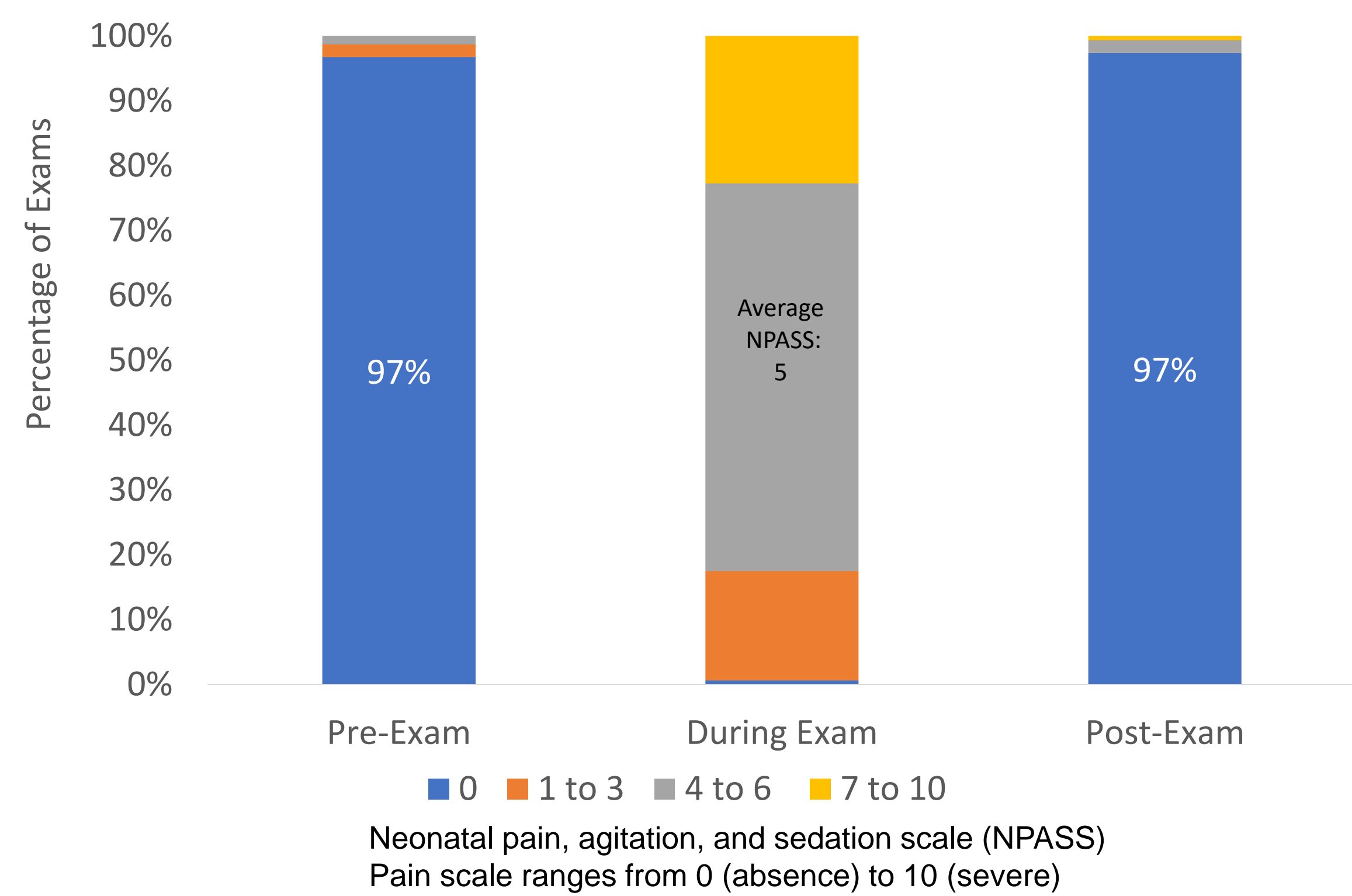
### Plan-Do-Study-Act (PDSA) – Baseline

B Newby (Pharmacist), R Bains (Pharmacy Resident), Dr Moodley (Neonatologist)

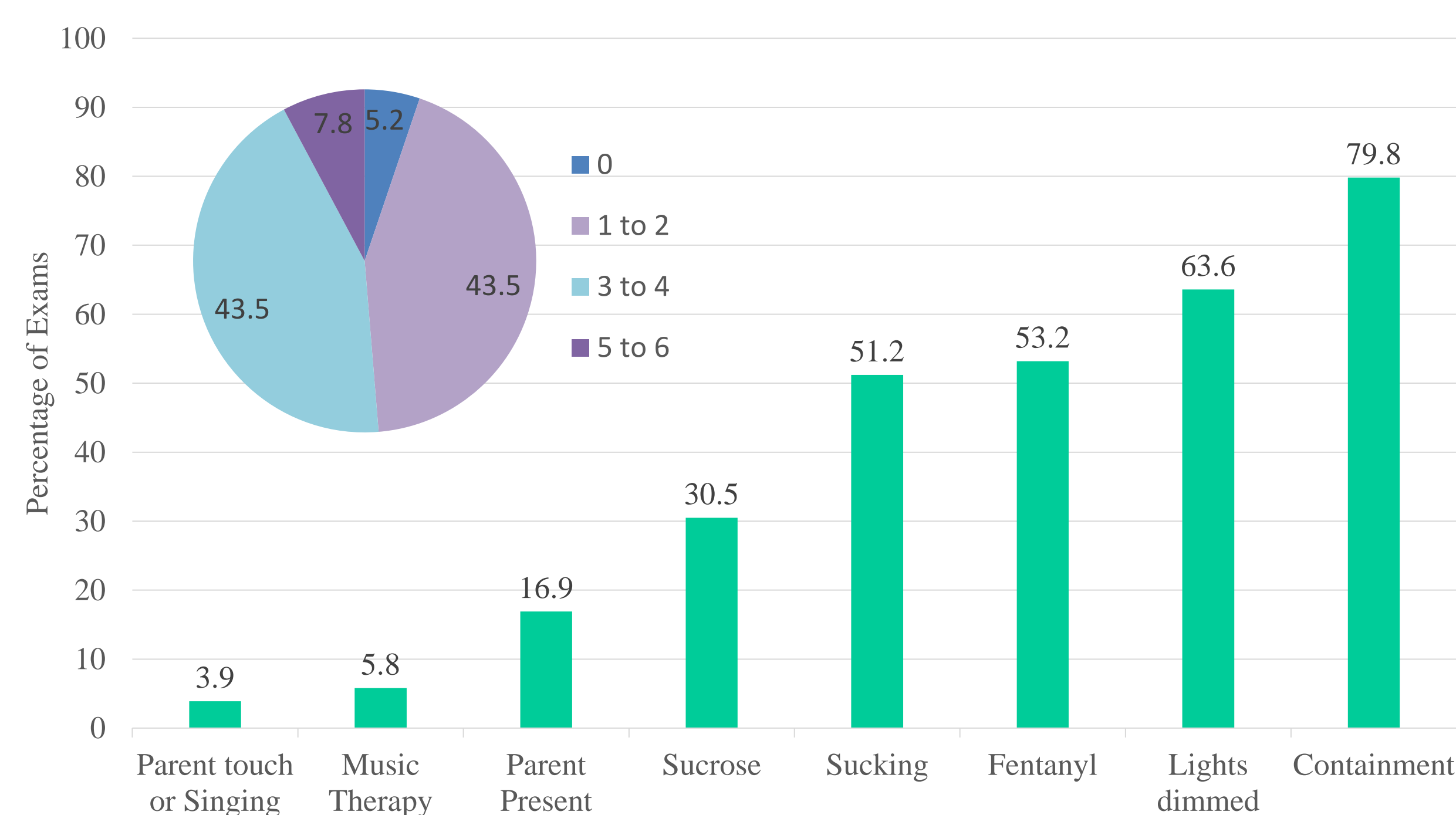
- Chart review to determine pain experience with ROP exams
  - SMH Neonatal Intensive Care Unit (NICU)
  - Descriptive statistics and T tests

### Baseline Data – Jan 2023 to Dec 2023

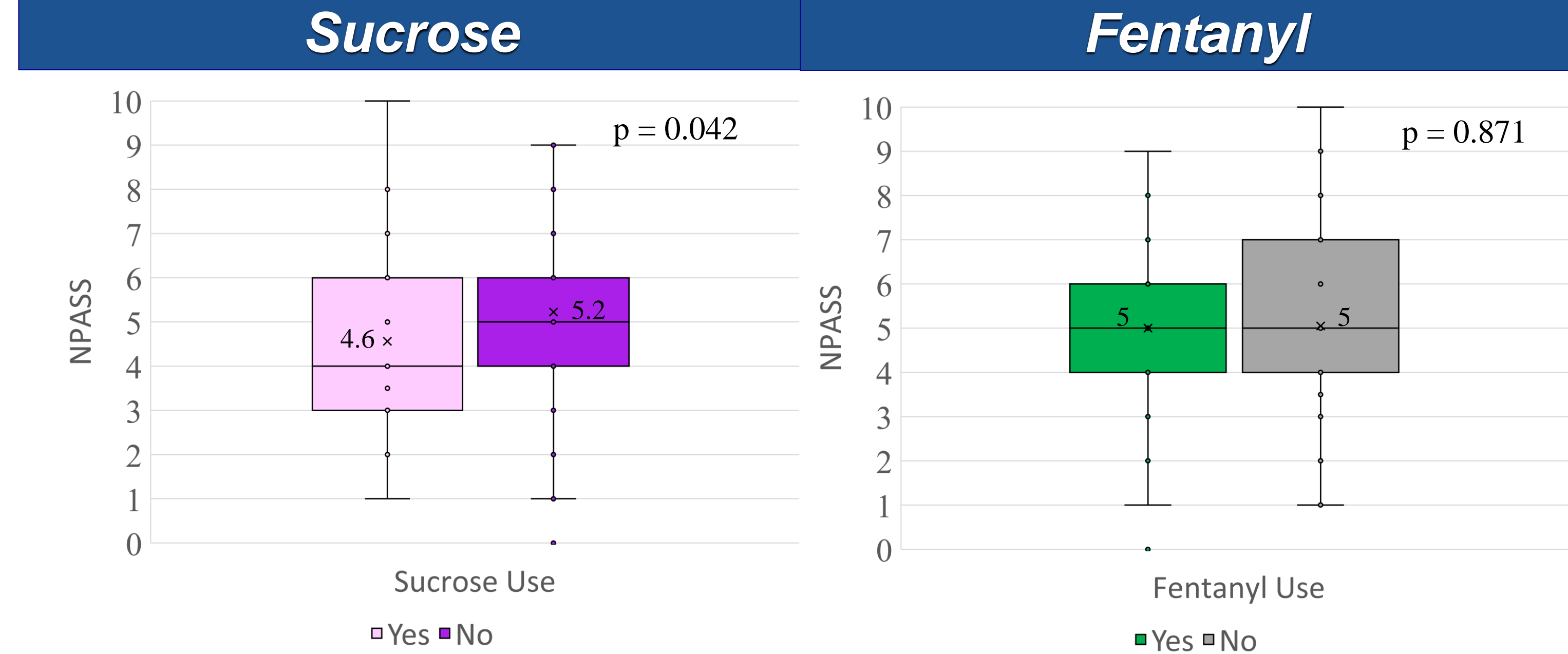
#### What was the pain level experienced?



#### What multisensory interventions were used?



### Impact of 'medical' interventions?

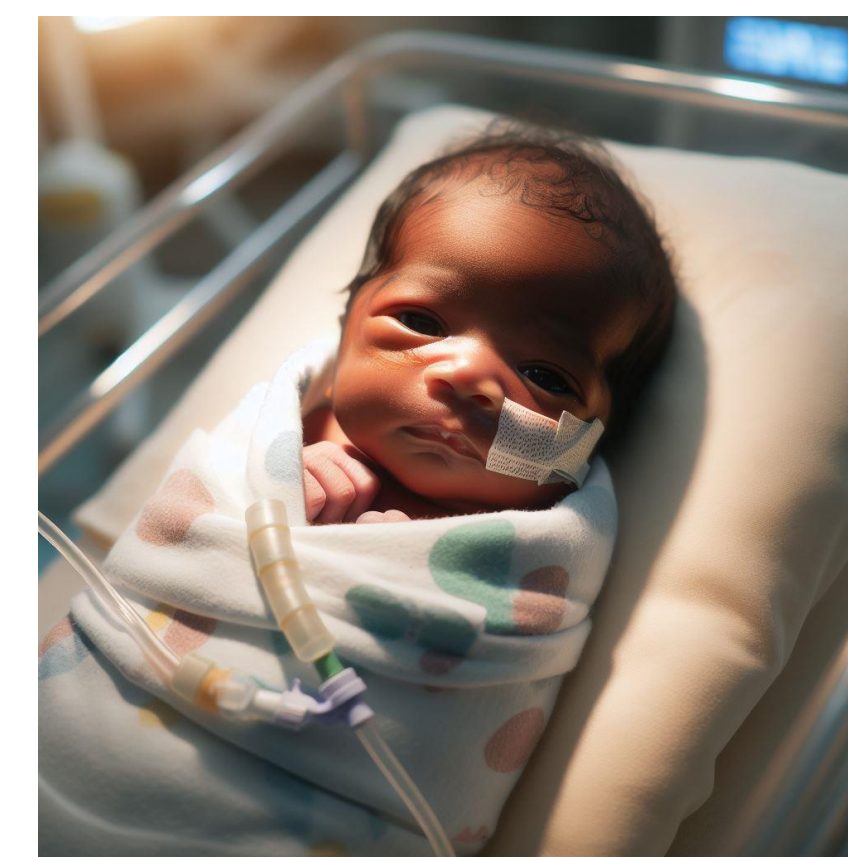


### Prolonged distress from ROP exams?

	Apnea/Bradycardia/Desats		Oxygen Demand	
	Increase (n = 42)	No Increase (n = 288)	Increase (n = 53)	No Increase (n = 280)
Gestational Age	26.9	26.6	25.9	26.8
Post-Menstrual Age	35.1	36.6	36.4	36.4
Birth Weight (g)	888	883	762	906
Room Air	9 (21.4%)	87 (30.2%)	4 (7.5%)	93 (33.2%)
Caffeine	20 (47.6%)	93 (32.3%)	21 (39.6%)	93 (33.2%)
Antibiotics	5 (11.9%)	13 (4.5%)	4 (7.5%)	16 (5.7%)

### Assessment from Baseline Data

- Neonates experience moderate to severe pain with ROP exams in our NICU
- Sucrose appeared to reduce the NPASS during ROP exams
- Fentanyl use was abandoned due to lack of efficacy and miosis impacting ability to complete ROP exams
- Neonates with ongoing concurrent medical issues could benefit from additional interventions
- Opportunities exist to improve the patient experience



### Aim

- Improve the patient experience with ROP exams in the Neonatal Intensive Care Unit (NICU) at Surrey Memorial Hospital
  - Specific aim to reduce the NPASS scores with ROP exams by an average of 1 point within a year

### PDSA Cycle 1 – April 2024 to June 2024

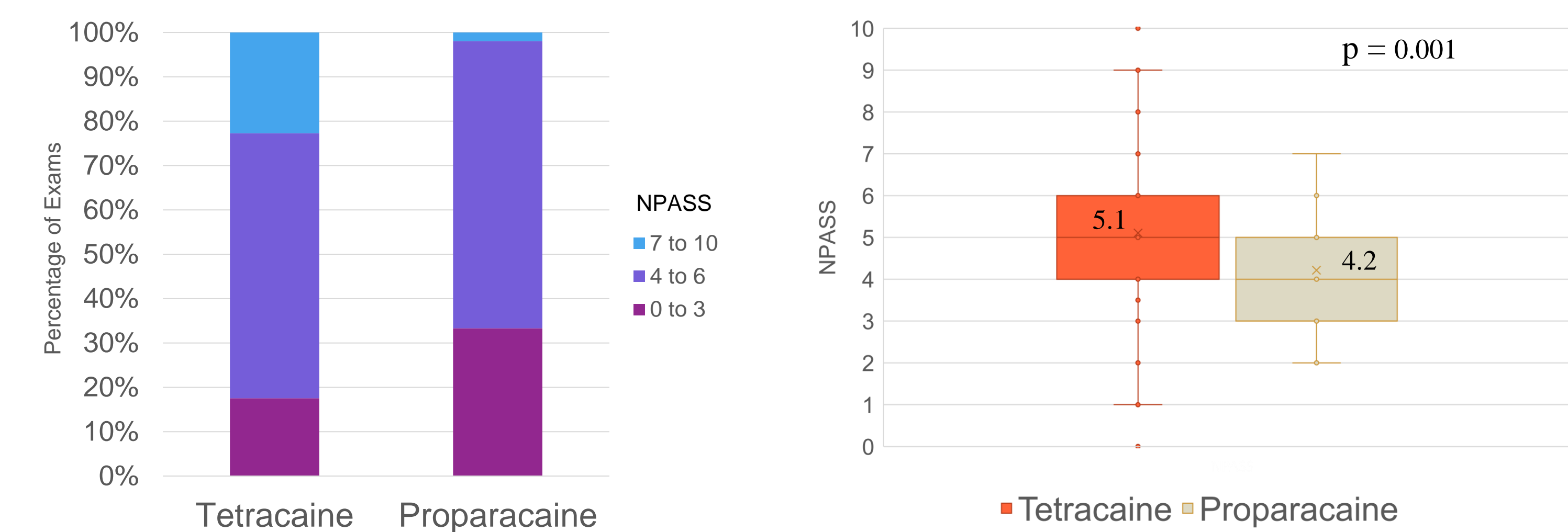
B Newby, Dr Eslami (Ophthalmologist)

### Design / Change Idea

- Plan:
  - How to reduce the pain experience? In adults tetracaine has been reported to cause more pain than proparacaine. Does the choice of anesthetic eye drops have an impact for neonates?
- Do:
  - Change the anesthetic eye drops from tetracaine 0.5% to proparacaine 0.5%
- Study:
  - Observe eye exams and complete a chart review

### Cycle 1 - Outcomes

#### Tetracaine compared to Proparacaine



### Assessment from cycle 1

- Proparacaine improved the patient experience by reducing pain scores by ~ 1 point
- Opportunities exist to further reduce pain

### PDSA Cycle 2 – To start soon

B Newby, Dr Moodley, FiCare Team (multidisciplinary)

### Design / Change Idea

- Plan:
  - Increase parent involvement with ROP exams
- Do:
  - Improve parent awareness for role and benefit from their presence (FiCare Team)
- Study:
  - Observe eye exams and complete a chart review



### Challenges / Lessons Learnt

- A multi-pronged approach, or ROP bundle, is needed to improve the patient experience
- Many staff discourage parental involvement in ROP exams
- Need to increase awareness of the patient experience amongst health care professionals and parents
  - Staff and parent education is required

### Disclosures

- Project leads have nothing to disclose
- Images generated by co-pilot