Enhancing Consistent Care for High-Risk Infants: **Innovative Multidisciplinary BPD Rounds**

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Aim

We aim to implement weekly BPD rounds in infants born <29 weeks gestation at high risk of BPD, to reduce the average duration of invasive ventilation from 10 to 8 days (20% reduction) by December 31 2025.

Importance

At BCWH, 60% of extreme preterm infants develop bronchopulmonary dysplasia, compared to as low as 20% in best outcome centres in Canada. Inconsistent decisions on over 30 lung care practices and lack of conclusive evidence are major contributors.

What we are missing:

- **Recommendations** that are concise, evidence-informed and locally agreed-upon
- **Standardized processes** for decision-making in complex cases
- **Team learning** opportunities
- **Effective strategies** for implementing care improvement

Innovative Principles

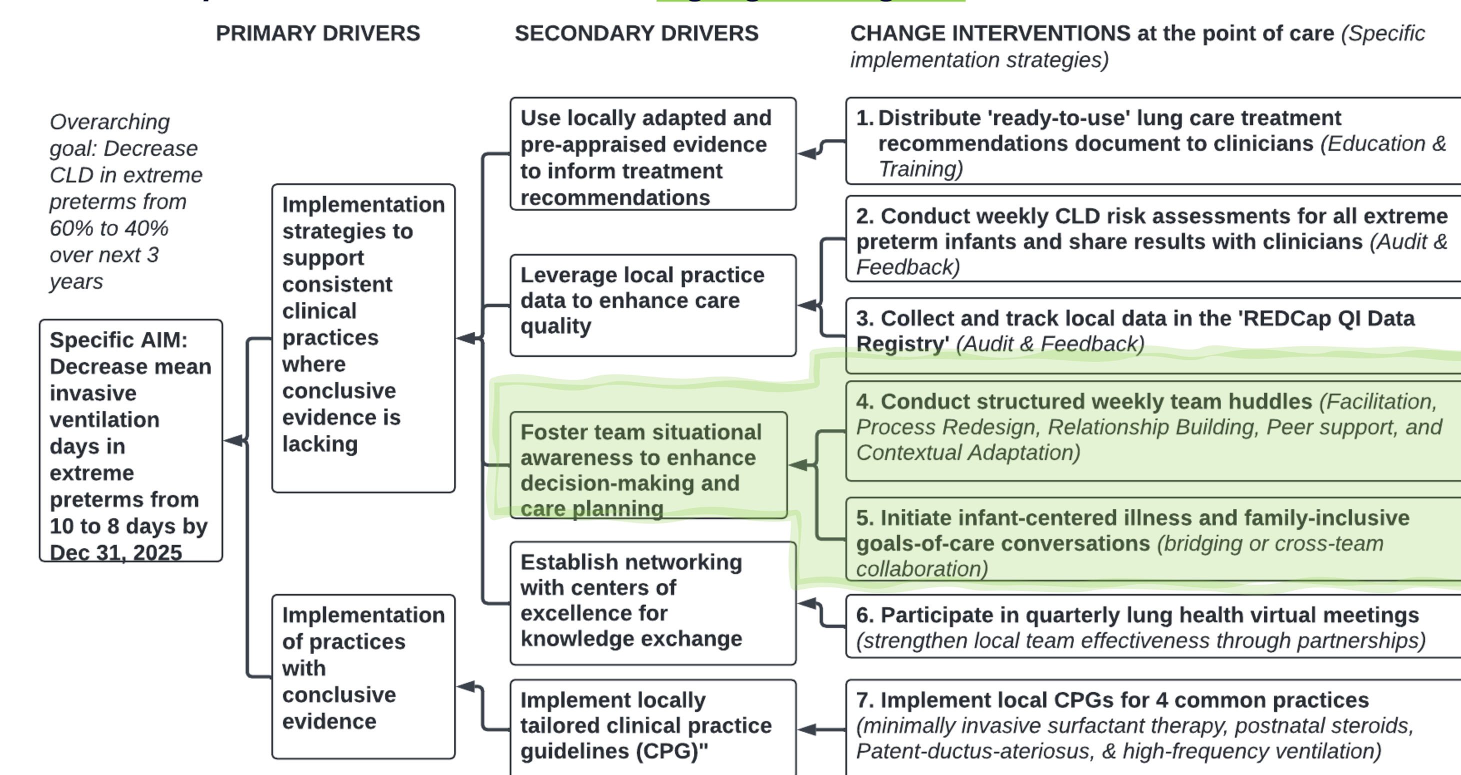
- Create multi-disciplinary **team situational awareness** of infant illness and trends
- **Gather input on optimizing care** to prevent moderate to severe BPD at 36 weeks
- **Focus on establishing weekly goals** in an inclusive and supportive space
- **Elicit feedback** for ongoing improvement

Measures

- Provider and parent satisfaction
- Adherence to weekly goal plan
- Time to first extubation/reintubation
- Moderate-severe BPD rates at 36 weeks PMA
- Intubation and ventilation days

Key Drivers

Fig. 1 *Key driver diagram for improvement of BPD rates at BCWH Aspects related to BPD Rounds highlighted in green.*



Changes

Fig. 4 *BPD rounds huddle*

Fig. 5 *List of infants with BPD risk estimates shared with MRP*

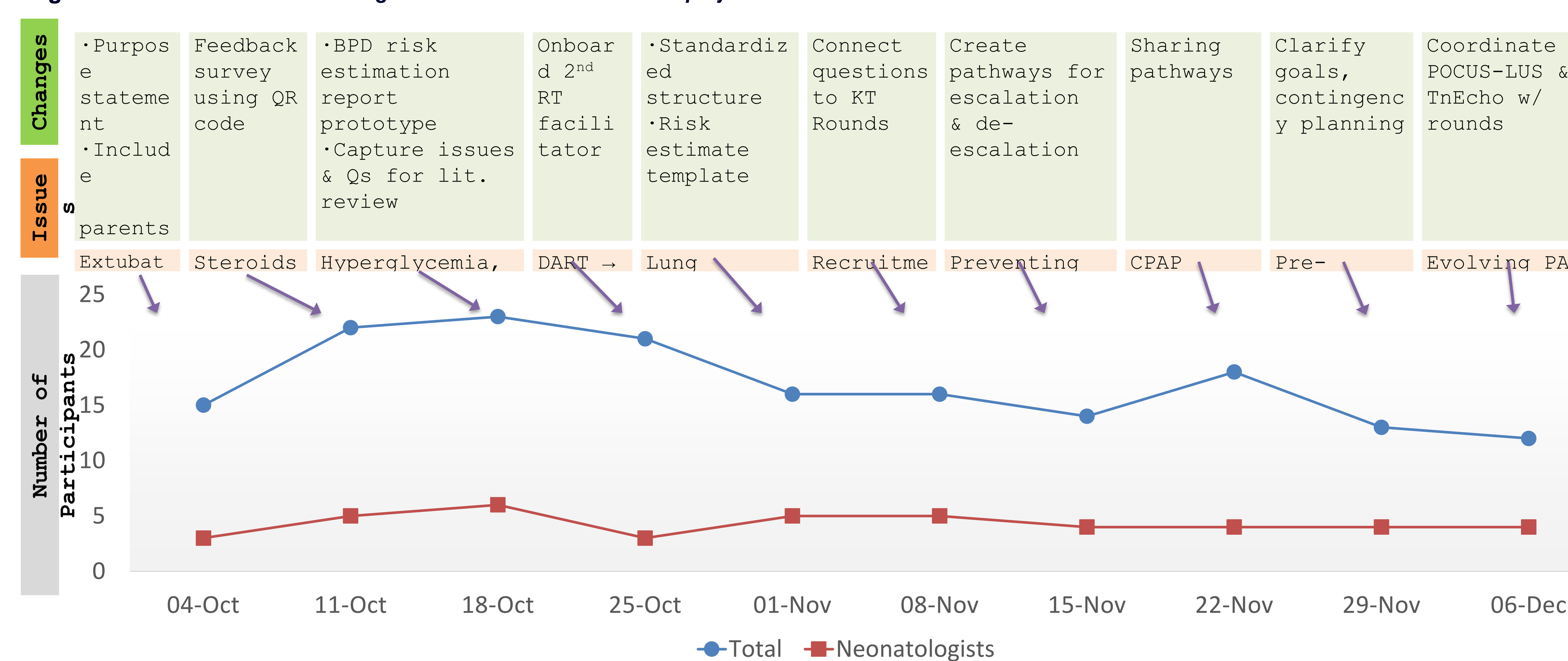
Team: SEA			BPD risk estimation (in %)				
Name of infant	Bed	DOL	Gr. 1	Gr. 2	Gr. 3	Mortal -ity	2 + 3 + Mortality
1. Example	701	28	23.1	40.4	29.0	4.2	73.6
2. Sample	875	14	0.0	3.6	43.8	26.0	73.4
3. Demo	837	21	29.0	31.8	30.6	6.2	68.6
4. Illustration	942	28	10.1	29.0	6.5	5.2	50.8

Fig. 6 *Abbreviation of standard structure of rounds developed in response to participants' feedback*

Standard work of BPD rounds on Fridays 30 min. per infant, focus on 2-3 issues/concerns			
Step	Person respo-nsible	Task	Goal
1	RT	• Read purpose statement • Distribute reports • Discuss infant's risk	• Preparation and setting stage • Familiarization of participants
2	Neo /. team	• Summarize hospital course • Active issues / concerns • Updates from multi-disciplinary team	• Team situational awarneess • Create shared mental model • Empower all participants to share concerns & solutions
3	Neo	• Summarize goals for next 7 days • Seek MRP and broader team's input • Readiness criteria, contingency plans	• Keep rounds focused on plan • Promote emergency preparedness
4	RT	• Document suggested goal/plan • Elicit evaluation	• Promote adherence • Track progress

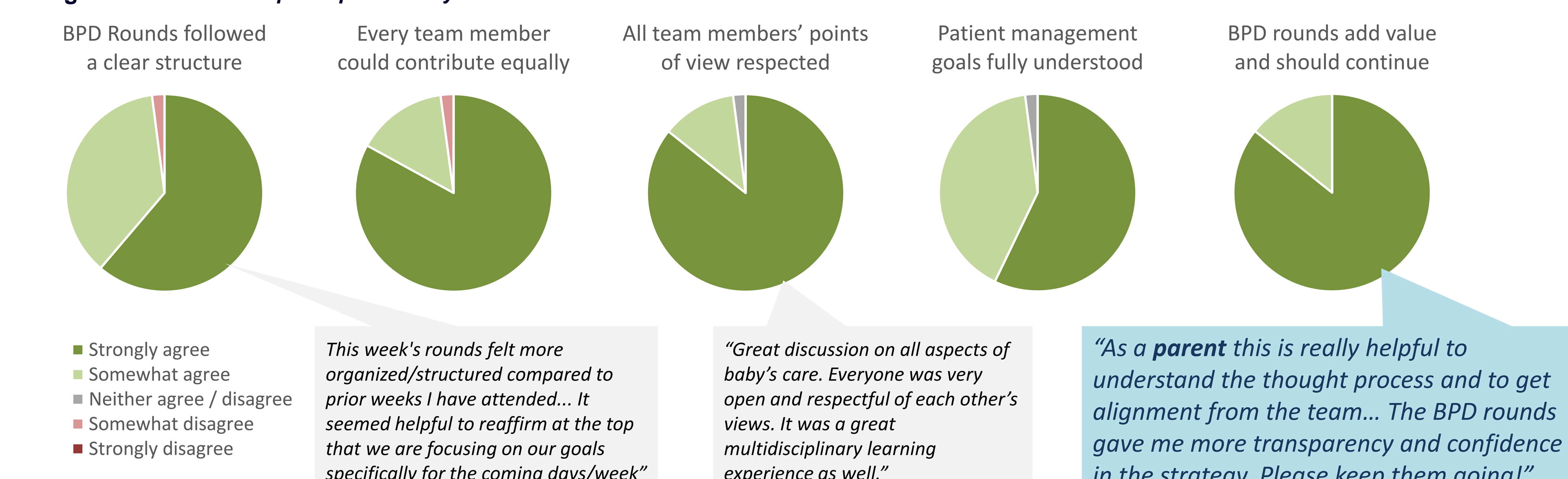
Results and Change Planning

Fig. 2 *Annotated run chart showing first ten weeks of BPD rounds project*



Participant Feedback

Fig. 3 *Feedback from participant surveys*



Learning Points

1. **Proactive planning & contingency**
2. **Providers and parents understanding trade-offs and uncertainty**
3. **Common pre- and post-extubation issues**
   - Atelectasis & recruitment
   - Abdominal distension with high pressures
   - Nasal breakdown
   - VAP and other infections
4. **Validation of team concerns**

Next Steps

- Data on long-term morbidity measures (BPD rates, ventilation days, other complications)
- Creation of local guidelines to assist shared decision-making

Conclusion

BPD Rounds are **implementable**, **well-accepted**, and **scalable** to other centers. This innovative model supports **consistent care** despite varying evidence.

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