



Optimizing the timing and collection of the Newborn Screen in the NICU

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Background/Introduction

- State-mandated Newborn Screening (NBS) helps detect rare and severe health conditions.
- Best practices recommend obtaining newborn screens **at birth, at 48-72 hours and 28 days of life**, as found in the *2019 Clinical and Laboratory Standards Institute (CLSI)*
- Previously, first NBS collection in the NICU was at 48 hours of life
- The goal of this QI initiative is to streamline the process of collecting initial NBS

Collaborative Team Members

- Ann Sanderson, Team Lead, Project Development
- Mathew Johanson, Team Lead, Project Development
- Juan Guillen-Hernandez, Team Lead, Project Development
- Jessica Scheller, Nurse Educator
- Elaine Henry, Quality Nurse Specialist
- Lindsey Gieselman, Electronic Medical Record Liasson
- Uduak Akpan, NICU Quality Director
- Ryan Moore, Unit Director
- Allyson Yelverton, Nursing Leadership NICU

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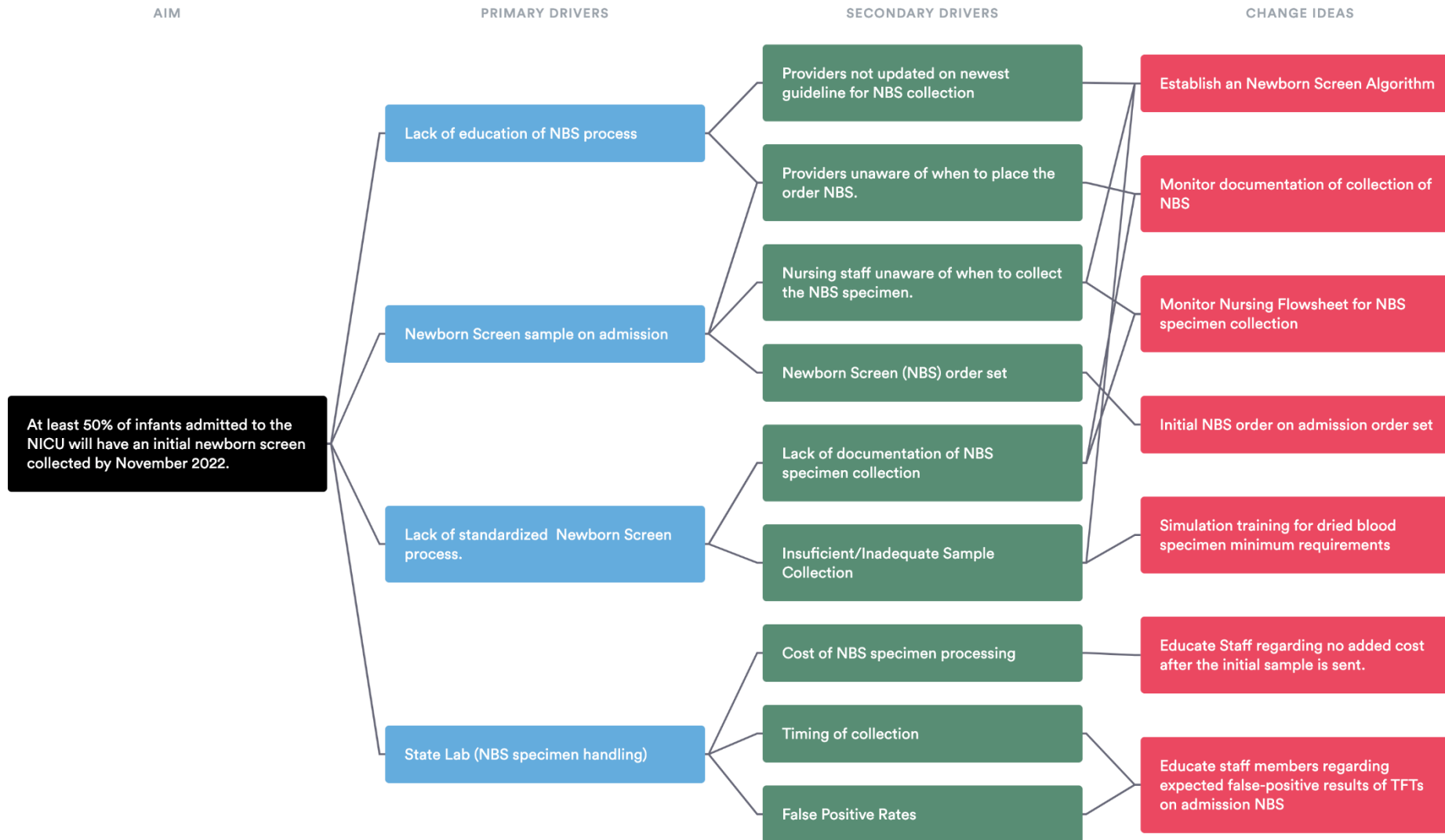
Aim Statement

At least 50% of all infants admitted to the NICU will have a newborn screen specimen collected at birth by November 2022.

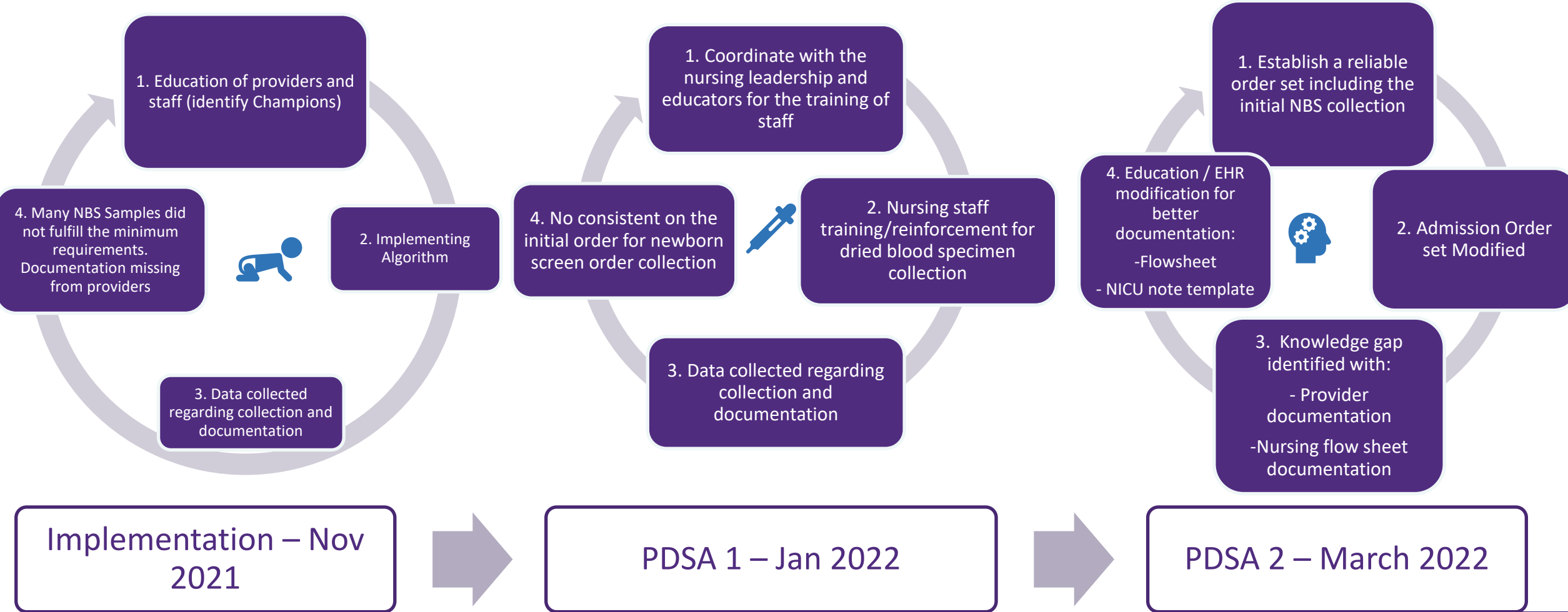
How will we know this change is an improvement?

- **Outcome measures:**
 - Percentage of NICU patients that had a newborn screen sent on admission.
- **Process measures:**
 - Percentage of NBS ordered by providers on admission.
 - Percentage of screens documented by the providers and nursing staff in EHR.
 - Percentage of screens collected before blood transfusion or parental nutrition started
- **Balancing measures:**
 - The volume of blood drawn (0.25-0.35mL)
 - Increased false positive results measured by number of calls from State Laboratory to report abnormal newborn screen

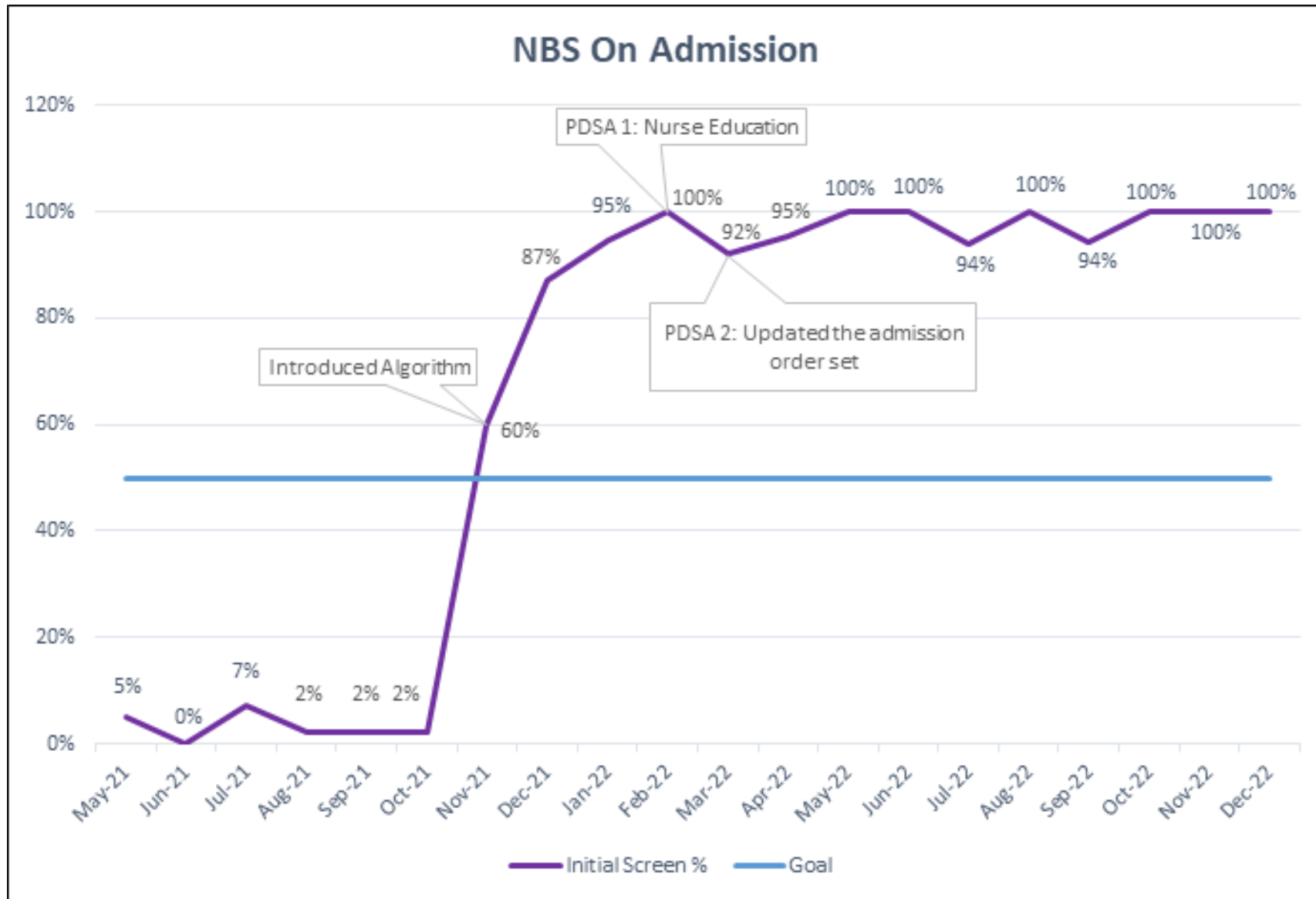
Key Driver Diagram



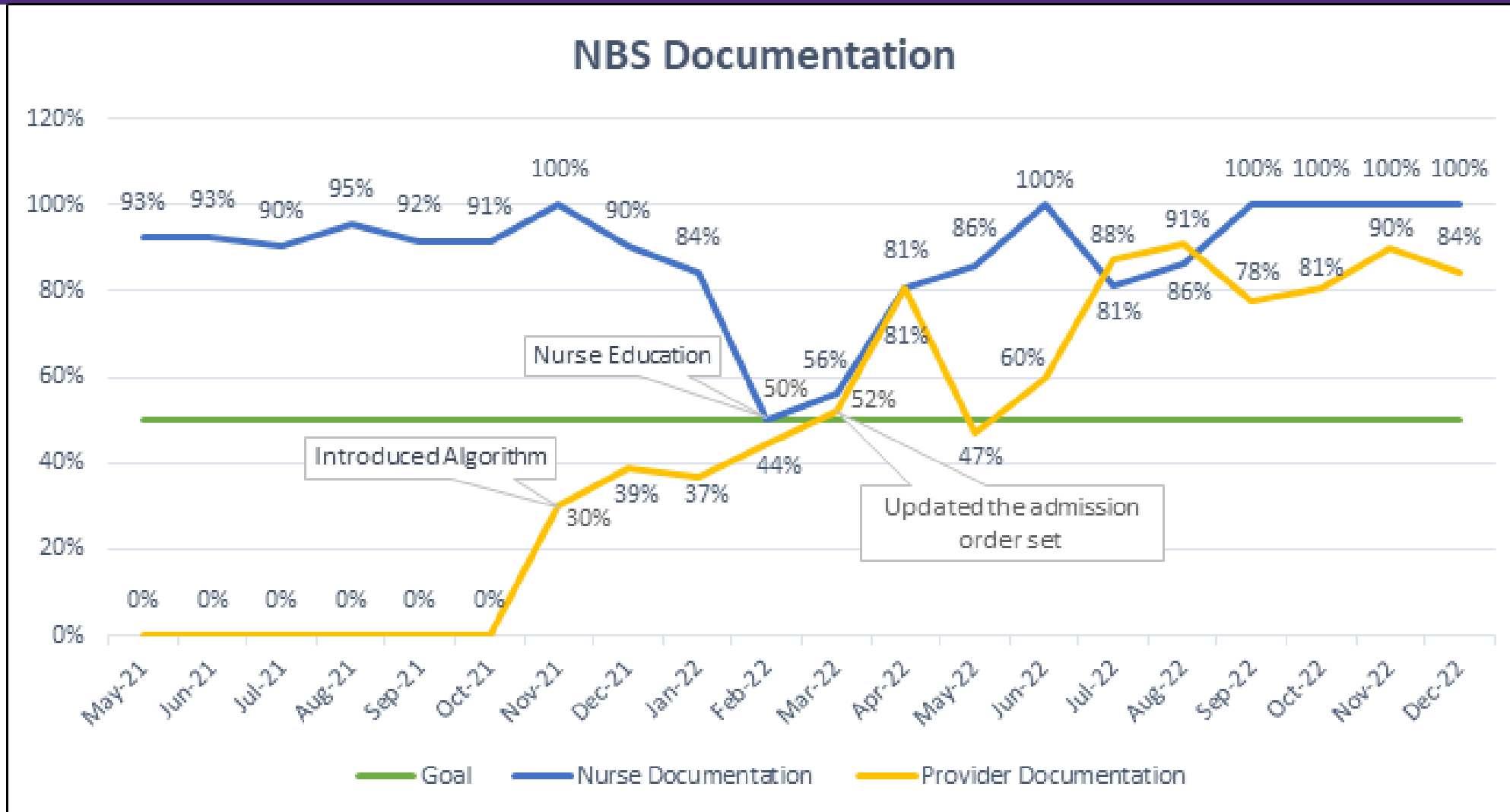
Improvement Strategies Employed



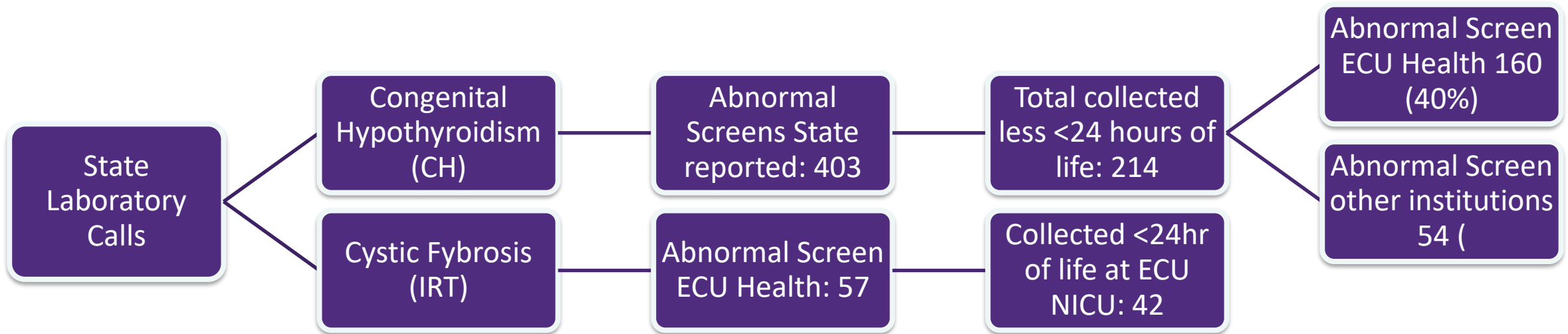
Outcomes



Process Measures



Balancing measures



Challenges Encountered in QI Process

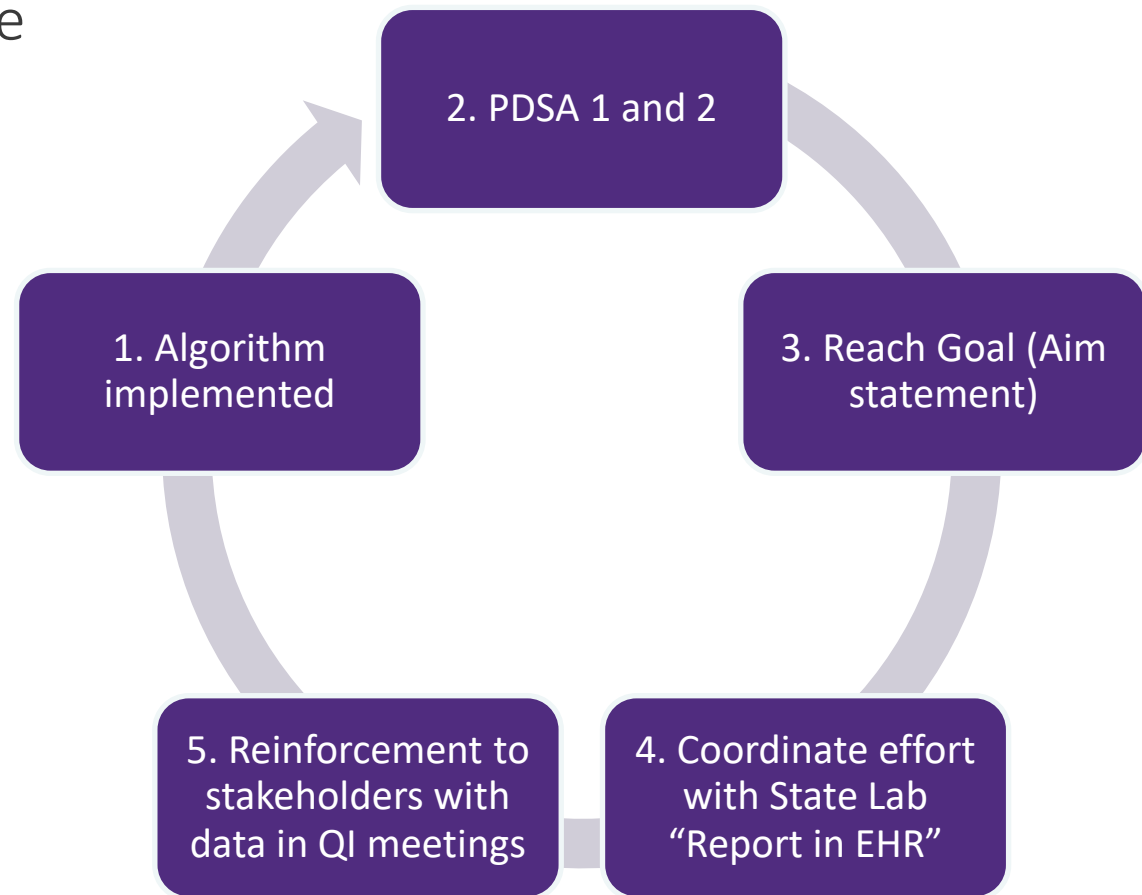
- Resistance to change by our staff, adopting new recommendations.
 - Positive deviance: identifying the innovators and early adopters
 - Data leads to change
- Implementing QI during COVID-19 pandemic
 - “Survival mode”
- Incorporating the initial newborn screen in the Admission order set.
 - Reach out to experienced QI specialists in the organization and have a solid case for why the change is needed.

Lessons Learned

- **Communication** works best when the people communicating the message are respected opinion leaders within the **same staff group** whose behavior they are trying to change.
- Reinforce the importance of the project by sitting in on improvement team meetings or visiting the unit involved in the project.
- Education is **key** to **sustainability**.
- Optimizing the order sets eased the standardization of care in the NICU.

Next Steps

- Working with State Laboratory to upgrade reporting system for EHR
- Nursing Professional Development Curriculum “NICU Academy”: **Newborn Screen Training**





Questions?