Rethinking Routine: Reducing Unnecessary Type & Screen Tests in Planned C-Sections

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Background and Context for Change

Caesarean section (C-section) is a common obstetric procedure, with hemorrhage being a frequent complication. Historically, preoperative type and screen (T&S) testing has been routine to mitigate transfusion risks. However, emerging evidence supports limiting this testing to high-risk cases without compromising patient safety.

Choosing Wisely Canada recommends avoiding routine group and screen testing at delivery unless no prior test was done during the current pregnancy or there is a high risk of hemorrhage or transfusion.[1] Similarly, the British Committee for Standards in Haematology states that for women without red cell antibodies at 28 weeks, further screening is unnecessary unless transfusion is anticipated.[2]

At the time of implementation, Alberta's healthcare system served over 4.5 million residents, with approximately 113,000 employees and 11,600 physicians, organized into five geographic zones: South, Calgary, Central, Edmonton, and North.

There are approximately 44 hospital sites across Alberta with labour and delivery units, ranging from large urban centres to smaller regional facilities.

While some sites already adopted strategies to reduce unnecessary T&S testing, these efforts were not standardized across the province. Given the system's scale and variation in birth volumes, implementation focused on high-volume centres where the potential impact was greatest.

The provincial project leveraged successful practices from Grey Nuns Community Hospital in Edmonton Zone where early adoption led to measurable improvements.

Aim Statement

Reduce the percentage of type and screen (T&S) testing completed for planned c-sections in 9 sites across the province to 20% by May 31, 2025

Family of Measures

- Outcome Measure
  - % of Type & Screen Tests ordered for Planned C-Sections (decrease)
- Process Measure
  - # of clinicians participating in audit and feedback/education sessions (increase)
- Balancing Measure
  - % of Stat Type & Screen Tests ordered for Planned C-Sections (remain constant)

Problem Characterization

To inform the initiative, interviews were conducted with six clinicians from six distinct sites across Alberta. These conversations provided valuable insights into current practices and decision-making processes related to type and screen testing for planned cesarean sections. Key themes from these interviews are summarized in the table below.

Theme	Key Insights
Decision Making & Local Policies	Decisions based on patient history, but thresholds vary by physician No standard protocol across province/some sites had routine T&S before C-section as standard No accountability or feedback on testing rates
Timing of Testing	T&S typically done pre-op, rarely in OR Elective C-sections scheduled days in advance Emergency cases often prompted precautionary T&S
Drivers for Testing	Risk aversion and fear of negative outcomes Peer pressure and ingrained habits Operational concerns (e.g., avoiding delays in high-volume settings)
Provincial Electronic Medical Record System (order sets)	A few local sites had their own tools or pathways Incomplete EMR rollout across sites Perception that EMR availability increased unnecessary testing Change management issues: "Just because it's there doesn't mean you have to do it"

Intervention

Change Concept & Intervention

To address variation in type and screen (T&S) testing for planned cesarean sections, the project aimed to standardize decision-making criteria and support implementation at high-volume sites.

Opportunities for Change

- No standardized criteria for ordering T&S testing.
- Wide variation in physician practices and comfort levels.
- Lack of feedback and data monitoring systems.

Intervention Strategy

Provincial criteria for T&S testing were developed by adapting local protocols from Grey Nuns Community Hospital, informed by literature and expert consultation with obstetricians, anesthesiologists, and transfusion medicine specialists across Alberta. These criteria were designed to guide consistent, evidence-based clinical decision-making.

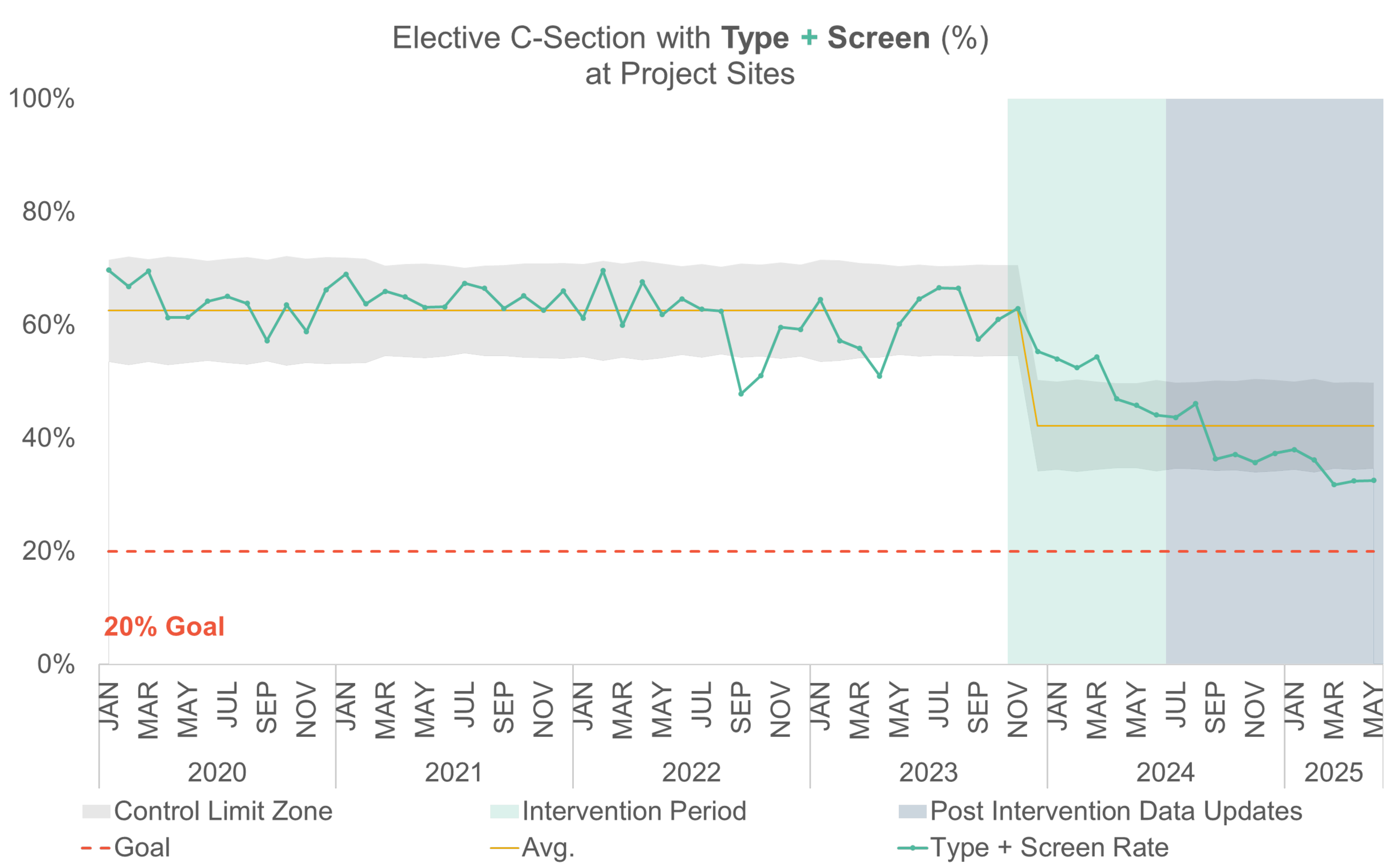
- Implementation focused on nine high-volume sites and included:
- Identifying local site champions (obstetrician, anesthesiologist, nurse) to lead change.
- Hosting audit and feedback sessions led by Provincial Clinical Leads to share data, evidence, and discuss barriers.
- Creating a provincial dashboard to monitor testing rates over time.
- Aligning rollout with EMR implementation through two coordinated launch phases.
- Developing a provincial FAQ to support consistent messaging.
- Sharing bi-monthly practice data with site champions to track progress and maintain engagement.

Predictions

- Standardized criteria would reduce unnecessary T&S testing.
- Local champions and regular feedback would support sustained change.
- High-volume sites would show measurable improvements serving as a models to inspire adoption at other sites across the province.

Project Results

Results since the launch indicate an absolute reduction at project sites of 19% (63% to 44%) in testing. Variation in practice also decreased from a 63% to a 41% spread between the highest and lowest testing sites involved. Balancing measure of stat orders remains unchanged at 28%, and a total of 14 audit and feedback/education sessions were completed with 171 clinicians that participated. Testing at a few non-project sites also appears to have decreased during the intervention window contributing to decreased testing across the province.



PDSA Cycles

Cycle	Description
Plan	Developed a provincial implementation plan with two launch phases, targeting high-volume sites. Criteria for T&S testing were established based on local protocols and expert consultation.
Do	Launched the first group of sites, engaging local champions and presenting audit and feedback sessions.
Study	Collected feedback from initial sites, refined presentation materials, and identified opportunities to improve engagement (e.g., leveraging existing meetings).
Act	Created a provincial FAQ resource and adjusted the approach for the second launch phase. Continued bi-monthly data sharing to support ongoing improvement and spread

Conclusions

Current Status

The project has transitioned into the sustainment phase, with several strategies in place to support ongoing monitoring and practice consistency:

- Zone Transfusion Medicine Committees regularly review zone-level data.
- Site Operational Leaders receive dashboard alerts for continuous data monitoring.
- Provincial criteria and FAQ are publicly available on an external website to ensure accessibility for all staff.

Lessons Learned

- Scheduling audit and feedback sessions was difficult; however, sharing materials via email and providing regular data updates proved effective. Some sites showed improvement without formal sessions.
- Accessing transfusion data was challenging and required manual chart reviews.
- Sharing success from local sites and ongoing data helped strengthen engagement.
- A clearly defined project scope, evidence-based focus, and measurable goals supported effective implementation.
- Attempts to embed the criteria into the provincial EMR system were unsuccessful, highlighting a key barrier and future opportunity.

Team Reflections

Project success was driven by strong collaboration between local site champions and a dedicated provincial team, including clinical leaders, project managers, and a data analyst.

Next Steps

The provincial project team will reconvene in one year to review data and assess progress toward sustained practice change.

References:

1. Transfusion Medicine - Choosing Wisely Canada
2. White, J., Qureshi, H., Massey, E., Needs, M., Byrne, G., Daniels, G., Allard, S. and (2016), Guideline for blood grouping and red cell antibody testing in pregnancy. Transfusion Med, 26: 246-263. https://doi.org/10.1111/tme.12299

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