



Improving the treatment of children's presenting and procedural pain during emergency department visits: A province-wide quality improvement collaborative

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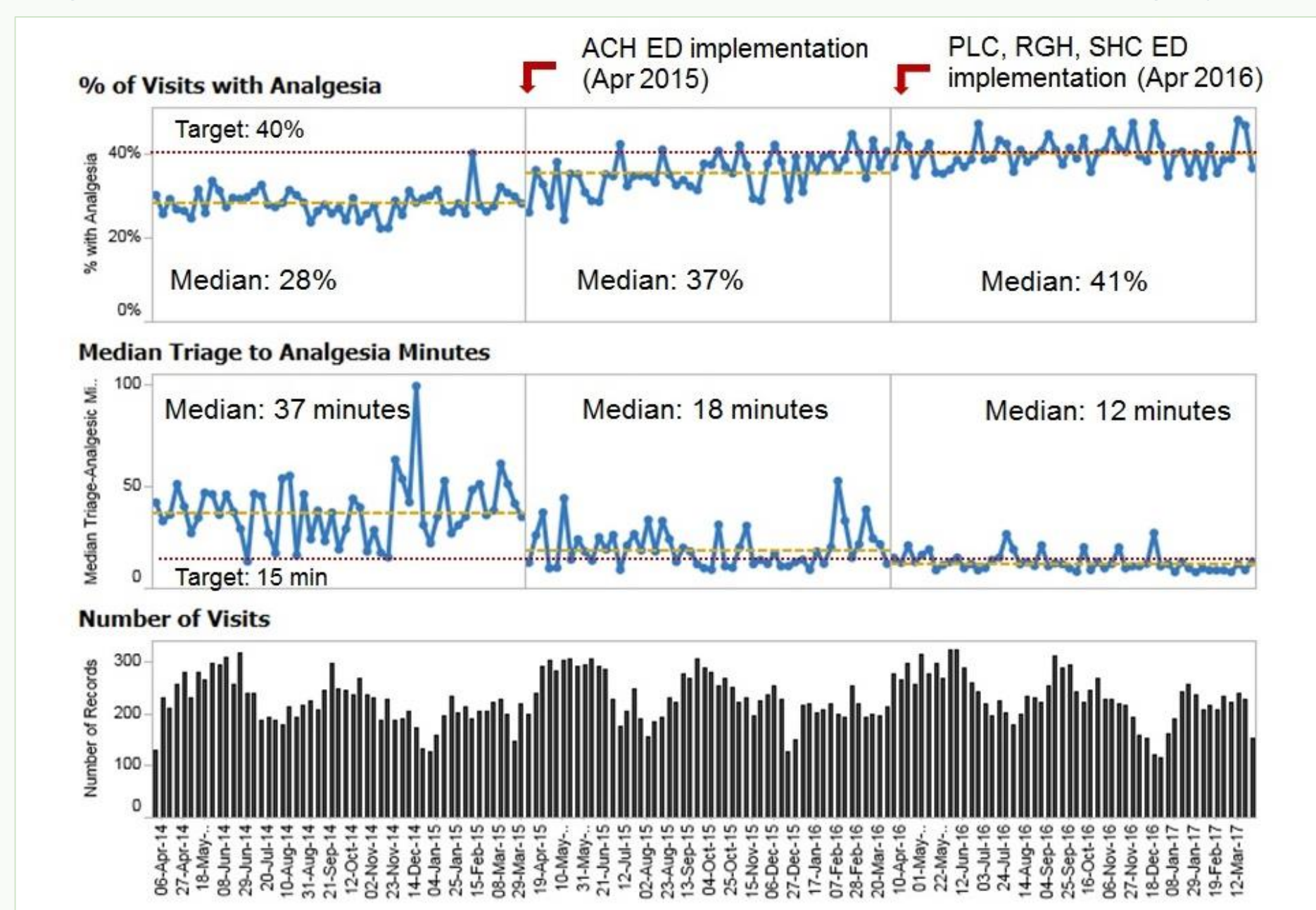


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Background

- Undertreated pain in children causes significant short and long term harm.
- A recent quality improvement collaborative (QIC) led by our team was successful in improving treatment of children's pain from limb injuries across 4 EDs in our city (Figure 1).
- The QIC interventions centred on a "Commitment to Comfort" program developed by our team with input from staff, patients, and families.
- Our team then established a new QIC among EDs across Alberta to improve treatment of presenting and procedural pain in children.

Figure 1: Implementation of "Commitment to Comfort" in all Calgary ED's



Problem

- Fractures are a common source of presenting pain in children visiting an ED. It was not known how often children with a fracture in Alberta received analgesia and how long they waited for treatment.
- Needle pokes are a common source of procedural pain in children visiting an ED. It was not known how often children in Alberta received topical analgesia before a needle poke.



Aims

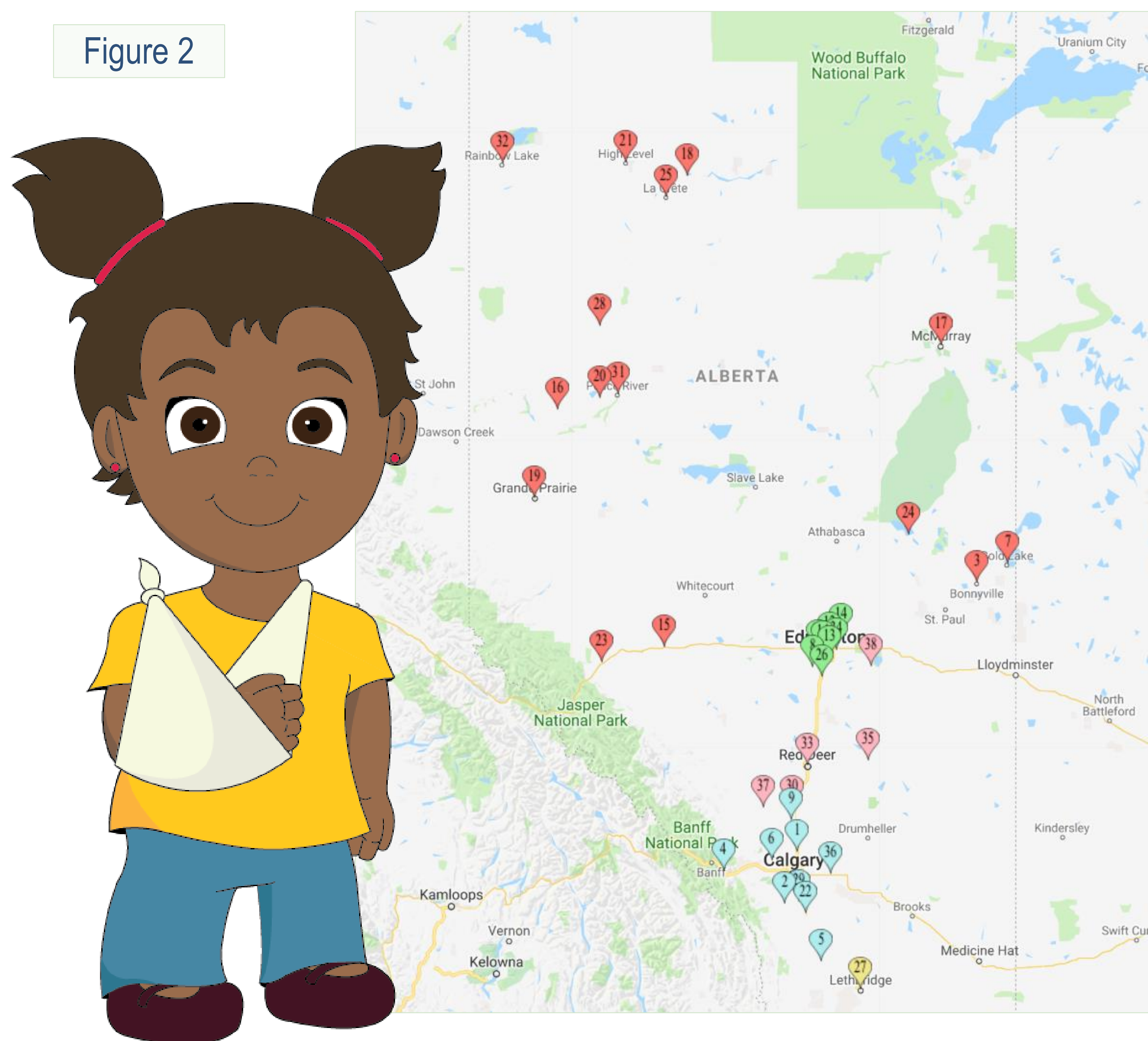
For children age <17 years with fractures:

- Improve the proportion with a recorded pain score from 23% to 50%
- Improve the proportion who receive analgesic medication from 34% to 50%
- Reduce the median time to analgesia from 57 minutes to 30 minutes

For children age <13 years who receive a needle poke:

- Improve the proportion receiving topical analgesia from 12% to 50%

Figure 2



Methods

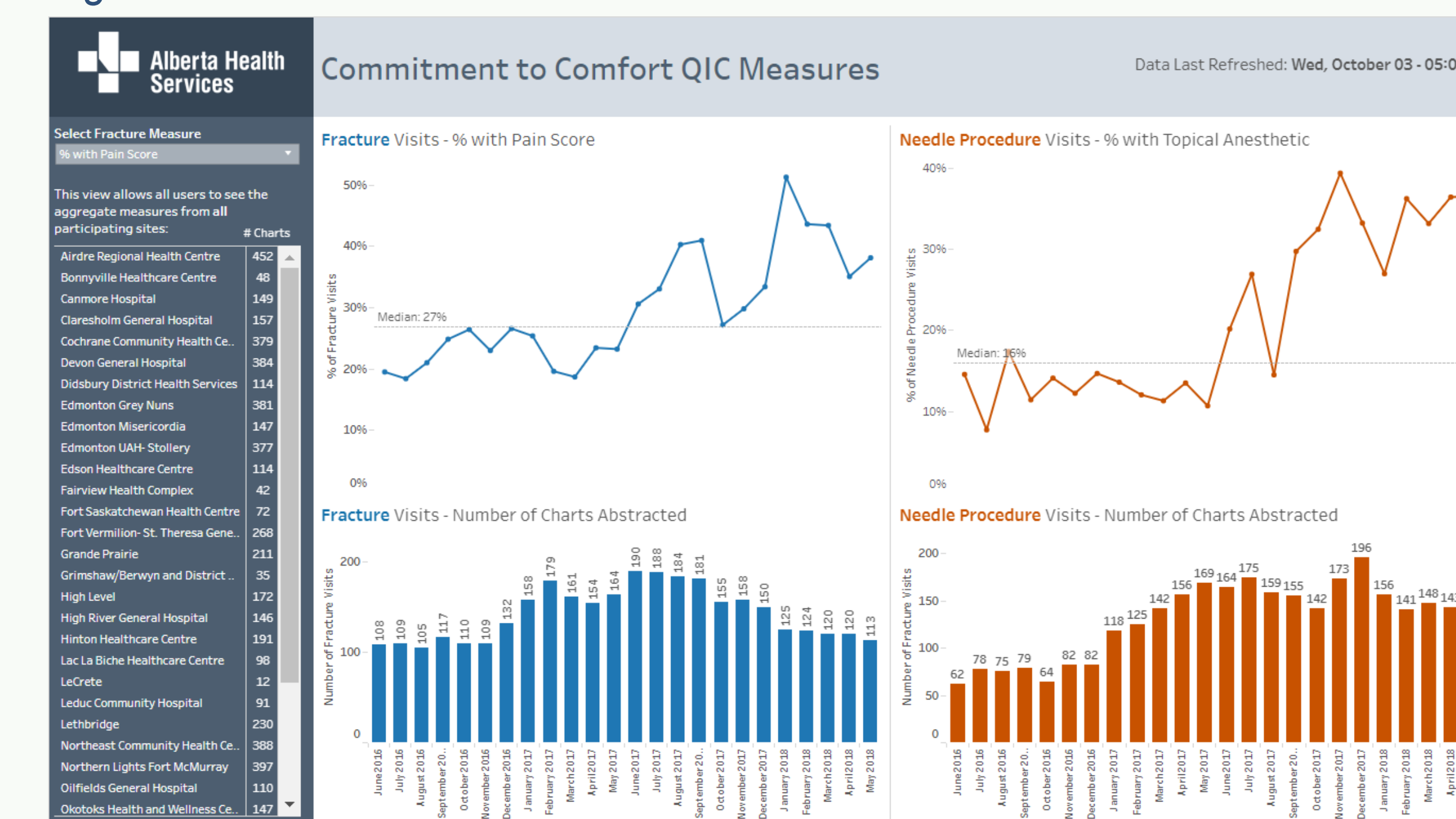
- Invitations to participate sent to all 113 EDs in Alberta; needs assessment completed.
- Each site asked to form a project team, participate in monthly webinars, develop key driver diagrams and project aims, undertake PDSA tests of change, and measure performance.
- Sites given list of 20 randomly selected charts per month for audit; entered in REDCap.
- Baseline data collected for June 2016 – May 2017. Implementation phase began June 2017 and will end November 2018.
- Site-specific and provincial dashboards created.
- All sites received "comfort kit" consisting of distraction items for children as well as educational materials.
- Measures of presenting pain: Proportion of children <17 years with a diagnosis of fracture who have a documented pain score, proportion who receive an analgesic medication, and minutes to analgesia.
- Measure for procedural pain: Proportion of children <13 years who receive topical anesthetic prior to needle poke for a laboratory test
- Balancing measures: Length of stay for pediatric patients and all patients.
- Run charts were used to detect special cause.
- Difference in proportions were compared using χ^2 .
- Final analysis will include interrupted time series.



Results

- 34 of 113 invited sites (30%) agreed to participate, including rural and regional representation from all geographic zones
- 7640 visits since June 2016 analyzed
- Comparing first 9 months following implementation to preceding year (Figure 3):
- Proportion of children receiving topical anesthetic prior to needles increased from 13% to 33% ($p < 0.0001$).
- For children with fractures, the proportion with pain scores increased from 23% to 34% ($p < 0.0001$), proportion receiving analgesic medication increased from 34% to 39% ($p < 0.01$), and median minutes to analgesia decreased from 57 to 31 ($p < 0.001$).
- Special cause (shift) has been achieved for proportion receiving topical anesthetic, proportion given a pain score, and time to analgesia.

Figure 3

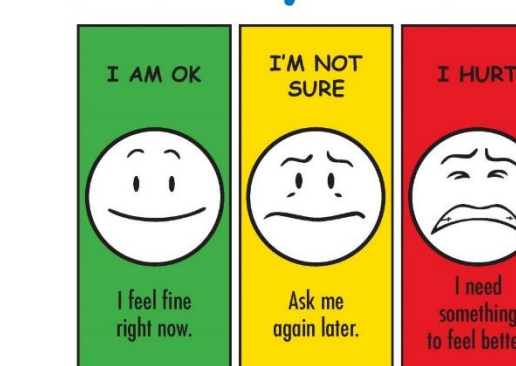


Impact

- This province-wide QIC has resulted in significant progress toward aims during the first year of implementation.
- The QIC approach shows promise for improving pain outcomes in children visiting diverse EDs across a province.



How are you feeling?



Let's work together to reduce pain.

We can help by:

- helping kids rate their pain
- giving pain medicine (ask about no-needle options)
- using comfort positions for procedures
- offering items on our comfort menu

Kids can help by:

- talking to us - ask questions and let us know what you need and how we can help

Grown-ups can help by:

- letting us know if your child isn't comfortable
- providing distraction, reassurance, a soothing voice, or a loving touch
- talking about how to support your child during a procedure

Choose the face that shows how bad your pain is right now.



Our commitment to comfort:

We'll do our best to promote comfort by helping to lessen pain and anxiety. Please let us know what we can do to help.



Alberta Health Services