

Improving the patient experience of intravenous therapy by utilizing patient-centred data

Lena Cuthbertson¹, Sarah Ashton², Chung Liu³ and Joy Dacquisto⁴

Abstract

Peripheral intravenous cannulation (PIVC) is one of the most commonly performed invasive procedures in healthcare. By developing a better understanding of IV therapy from the patient's point of view, we can improve the patient experience.

To achieve this goal, members of the Lower Mainland IV Therapy (IVT) Working group in partnership with patients and the provincial supplier of vascular access products (BD), mapped where and how the experience of PIV therapy could be impacted during the patient's healthcare journey. The group then designed questions focusing on what could be measured from the patient perspective.

Leveraging British Columbia's Patient-Centred Measurement (BCPM) program, 8 questions were added to the 2018 BC Emergency Department Survey. Of the 14,076 patients surveyed, 28% reported having at least one IV while in an ambulance or an Emergency Department. To our knowledge this is the largest, scientifically validated survey globally on IVT from the patient perspective.

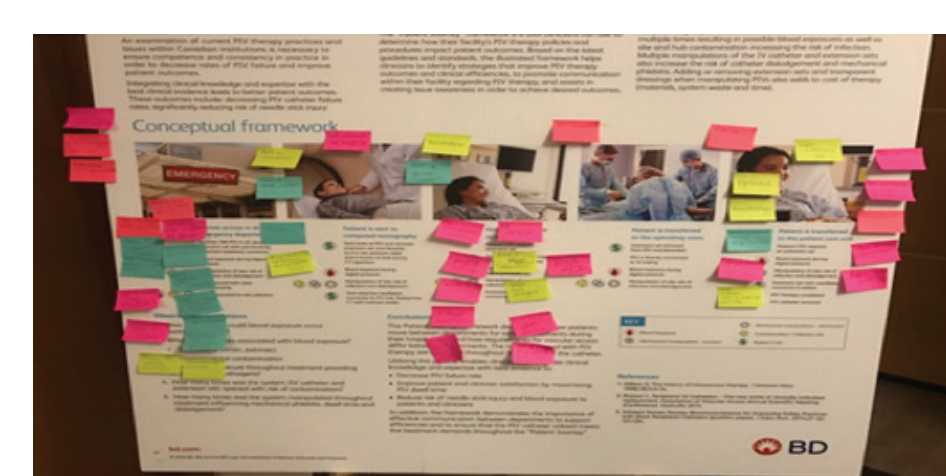
Weekly monitoring of patient responses, through the BCPCM's web-based Dynamic Analysis and Reporting Tool (the DART), showed key themes and opportunities for improvement. While 39% of patients reported experiencing a problem with their IV, only 59% of those patients reported being advised to contact a nurse if they experienced key indicators such as pain, redness around the catheter, swelling or leaking.

A test of change introduced a patient information card designed to educate patients when to notify a healthcare worker about their PIVC. Utilizing qualitative comments from patients and quantitative data from patients' survey responses, the members of the Lower Mainland IVT Group conducted a brainstorming session designed to envision an aspirational future state.

Background

Evidence Informed

- 90% of patients entering hospital have an IV – and almost 80% of those are PIVs
- 60% of PIVs fail before they complete their intended purpose – many within the first 48 hours
- Emergency Departments insert 40%-60% of all PIVs



Insights can be messy and fun to map!

Our healthcare system is moving *from* price-based selection of products and vendors to selection that is values-based, focusing on improving patient outcomes and improving efficiencies. This was the impetus for the partnership between the BCPCMWG and BD in collaboration with a team of clinical/operational experts from the Lower Mainland in BC now called the BC Lower Mainland IV Therapy Working Group (IVTWG - see references for a list of collaborators). The team initially met in March of 2017 to:

Capture insights from IVT clinician experts and patients with lived experience of IVT to:

- Map the points along the patient journey where the experience and outcomes of IVT could be impacted
- Determine what mattered (most) to the patients and clinicians to measure at these points

Method

2018 ED Survey IV Questions Module V1.0 (June 2017) cognitive testing (August 2017)

- Patients recruited from St. Paul's and Mount St. Joseph Hospital EDs
- Changes based on results of cognitive testing led to v2.0

Collaborators: Agnes Black (PHC), Amera Taylor (VCHA), Celina Woo (BCCW), Connie Wooten (BD), Erin Davidson (VCHA), France Harvey (VCHA), Harbir Sidhu (FHA), Jane Kerr (PHC), Janine Minelly (BCCW), Joanne Fernando (BCCW), Jocelyn Hill (PHC), Justine Horner (FHA), Kristie Naayer (FHA), Lisa Jacques (BCCW), Patty Hignell (FHA), Ruth Nichol (VCHA).

Sources
1,3 British Columbia Office of Patient-Centred Measurement & Improvement, Vancouver, BC
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8-question IV module included in 2018 ED Survey (Jan 1 to March 31 pt visits)

- Did you have an IV inserted? (if yes...)
 - Who put the IV in your vein?
 - Were you told what to expect?
 - How many IV insertion attempts were made?
- Were you told to call a nurse if you had any IV problems?
 - Did you experience any of the following problems with your IV?
 - Were your problems handled in a timely manner?
 - Would your experience make you more or less worried about future IVs?

Implementation

- Introduced the IVT module as a skip question via a phone interview or online with the BC Emergency Department Patient Experiences with Care (EDPEC) and VR-12/EQ-5D-5L surveys
- Included in surveys of all sampled patients who visited one of 108 BC EDs between January 1 and March 31, 2018
- While in the field, a PLAN-DO-STUDY-ACT cycle was put in place in 3 BC EDs to address initial results that showed poor scores in questions about being told “What to expect” and “When to call a nurse”
- The Office of PCM team produced weekly provincial, health authority and site-level reports of the results of the IVT questions, pulling scores from our DART: analysis of week-to-week data points added to reports along with qualitative comments/narratives from patients
- 14,076 patients responded to the survey = 40% response rate

Results

Significant differences in pediatric versus adult experiences:

- 37% first-stick success reported for peds (10 days to 17 years) (% of the time getting the IV in the first time) versus 63% in the adult (18 yrs+) population

Higher level of complication rates with children than adults

- 55% in peds versus 39% in adult population

Across all age groups, patients were not consistently advised to report complications

- Across all age groups, scores were below the target (range of 54%-67%% versus the 80% target established by the PCM/BD WG

Patients had a lot to say about their IV experiences

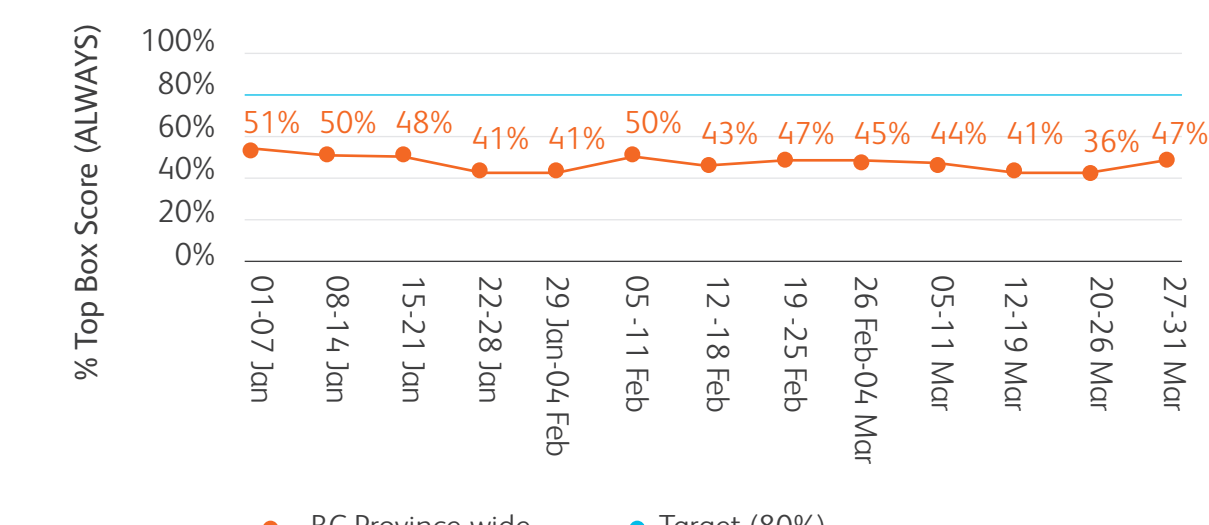
- Search for terms in the open text/narrative/qualitative data, mentoring
- “IV/IVs,” “Needle,” Intravenous,” “Drip” yielded:
 - Acute IP 2016/17 sector survey yield = 290 comments
 - BC ED 2018 sector survey yield = 108 comments

Only 40.3% of patients who reported having received an IV in a BC ED reported that nurses, doctors or paramedics ALWAYS handled problems with their IV in a timely manner; this was the 10th lowest scoring question of 149 questions on the BC ED 2018 survey.

IV3. Were you told what to expect when the IV was being put into your vein? And, because we balance the experience and learning from an “n of 1”...

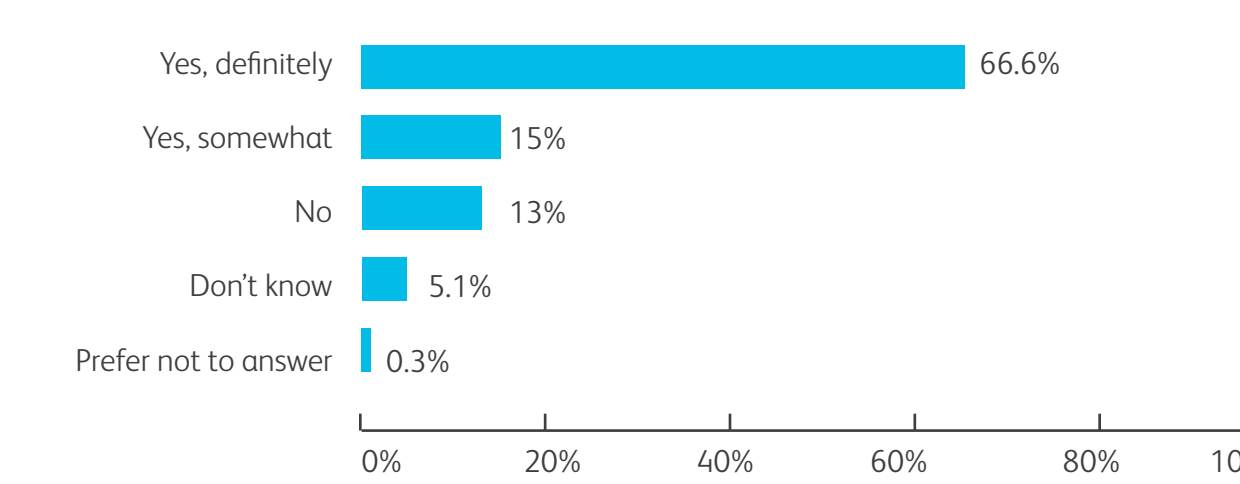
“I had a horrible experience with everyone trying to access a vein. It took 6 nurses approximately 20 tries to locate a vein! It was awful! My arm was so very bruised and sore. I went from one person to the next and none could draw blood or get a line for a CT Scan. I've never had such a horrible experience! Other than that, everything was wonderful!”

IV7. Patients who reported that during this ED visit, nurses, doctors or paramedics ALWAYS handled the problems with their IV in a timely manner



*Percentages represent BC provincial level responses.

IV3. Were you told what to expect when the IV was being put in your vein?



Source: BC Patient-Centred Measurement, Reporting and Improvement 2018 survey (n = 3867)
Note: Provincial scores are weighted.

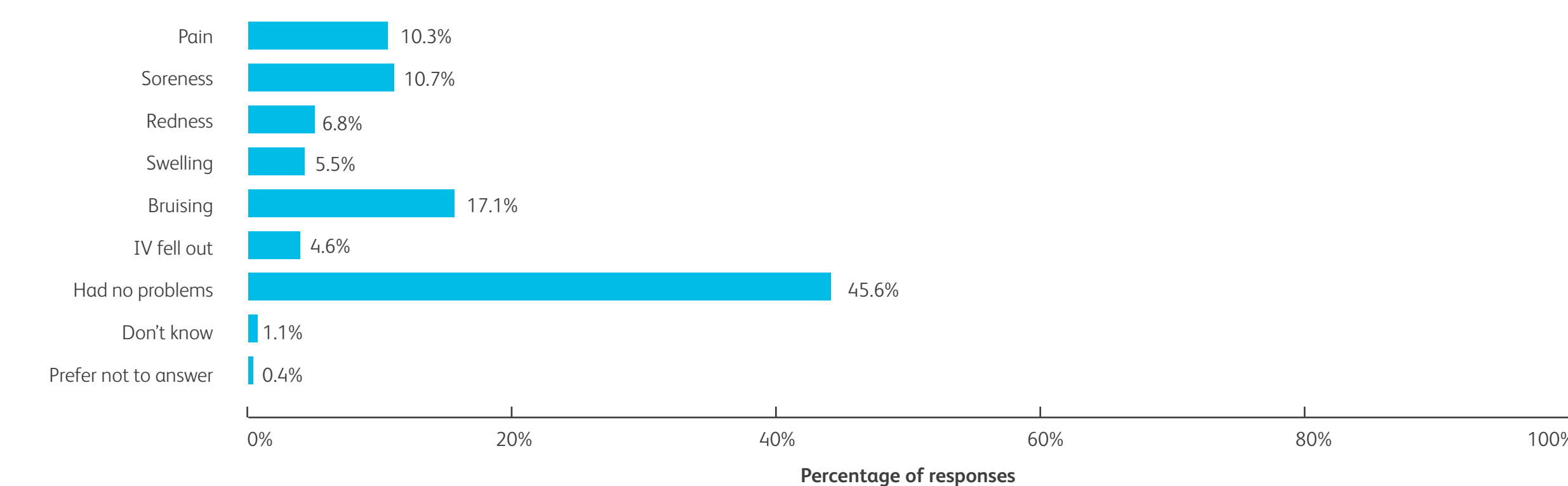
...with the results from a representative sample.

IV7. During this emergency department visit, how often did your nurses, doctors or paramedics handle the problems in a timely manner?

Never 5% Rarely 9% Most of the time 44% Always 40%

Test of Change: Script and laminated cards distributed at 3 EDs to address Q.IV5 (told to call a nurse if had any problems due to the IV)

IV6. During this emergency visit, did you experience any of the following problems with your IV? (Check all that apply)



Source: BC Patient-Centred Measurement, Reporting and Improvement 2018 survey (n = 5180)
Note: Provincial scores are weighted.

Note: Piloted at 2 EDs in British Columbia: Chilliwack General Hospital and St. Paul's Hospital.

BD Patient Information Card (2018) Piloted at 2 EDs in BC: Chilliwack General and St. Paul's Hospital.



Patients used problems as context for highlighting specific processes that were problematic:

“I think the bad bruising I received after the IV was removed was due to the way it was removed more so than the way it was administered.”

“The ER staff had trouble starting the IV on my infant son and appeared to lack experience in locating the proper IV equipment for infants and securing the IV once established. Multiple attempts were done before they realized they had too long a needle. The privacy in the ER dept. was minimal. I could hear the nurses and doctor talking about myself and my choices for my son in requiring an IV and felt it to be unprofessional.”

Next Steps

The Working Group has established 3 workstreams of clinicians to address:

- Defining strategies to improve nursing competencies related to IVT
- Developing patient education/communication materials that align with patient safety principles (taking responsibility for own care)
- Building leadership awareness of the results of Q.IV7 as the 10th lowest scoring item on the BC ED 2018 survey and obtaining leadership support for paid nursing education to increase patient satisfaction and decrease adverse events related to IVT

In addition, the BC Office of Patient-Centred Measurement will be conducting secondary analyses of the quantitative and qualitative IVT results, including linkage to PROMS scores.

For further information please contact:
Lena Cuthbertson lcuthbertson@providencehealth.bc.ca
or Sarah Ashton Sarah.Ashton@bd.com