

Implementation of an Integrated IV Catheter System: the Vancouver General Hospital Experience

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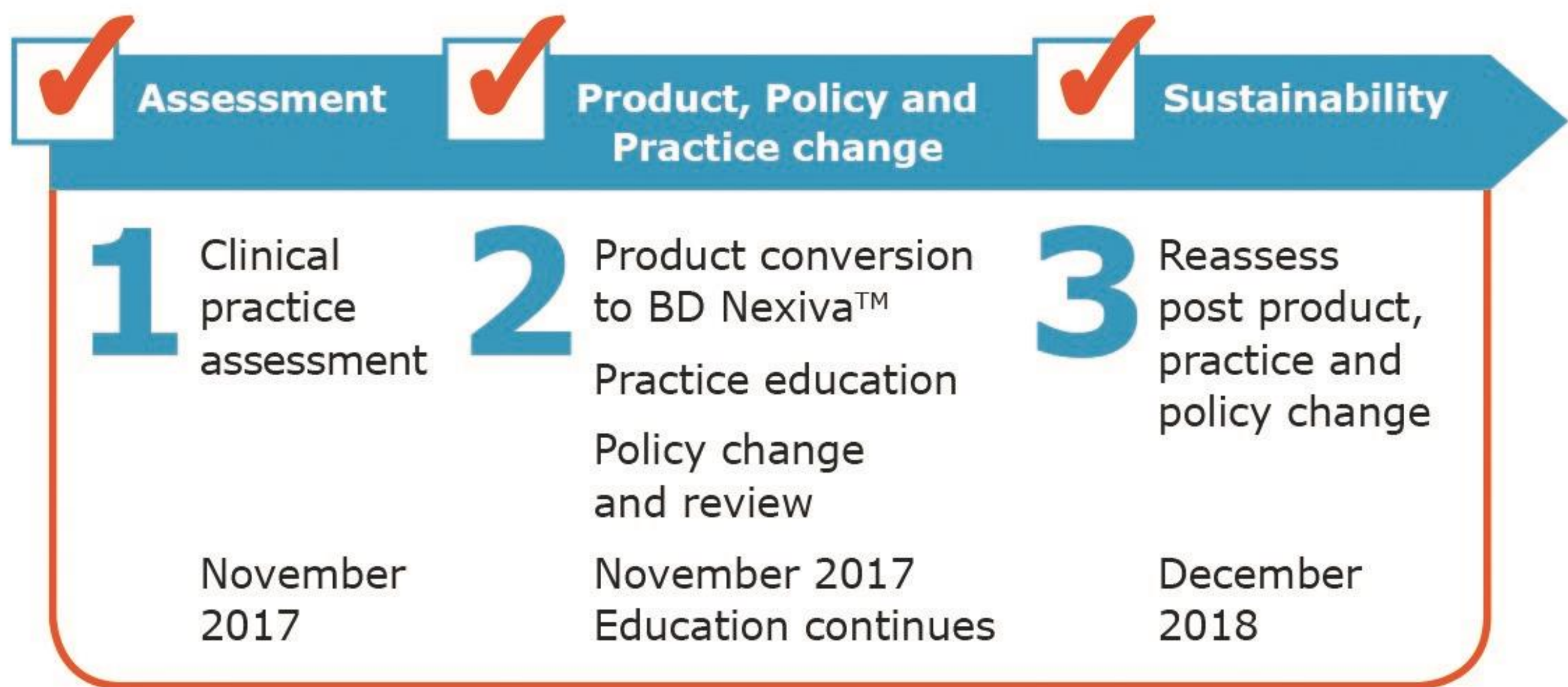


Context

Peripheral IV Catheters

- Almost **90%** of hospital **in-patients** receive an intravenous device¹
- Peripheral IV Catheter (**PIV**) is the most frequently used device²
- **Costs** and **clinical impact** of PIVs are often **underestimated**.³
- **Every PIV** may be handled **hundreds** of times, by a wide range of **clinicians** with **varying skill levels**.
- Complications, such as **occlusions, infection, dislodgement**, or **phlebitis** occur frequently and may be costly.⁴
- **Blood exposure** for staff and patients poses a **significant preventable risk**.⁵

Approach



Milestone #1

- Baseline assessments
- Benchmark results with global and local best practice guidelines⁵.
- Examine policies, practices, and products that are a part of vascular access at VGH.
- Perform 145 vascular site assessments, 62 observations

Milestone #2

Policies: Updated policy **per guidelines** to remove PIV when clinically indicated with PIV reassessment and site care/dressing change at 7 days.

Practices: How to **train 5,500 nurses** on the policies and best practices to achieve vascular access excellence?

- Identified hot spots where there was a high volume of PIV insertions and significant training needs.
- Extensive in-service training with assistance from BD.
- Shadowing of 400 nurses helped create a team of experts who could support their colleagues.
- On-line, training programs on PIV practices continue to provide support.

Products: The VAT Team partnered with the Professional Practice and Clinical Equipment and Supplies teams to conduct a cost analysis and make a business-case proposal to change to the BD Nexiva™ safety catheter.

Milestone #3

Ongoing Assessment to

- Drive clinician practices to be congruent with worldwide industry standards,
- Assured compliance to policy
- Standardize products and practices.

Specific Aims

Vancouver General Hospital

- **1,500 acute beds** and **86,000 annual discharges**, vascular access is a critical function.
- The Vascular Access Team (**VAT**) was called up to **60 times a day** to perform routine **PIV** insertions.
- **Nurses** were being **exposed to blood** during **PIV** insertion with the current products.
- **Manipulation** of catheter hubs to place extension sets was **increasing** the risk of **complications**.
- **Policies** concerning asepsis and **best practice** vein selection were **not consistently being followed**.



Outcomes

Initial Results

Vancouver General Hospital partnered with BD Signature Solutions Vascular Access Management Program to achieve the following improvements.

- Dwell time up **30%**
(Dwell time up to 4 days from 3.1 days)
- First stick success up to **77%** from **71%**
- PIV removal documentation rate up to **79%** from **39%**
- Blood exposure decreased to **0%** from **25%**
- Symptomatic removal rate decreased to **11%** from **21%**
- Dislodgement rate decreased to **2%**
- Calls to VAT team down **50%**
(Decreased to 30/day from 60/day)

Single-site results — may not be indicative of future results

References

1. Helm RE, Klausner JD, Klemperer JD, Flint LM, Huang E. Accepted but unacceptable: peripheral IV catheter failure. J Infus Nurs. 2015;38(3):189-203.
2. Seiberlich LE, Keay V, Kallos S, Junghans T, Lang E, McRae AD. Clinical performance of a new blood control peripheral intravenous catheter: A prospective, randomized, controlled study. Int Emerg Nurs. 2016;25:59-64.
3. Dychter SS, Gold DA, Carson D, Haller M. Intravenous therapy: a review of complications and economic considerations of peripheral access. J Infus Nurs. 2012;35(2):84-91.
4. Jagger J, Perry J, Parker G, Phillips EK. Nursing 2011 survey results: blood exposure risk during peripheral I.V catheter insertion and removal. Nursing. 2011;41(12):45-49.
5. Infusion Nurses Society. Infusion Nursing Standards of Practice. J Infus Nurs. 2016;39(Suppl1):S1-S159.