Improved Outcomes in a Nurse-led Vascular Access Program

CQCO Programmatic Review

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The Ottawa Hospital

- Amalgamation of hospitals in 1998
- Canada’s largest teaching hospital
- 1200 inpatient beds
- 50,000 admissions
- 1 million outpatient visits

Civic Campus

Heart Institute

General Campus
Proposed Model - 2007

**BPG used to assist in assessment and triage for patients requiring CVAD**

CVAD APN and Team

- Peripherally Inserted Catheter: Consolidated to a single insertion site at Civic and General
- Hickman Catheter: Centrally coordinated through Interventional Radiology with RN pre and post care provided by units.
- Implantable Port: Consolidated to Civic SPU. Future model TBD

Centralized referral, assessment, triage, insertion coordination, education, data collection and monitoring.
Current Program Model

Best Practice Guidelines used to assist with assessment, triage, insertion, care and maintenance, and removal of central lines

Peripherally Inserted Central Catheter

Centrally coordinated, dedicated insertion site at both the Civic and General Campuses

Tunneled Catheter

Centrally coordinated by Interventional Radiology pre and post care provided by CVAD

Implantable Port

Centrally coordinated with Interventional Radiology pre and post care provided by CVAD

Post Insertion

Trouble-shooting service for all non-dialysis central lines

Coordinate and assist with removal of implanted and tunneled catheters
CVAD Insertions to Date

34,000

4,500

645
PROGRAM IMPLEMENTATION

FACILITATORS
Facilitators

- Program Champion
  - Clinical, Patient centred
- Institutional Support
  - Space
- Physician Support
  - Interventional Radiology/Radiology
  - Referring Physician
- Medical Directives
- Standardized Practice
- Alignment with Community Care
- Data
DATA is TRANSFORMATIONAL

DATA ➔ Knowledge

Information ➔ Decisions

Action ➔ Data
### Vascular Access Patient Information

**Person ID:** 13011  
**Date Entered:** 07-Jul-2014 10:09:08 PM  
**Last Modified:** 24-Feb-2015 7:46:51 PM

**MRN:** [Redacted]  
**Last Name:** Churchill  
**First Name:** Winston  
**Gender:** Male  
**Date of Birth:** 09-Oct-1921

**Notes:** Shift-[F2] to Expand

### Diagnoses

<table>
<thead>
<tr>
<th>ID</th>
<th>Date</th>
<th>Diagnosis</th>
<th>Consult</th>
<th>Date Entered</th>
<th>Date Modified</th>
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<tbody>
<tr>
<td>23521</td>
<td>02-Jul-2014</td>
<td>Colon Cancer</td>
<td>PICC</td>
<td>07-Jul-2014 10:12:33 PM</td>
<td>24-Feb-2015 7:47:06 PM</td>
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### PICC Insertions

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<tr>
<th>Serial #</th>
<th>Insertion Date</th>
<th>Arm</th>
<th>Vein</th>
<th>Size/Lumen</th>
<th>Int Len (cm)</th>
<th>Ext Len (cm)</th>
<th>Tip Location</th>
<th>Date Entered</th>
<th>Date Modified</th>
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</thead>
<tbody>
<tr>
<td>11111111</td>
<td>14-Dec-2014</td>
<td>Right</td>
<td>Basilic</td>
<td>Double</td>
<td>42.0</td>
<td>0.0</td>
<td>Cavoatrial junction</td>
<td>04-Jan-2015 8:53:44 PM</td>
<td>23-Feb-2015 7:50:18 PM</td>
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To display additional information about a specific PICC Insertion, click the Details button on the right of the record line. Field labels in red are for display purposes only and cannot be edited.
Barriers

- Previous Practice Patterns
  - Interventional Radiology
  - Surgery
- Space
Barriers

- Clerks not answering the phone
PROGRAM OUTCOMES
Methods

- Retrospective cohort study of PICC associated complications
  - DVT, BSI, Occlusions requiring a thrombolytic
- Random selection of 700 PICCs from 8314 Bioflo PICCs inserted between Jan 2013 and Dec 2014
- Complete data set on 656 PICCs
Results

- 10 CRDVT
- 4 CRBSI/60,000 catheter days
- 144 doses of a thrombolytic
Conclusion

- Remarkably low complication rate in this cohort
- PICCs are safe and reliable
- Targeting zero should be the goal for all complications
- Data is essential
- Nurse-led programs improve vascular access outcomes
PROGRAM SUSTAINABILITY
Plan-Do-Study-Act (PDSA)
Cancer Care Ontario Quality and Innovation Award: Implementation of a Corporate Vascular Access Program

The Ottawa Hospital