Innovation, Technology and Specialized Skills: Strategies Needed to Face the Challenges of an Out-Patient IV Therapy Department

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University Hospital of Northern BC
Many of these treatments are complex, pose risks to patients’ health and require continuous quality improvement and patient safety measures. Providing integrated accessible health services for patients with these needs can be challenging.
Parenteral Therapy

- **OPAT (Out−patient antibiotic therapy)**
  - Cellulitis
  - Osteomyelitis
  - Endocarditis
  - Septic arthritis
  - Joint replacement infections
  - Ulcerations
  - Post−op wound

- **Transfusions**
  - Red cells
  - IVIG
  - Platelets
Parenteral Therapy

- Chronic disease management
  - Crohn’s Disease
  - Rheumatoid Arthritis
  - Scleroderma Interstitial Lung Disease
  - Vasculitis
  - Enzyme replacement therapies
  - Multiple Sclerosis
  - Hemochromatosis
  - Polycythemia

- Deep vein thrombosis
- Anticoagulation bridging
Northern Health
Objectives

1. Understand how the Parenteral Services program at the University Hospital of Northern British Columbia was developed

2. Appreciate the current structure and makeup of the Parenteral Services program and the staff

3. Review the technology available to delivery complex medication therapies

4. Assess the impact of a Parenteral Services program in our community
Objective #1: Understand how the Parenteral Services program at the University Hospital of Northern British Columbia was developed

- PICCs introduced into acute care
- Implemented insertion bundle (SHN)
- First inpatient PICC nurse certified
- First nurse to become certified by the Canadian Vascular Access Association (CVAA)
- Renee broke her ankle!
- Parenteral nurse position was created at UHNBC
- Parenteral Services established
- Three more nurses certified for PICC insertion
- Branched into the world of paediatrics
- Official SHN (action series) CR-BSI monitoring established (BSI per 1000 catheter days)
- Product evaluation involvement

2005 2006 2007 2008 2009 2010 2011 2012
Objective #2: Appreciate the current structure and makeup of the Parenteral Services program
BC Provincial Blood Coordinating Office
A program of the Provincial Health Services Authority
Teenage roosters
Substitute multidose meds with daily dose meds

Cefazolin  \rightarrow  Ceftriaxone

Imipenem  \rightarrow  Ertapenem

Vancomycin  \rightarrow  Daptomycin
Subcutaneous Immunoglobulin Program

- For Primary and Secondary Immune Deficiency
- Adverse reactions to IVIG
- Poor venous access
- The convenience of administering at home
"OK, boy, let's try it again ..."
Peripherally Inserted Central Catheters

- PASV PICC (valve is in the hub)
- Groshong
- Per-Q-Cath
- PowerPICC
Objective #4: Assess the impact of a Parenteral Services program in our community

- PICC specific catheter days have increased over 60% since the introduction of the Parenteral Services program
- More appropriate use of central lines
- Regional Cancer Care Unit/ BCCA
- Increase in the number of patients seen every year in the IV therapy program
Objective #4: Assess the impact of a Parenteral Services program in our community

Program Impact
Parenteral Services continues to provide care for an increasing number of patients each year.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NUMBER OF PATIENTS</th>
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<tbody>
<tr>
<td>2009</td>
<td>5375</td>
</tr>
<tr>
<td>2009</td>
<td>6749</td>
</tr>
<tr>
<td>2010</td>
<td>6568</td>
</tr>
<tr>
<td>2011</td>
<td>7540</td>
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Diagram 1  Parenteral Services impacts a number of different units and patient care areas

- NICU
- Paeds
- BCCA
- Mat
- UHNBC
- Surg
- Med
- ER
- TMS
- ICU
- PICCS
- Cardiac Lab
- Radiology
- NH
Zero Infections with PICCs

- CR–BSI rates remains at zero
### Product Validation Case Study

<table>
<thead>
<tr>
<th>Table 1 Catheter Occlusions</th>
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<tr>
<td><strong>Validation Timing</strong></td>
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<tr>
<td>Connector Displacement Type</td>
</tr>
<tr>
<td>Cathflo use per 1000 catheter days</td>
</tr>
<tr>
<td>Four Month Average</td>
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Catheter occlusions decreased by 26% with the implementation of the neutral displacement IV connector.

[Images of positive and neutral displacement IV connectors]

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Questions

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