An Evidence-based Practice Project to Improve Securement and Visualization of Peripheral Intravenous Catheters in Pediatric Patients
Presenters

- Andrea Smith  PhD, RN, CPNP,  Director Nursing Research & EBP

- Terri Pearcy RN, CPN, Nurse Manager Pre-Operative Surgery

- Cook Children’s Medical Center, Fort Worth, Texas
EBP Team Members

- Jill Isaacson RN
- Suzanne Frey RN, BSN
- Valerie Badgett RN, BSN,
- Shirley Martin RN, BSN,CPN
- Leigh Anne Campbell RN, BSN, CPN
- Melodie Davis RN, MSN
- Robert Hill JD, RN, BSN
- Mollie Kuchta RN, BSN
- Dena Hanson MLS
- Deborah Ellis CRNA
Securing Peripheral Intravenous (PIV) sites:

- Common problem for pediatric nurses.
- Increased Infiltrations in children
- Lack of site visualization
Risk Management data - ↑ # of infiltrations of higher harm category

QI Audit — nurses documenting (EMR) that “site looked good” then checking box “site not visualizable”.

Nursing Directors — concern about ↑harmful infiltrations

Staff Nurses — Frustration — not able to see IV site because of taping.
Approach

- Opportunity to use an EBP approach to change practice on wider scale.

- Nursing had adopted the Iowa Model of EBP (Titler et al, 2001) as our EBP framework.

- Developed EBP question & team
EBP PICO Question

In Pediatric patients, what is the most effective method of securing PIVs in order to:
1) maintain easy visualization of site
2) minimize infiltrations
3) maximize PIV durations
4) promote ease of use
5) be cost effective?
Evidence Appraisal & Summary

- Over 30 research & non-research articles and guidelines appraised for key EBP:
  1) clear tape & dressings,
  2) catheter stabilization devices,
  3) IV protectors,
  4) labeling of dressing,
  5) hourly rounding to assess.
Pilot Testing

- First step - conducted Base line data on 90 PIV (multiple Units)
  - 40.42% sites were **not** visible
  - 42% had clear dressings/tape
  - 11% had IV Protectors
  - 0% had IV Cath Securement Device
Pilot Testing

- Developed & had manufactured for pilot - IV start kit to incorporate EBP Bundle*. Kit contained:
  
  Clear Dressing*
  Cath Stabilization Device*
  Clear Tape* – pre-cut chevron & small roll
  Tourniquet, Cholorprep, 2X2, IV extension tubing
  IV Protection Device* – donated by manufacturer
Pilot Test IV Kit

1. Tourniquet
2. SorbaView
3. Chloraprep
4. Clear tape for chevron
5. Extension set
6. Additional clear tape for securing IV House
7. Gauze
8. HubGuard
IV Site Protectors
IV with EBPSecuring
Pilot Outcomes - PIVs

- **Mean duration of IV access**

  **Pilot**
  51.4 hours

  **Control**
  38.2 hours

- **Infiltrations**

  8 (12.5 %)

  12 (18.2%)

- **Clotted**

  3 (4.6%)

  11 (16.7%)

Dislodgement & leaking rates identical
Staff evaluated:

- IV site insertion site clearly or easily visible
- Ease of use – clear dressing material, cath securement device, & IV protector
- Range of response – 92-100% easy or moderately easy to use
EBP Next Steps

- Team Decision to move forward – staff informed of results.
- Modification of Kits
- IV Policy updated to include EBP changes.
- EMR Documentation changed.
- “See Me – See My IV” Education roll-out developed and implemented
“See Me, See My IV”

Every time you look at me, look at my IV.
## PIV Outcomes Baseline to 12 months

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Baseline 2008</th>
<th>6 months post 11/10</th>
<th>9 months post 2/11</th>
<th>12 months post 5/11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Clearly or Easily visible</td>
<td>58.4%</td>
<td>95%</td>
<td>94%</td>
<td>94%</td>
</tr>
<tr>
<td>Site Obscured</td>
<td>40.4%</td>
<td>6%</td>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td>Use of Clear Dressing</td>
<td>40%</td>
<td>92%</td>
<td>93%</td>
<td>92%</td>
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<tr>
<td>Use of IV Protector</td>
<td>11.7%</td>
<td>81%</td>
<td>80%</td>
<td>81%</td>
</tr>
<tr>
<td>Use of Securment Device</td>
<td>0%</td>
<td>74%</td>
<td>75%</td>
<td>76%</td>
</tr>
<tr>
<td>Duration of PIV</td>
<td>38.2hrs</td>
<td>62.9 hrs</td>
<td>63 hrs</td>
<td>62hrs</td>
</tr>
</tbody>
</table>
On-going Outcomes

- Cost Analysis (kits $1.29 less than individual items estimated savings $186,00/year)
- Now part of QI on-going audits
- Outcomes disseminated to multiple staff and committees in house, to Magnet Appraisers, at external conference, and developing publication
Questions??