ASCO’s Quality Training Program

Project Title:
Prevention of Extravasations of Anticancer Therapy in the Oncology Clinic Infusion Patient

Presenter’s Name:
Lisa Ciafre, RN, MSN, Director of Quality (promotion)
Matthew Bigbee, Senior Data Analyst

Institution:
Allegheny Health Network Cancer Institute

Date:
December 5, 2018
Allegheny Health Network Cancer Institute is an integrated cancer program that includes 2 regional academic centers, 5 comprehensive cancer centers, 17 community-based clinics, and 11 radiation oncology centers.
Services include medical, surgical, gyne, and hematology oncology including cellular transplant.

**2019 expansion plans:**
- Opening of 2 comprehensive centers (includes radiation oncology and community based clinic at each location)
- 1 community based radiation oncology center
- 2 community based clinics
## Team Members

<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
<th>Job Function</th>
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<tbody>
<tr>
<td>Project Sponsor#</td>
<td>David Parda, MD</td>
<td>Cancer Institute Chairperson</td>
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<tr>
<td>Team Leader*</td>
<td>Anna Vioral</td>
<td>Director of Oncology Practice and Professional Development</td>
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<tr>
<td>Core Team Member*</td>
<td>Mathew Bigbee</td>
<td>Senior Data Analyst</td>
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<tr>
<td>Core Team Member* (if applicable)</td>
<td>Lisa Ciafre</td>
<td>Team member who facilitates the team meetings to optimize group processes</td>
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<tr>
<td>Facilitator</td>
<td>Lisa Ciafre/Matt Bigbee</td>
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<tr>
<td>Other Team Member^</td>
<td>Ali Amjad</td>
<td>Medical Oncologist</td>
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<td>Hashem Younes</td>
<td>Medical Oncologist</td>
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<tr>
<td>Other Team Member^</td>
<td>Kristen Tavernaris</td>
<td>Risk Management</td>
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<tr>
<td>Other Team Member^</td>
<td>Patricia Reiser/Rose Dziobak</td>
<td>VAT RN</td>
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<tr>
<td>Other Team Member^</td>
<td>Chelsea Nee</td>
<td>Clinic Nurse Manager Mellon Office</td>
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<tr>
<td>Other Team Member^</td>
<td>Courtney Sheerer</td>
<td>Clinic Infusion Nurse Mellon Office</td>
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<td>Other Team Member^</td>
<td>Raven Lowery</td>
<td>Clinic Infusion Nurse Mellon Office</td>
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<tr>
<td>Other Team Member^</td>
<td>Dana Haines</td>
<td>Clinic Infusion Nurse Mellon Office</td>
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<tr>
<td>Other Team Member^</td>
<td>Emily Graham</td>
<td>Pharmacist Mellon Office</td>
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<tr>
<td>QTP Improvement Coach</td>
<td>Holley Stallings</td>
<td>Provides remote support to the team regarding the science of quality improvement and participation in the QTP.</td>
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The Allegheny Health Network Cancer Institute Medical Oncology Clinic’s extravasation rate January 2017- September 2018 was 0.12%. An extravasation results in negative patient experience and outcomes related to increased pain, tissue injury, and inappropriate medication administration.
By end of calendar year 2019, the number of peripheral anticancer therapy extravasation events will be equal to or less than the benchmark* of 0.09% with a stretch goal of zero.

Benchmarked established from a cohort study. Low level, however only evidence identified

*Rose, J. etal; Chemotherapy Extravasation: Establishing a national benchmark for incidence among cancer centers CJON.ONS.ORG
Measures – Outcome

- **Measure**: The number of extravasations in the identified patient population

- **Patient population**: Patients that receive the following anticancer therapy agents: bendamustine, mechlorethamine, carmustine, teniposide, vinblastine, vincristine, vinorelbine, daunorubicin, doxorubicin, epirubicin, idarubicin, dactinomycin, mitomycin, mitoxantrone, docetaxel, paclitaxel, paclitaxel protein bound particles, oxaliplatin, and etoposide.

- **Calculation methodology**:
  - Numerator: Number of extravasations of above medications
  - Denominator: Number of infusions of above medication

- **Data source**: EPIC and RL6 Event Reporting

- **Data quality (any limitations)**: Number of events is dependent on staff reporting (QI project in place and effective)
Measures – Education

• **Measure**: % of AHNCI nurses receiving education

• **Patient population**: n/a

• **Calculation methodology**:
  – Numerator: # of AHNCI nurses receiving education
  – Denominator: # of AHNCI nurses on staff

• **Data source**: manual tracking of progress

• **Data quality(any limitations)**: n/a

• At baseline, this measure is at 0% (0/120 nurses), because the education is new
Measures – Standardize Catheters

• **Measure**: % of AHNCI medical oncology sites using standard catheters

• **Patient population**: n/a

• **Calculation methodology**:
  – Numerator: # of AHNCI medical oncology sites using standard catheters
  – Denominator: # of AHNCI medical oncology sites

• **Data source**: manual tracking, audit to confirm standardization

• **Data quality(any limitations)**: n/a

• At baseline, this measure is at 25% (4/16 sites), because a few sites already use the catheters of choice
Measures – Standardize IV Start Kit

• **Measure**: % of AHNCI medical oncology sites using standardized IV start kits

• **Patient population**: n/a

• **Calculation methodology**:
  – Numerator: # of AHNCI medical oncology sites using standardized IV start kits
  – Denominator: # of AHNCI medical oncology sites

• **Data source**: manual tracking, audits to confirm standardization

• **Data quality (any limitations)**: n/a

• At baseline, this measure is at 0% (0/16 sites), because no sites are currently using the IV start kits of choice
Baseline Data

January 2017 through September 2018 data revealed an extravasation rate of 0.12%:

25 extravasations/20,605 infusions
Our Process Tool
Diagnostic Data-AHNCI Events

Summary: Most extravasation events occurred peripherally in the forearm with a 24g, 0.75” catheter

Hypothesis: 0.75” catheter may not be adequate length to safely access forearm veins due to increased depth

EBP: No literature exists linking a particular length/gauge catheter for each site therefore, a hard stop of eliminating all ¾” catheters is not recommended. Choosing the smallest gauge catheter with shortest length for the prescribed therapy is recommended.

Intervention: Train nurses in vein assessment and catheter selection
Diagnostic Data-Observations

• Prior to June 2018, there was not a formal didactic course related to IV insertion or vein assessment

• Insertion technique and knowledge is dependent on individual experiential learning

• Practice varied among nurses related to:
  – Catheter selection
  – Site selection
  – Patient education
### Prioritized List of Changes (Priority/Pay–Off Matrix)

<table>
<thead>
<tr>
<th>Impact</th>
<th>Ease of Implementation</th>
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<tbody>
<tr>
<td>High</td>
<td>Nurse Skill/knowledge</td>
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<tr>
<td></td>
<td>Vascular Access Assessment Tool</td>
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<tr>
<td></td>
<td>Vein Assessment Tool</td>
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<tr>
<td>Low</td>
<td>Standardization of Catheters</td>
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<td></td>
<td>Standardization of IV Supplies</td>
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**ASCO Quality Training Program**
<table>
<thead>
<tr>
<th>Date of PDSA Cycle</th>
<th>Description of Intervention</th>
<th>Results</th>
<th>Action Steps</th>
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</table>
| January 2019      | Improve nurse skill/knowledge | Cycle 1: Pending | Education to all nurses:  
  • Vein assessment  
  • Site selection  
  • Catheter selection  
  • Patient education |
| January 2019      | Standardize Catheters       | Cycle 1: Pending | Ensure all clinics utilize the same catheters |
| January 2019      | Standardize IV Start Supplies | Cycle 1: Pending | Ensure all clinics utilize the same process/supplies for PIV |
| TBD               | Vascular Access Assessment Tool | Cycle 2: Pending | • EBP review  
  • AHN VAT Committee |
| TBD               | Vein Assessment Tool        | Cycle 2: Pending | • EBP review  
  • AHN VAT Committee |
Change Data

• Currently in the “Do” Phase of PDSA
• Implementing first changes in January
• Change data pending at this time
Conclusions

The QTP has proven to be a catalyst in change for the AHN Cancer Institute team. The main pearls of wisdom achieve are the following:

• The importance of change decisions be made by frontline staff
• The importance of data – we realized that our baseline personal opinions regarding the cause of our extravasations was not supported by the data
• The importance of EBP when creating change – our first thought was to eliminate all 0.75” catheters which was not supported by evidence
Next Steps/Plan for Sustainability

Standardization of processes and improved knowledge and skill will assist with sustainability by creating a consistent foundation to investigate opportunities in the future.