ASC0’s Quality Training Program

Project Title: Patient Centered Cancer Care Assess & Reduce Preventable Emergency Department Visits

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Kenneth Bishop, MD, PhD
Tara Szymanski, CTR

Institution: The Comprehensive Cancer Center
A Program of Rhode Island Hospital

Date: March 6, 2014
Institutional Overview

Rhode Island Hospital, Providence, RI

Comprehensive Cancer Center

- 1,550 new patients annually (RIH)
- 12 Hematologists / Oncologists

Rhode Island Hospital
Emergency Department

- State’s largest tertiary provider and only Level 1 trauma center for south eastern New England
- High volume of emergency room visits; serving nearly 150,000 patients last year
Team Members

Project Sponsors: Nicholas Dominick, Senior VP, Cancer Services
Susan Korber, RN, Administrative Director, Cancer Center

Team Leader: Mary Anne Fenton, MD
Medical Oncologist

Core Members: Megan Begnoche, RN, Nursing Quality & Safety Manager
Tara Szymanski, CTR, Quality & Accreditations (Facilitator)

Team Members:
• Laurie Browning, RN, Director, ED
• Ariel Birnbaum, MD, Medical Oncologist, Comprehensive Cancer Center
• Kenneth Bishop, MD, Hematology/Oncology Fellow, Comprehensive Cancer Center
• Patricia Karwan, NP, Comprehensive Cancer Center
• Ryan Parker, RN, Inpatient Oncology Unit
• Eileen Silveira, RN, Triage Nurse, Comprehensive Cancer Center
• Robin Turnbull, RN, Patient Navigator, Comprehensive Cancer Center

QTP Improvement Coach: Laurie Kaufman, MSN, RN
Problem Statement

During calendar year 2013, 224 Rhode Island Hospital (RIH) adult cancer patients presented to the RIH Emergency Department (ED).

Retrospective review indicates up to 50% of these ED visits were avoidable.

In our resource restricted environment we must focus resources to avoid costly ED visits for “non-emergent” care.
Diagnostic Data

Pareto Chart
Common Cancer Center Diagnoses In
The RIH Emergency Department

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>Quantity</th>
<th>Cum %</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung Cancer</td>
<td>56</td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>Other</td>
<td>39</td>
<td>50%</td>
<td>21%</td>
</tr>
<tr>
<td>Lymphoma</td>
<td>28</td>
<td>65%</td>
<td>15%</td>
</tr>
<tr>
<td>GI Cancers</td>
<td>21</td>
<td>76%</td>
<td>11%</td>
</tr>
<tr>
<td>Breast Cancer</td>
<td>21</td>
<td>87%</td>
<td>11%</td>
</tr>
<tr>
<td>Pancreatic Cancer</td>
<td>12</td>
<td>94%</td>
<td>6%</td>
</tr>
<tr>
<td>Head &amp; Neck Cancer</td>
<td>12</td>
<td>100%</td>
<td>6%</td>
</tr>
<tr>
<td>All other</td>
<td>0</td>
<td>100%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Time Period: November 2012 - January 2013

* Other: prostate, benign heme including sickle cell, malignant heme including myeloma, & MDS

Data Source: Quality Management Dept.
# Diagnostic Data

## Pareto Chart

**Cancer Related Reasons Patients Go To The ED**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Quantity</th>
<th>Cum %</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td>62</td>
<td>45%</td>
<td>45%</td>
</tr>
<tr>
<td>SOB</td>
<td>17</td>
<td>58%</td>
<td>12%</td>
</tr>
<tr>
<td>Fever</td>
<td>15</td>
<td>69%</td>
<td>11%</td>
</tr>
<tr>
<td>Weakness</td>
<td>13</td>
<td>78%</td>
<td>9%</td>
</tr>
<tr>
<td>Altered Mental Status</td>
<td>9</td>
<td>85%</td>
<td>7%</td>
</tr>
<tr>
<td>Abnormal Lab Results</td>
<td>9</td>
<td>91%</td>
<td>7%</td>
</tr>
<tr>
<td>Nausea Vomiting</td>
<td>7</td>
<td>96%</td>
<td>5%</td>
</tr>
<tr>
<td>Fall Injury</td>
<td>5</td>
<td>100%</td>
<td>4%</td>
</tr>
<tr>
<td>All other</td>
<td>0</td>
<td>100%</td>
<td>0%</td>
</tr>
</tbody>
</table>

*Non-cancer related reasons have been omitted*

**Time Period:** November 2012 - January 2013

**Data Source:** Quality Management Dept.
Why Do Patients Go To The ED

Emergency Department
- No understanding of the Cancer Center
- No communication with the Cancer Center
- Patient presents to ED because prior authorization for urgent tests could not be obtained in a timely manner

Limited Transportation Resources
- Limited Transportation Resources
- No ride to Cancer Center, called 911
- Patient information not available to ED
- Patient called 911
- Patient refused

Limitations of Institutional Resources
- Limitations of Institutional Resources
- Cancer Center was closed
- Sick line closes 5:45 p.m.
- No beds available for direct admit from the Cancer Center
- Too few day beds

Medically Unstable
- Medically Unstable
- Patient refused
- Triage nurse skill set
- Ran out of medication
- Hospice appropriate
- Needed medication refill
- Didn’t know about sick line
- Didn’t know symptoms could be managed in the Cancer Center
- Didn’t know they could contact the on call physician
- Didn’t know about same day appointments

Lack of Patient Knowledge
- Lack of Patient Knowledge
- Data Source: Team Brain Storm
Patient Education Process Map

1. **Diagnosis**
   - Office Visit
     - Decision to Treat
       - Y
         - ED presentation for pain/vomiting/dyspnea
       - N
         - No Treatment
           - ED presentation for pain/vomiting/dyspnea

2. **Regimen discussed with Patient**
   - Introduction to Team RN
   - Orders/ Prior Auth

3. **Teaching Session:**
   - Initial Patient Education

4. **Start of Treatment**
   - RN Follow-Up Call
   - MD Follow-Up Appt
## Patient Post Emergency Room Visit Questionnaire Results

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Legs weak due to stroke</td>
<td>No</td>
<td>CNA</td>
<td>Not related to cancer</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Trouble breathing, pain, fever</td>
<td>No</td>
<td>Call back from MD</td>
<td>MD told me to go to ED</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Cellulitis</td>
<td>No</td>
<td>PCP</td>
<td></td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Bleeding</td>
<td>No</td>
<td>Westerly ER</td>
<td>Too sick to go to Cancer Center</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Lump in throat</td>
<td>No</td>
<td></td>
<td>Not a patient yet</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Chest Pain</td>
<td>No</td>
<td></td>
<td></td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Trouble breathing, pain</td>
<td>Yes</td>
<td>Weekend recording</td>
<td>After hours</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Pain</td>
<td>No</td>
<td></td>
<td>Too much pain</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Fall</td>
<td>No</td>
<td></td>
<td>Left message, went to ER before return call</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Other</td>
<td>No</td>
<td>PCP</td>
<td></td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
Patient Post Emergency Room Visit Questionnaire Results

- **Reason for ER visit?**
  - Pain
  - Dyspnea
  - Infection

- **Did you call the CCC?**
  - 92% no call prior to ED visit

- **Aware of sick day visits?**
  - 26% not aware of same day sick visits

- **Barriers to office visit**
  - transportation
Aim Statement

By March 1, 2014 achieve a 20% reduction in ED visits for non-urgent symptom management including pain, fever, and generalized weakness for the RIH adult lung cancer patient population.
Outcome Measure

• **Measure:** Number of Lung Cancer Patients Who Visit The Emergency Department

• **Patient population:** Adult Lung Cancer Patients
  – Exclusions (if any): Non-Cancer Related Events

• **Calculation methodology:** Number of Lung Cancer Patients Who Visit The Emergency Department Per Month / Number of Unique Lung Cancer Patient Visits In The Cancer Center Per Month

• **Data source:** Emergency Department & Cancer Center

• **Data collection frequency:** 60 day (IRB expedited retrospective chart review)

• **Data quality (any limitations):** Limited Access to Real Time Emergency Department Data Due to IRB
Materials Developed

To All Our Hematology/Oncology Patients:
You are important to us and we want to streamline your access to care. If you are sick and need to schedule a same-day sick visit or would like to speak with a nurse during regular clinic hours, please call the sick line.

The Sick Line Nurse Can Be Reached At (401) 444-3266.
When leaving a message, please be specific and state all symptoms.
Sick Line Hours: Monday thru Friday, 8:00 a.m. – 6:00 p.m.

Reasons To Call The Sick Line:
- Fever, 100.4 degrees or greater plus or minus shaking chills
- Nausea or vomiting, not controlled by your medications
- Any significant change you feel we should know about

For General Questions or Concerns Call (401) 444-5435.
Sick Line Hours: Monday thru Friday, 8:00 a.m. – 6:00 p.m.

Examples of Questions & Concerns:
- Can I change my appointment?
- I need to obtain blood test results, please state if it is related to treatment
- Prescription refills – 24 hour notice required

For Urgent Care After Hours Call (401) 444-4000.
To reach us before 8:00 a.m., after 6:00 p.m., on the weekend, or on holidays, please call (401) 444-4000, press 0 to reach the operator, and ask for the Hematology/Oncology fellow on call.

Your doctor is: ____________________

Latest Revision Date: 02/16/2014
Future State Process Map

1. Diagnosis
2. Office Visit
3. Decision to Treat
   - Y: Regimen discussed with Patient
   - N: No Treatment
4. Navigator Patient Education
5. Start of Treatment
6. RN Follow-Up Call
7. MD Follow-Up Appt
8. Teaching Session: Patient Education
9. Introduction to Team RN
10. Orders/Prior Auth

Sick Line Education Tool
Process Measure

- **Measure:** Number of Lung Cancer Sick Line Calls
- **Patient population:** Adult Lung Cancer Patients
  - Exclusions (if any):
- **Calculation methodology:**
  - Number of Unique Lung Cancer Patients Who Call The Sick Line / Number of Unique Lung Cancer Patients Seen In The Cancer Center Over The Past Month
- **Data source:** Cancer Center Sick Line Call Logs
- **Data collection frequency:** Daily
- **Data quality (any limitations):** Inconsistency In Sick Line Data Collection
## Sick Line Data

<table>
<thead>
<tr>
<th></th>
<th>Lung Specific Calls / Total Sick Line Calls</th>
<th>Average Sick Line Calls Per Day</th>
<th>% of Lung Specific Calls</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre Intervention</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 1 (2 days)</td>
<td>6 / 25</td>
<td>12.5</td>
<td>24%</td>
</tr>
<tr>
<td>Week 2 (3 days)</td>
<td>4 / 47</td>
<td>15.7</td>
<td>8.5%</td>
</tr>
<tr>
<td>Week 3 (3 days)</td>
<td>5 / 23</td>
<td>7.7</td>
<td>21.7%</td>
</tr>
<tr>
<td>Week 4 (3 days)</td>
<td>8 / 35</td>
<td>11.7</td>
<td>21%</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td></td>
<td>Average = 11.9%</td>
<td>Average = 18.8%</td>
</tr>
</tbody>
</table>
Balance Measures

• **Measure:** Capacity To Care For Same Day Sick Visits

• **Patient population:** Adult Lung Cancer Patients
  – Exclusions (if any):

• **Calculation methodology:**
  – Number of Patients Who Need Sick Beds / Sick Bed Capacity

• **Data source:** Sick Line Data Collection Tool-Patients Referred For Sick Visits; Triage Nurse To Indicate If Patient Sent To ER Due To Capacity

• **Data collection frequency:** Monthly

• **Data quality (any limitations):** Accuracy Of Data Entry On Sick Call Tool For Patient Disposition
## PDSA Plan (Tests of Change)

<table>
<thead>
<tr>
<th>Date of PDSA cycle</th>
<th>Description of intervention</th>
<th>Results</th>
<th>Action steps</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PDSA Cycle 1</strong></td>
<td>Phone triage nurse began sick line data collection</td>
<td>Inconsistent phone data collection</td>
<td>Revise sick line data collection tool</td>
</tr>
<tr>
<td>December 2, 2013</td>
<td>Nurse navigator distribution of sick line education tool to lung cancer patients</td>
<td>Sick line education tool too “cumbersome”</td>
<td>Revised education tool based on navigator and patient feedback</td>
</tr>
<tr>
<td>December 16, 2013</td>
<td>Implemented revised sick line data collection tool</td>
<td>Sick line data collection improved</td>
<td>Reinforce use of revised sick line data collection tool</td>
</tr>
<tr>
<td><strong>PDSA Cycle 2</strong></td>
<td>Navigator implemented revised education tool</td>
<td>Received positive patient feedback</td>
<td>Nursing and navigator to review tool at each patient contact</td>
</tr>
<tr>
<td>January 2, 2014</td>
<td>Implemented revised sick line data collection tool</td>
<td>Sick line data collection improved</td>
<td>Reinforce use of revised sick line data collection tool</td>
</tr>
<tr>
<td>January 13, 2014</td>
<td>Began tracking number of sick visits per day and number of patients sent to the ED</td>
<td>Inconsistent data collection</td>
<td>Triage nurse to indicate if patient sent to ED due to capacity</td>
</tr>
<tr>
<td><strong>PDSA Cycle 3</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Prioritized List of Changes (Priority/Pay-Off Matrix)

<table>
<thead>
<tr>
<th>Impact</th>
<th>Ease of Implementation</th>
<th>PDSA # 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td></td>
<td>Nurse navigator distribution of sick line phone numbers in lung cancer multi clinic</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td>PDSA # 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PDSA # 3</td>
</tr>
</tbody>
</table>
Change Data

Sick Line Calls by Lung Cancer Patients (XmR/Individuals Chart, 2 Sigma)

December Sick Calls | January / February Sick Calls

<table>
<thead>
<tr>
<th>Days</th>
<th>Number of Patient Calls</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>7</td>
<td>1.2</td>
</tr>
<tr>
<td>13</td>
<td>1.0</td>
</tr>
<tr>
<td>19</td>
<td>-0.8</td>
</tr>
<tr>
<td>25</td>
<td>1.0</td>
</tr>
<tr>
<td>31</td>
<td>-0.5</td>
</tr>
<tr>
<td>37</td>
<td>1.0</td>
</tr>
<tr>
<td>43</td>
<td>-0.5</td>
</tr>
<tr>
<td>49</td>
<td>-0.6</td>
</tr>
<tr>
<td>55</td>
<td>-1.0</td>
</tr>
</tbody>
</table>

Mean = 2.44

Upper Control Limit = 7.00
Lower Control Limit = -2.11
Conclusions

• A slight increase in the number of sick line calls by adult lung cancer patients was identified, based on this increase we are projecting a reduction in ED visits.

• A review of January & February 2014 ED visits is pending, this information will determine if a 20% reduction in ED visits for non-urgent symptom management was achieved.
Lessons Learned

• Patient education of nursing sick line call service appears to increase patient calls for symptom control and may lead to a reduction in the number of preventable ED visits.

• There is a direct correlation between pain management and ED utilization by the adult lung cancer patient population.

• Patient navigation and consistent phone triage assessment are essential to reducing preventable ED visits.
Next Steps/Plan for Sustainability

• Continue to measure number of ED visits and sick line calls received post intervention to further evaluate the process

• Meet on a monthly basis to ensure sustainability

• Expand use of sick line education form to include Lymphoma & GI patients

• Provide education to the inpatient population during initial admission
**Project Title:** Patient Centered Cancer Care
Assess & Reduce Preventable ED Visits

**AIM:** By March 1, 2014 achieve a 20% reduction in ED visits for non-urgent symptom management including fever, and generalized weakness for the RIH adult lung cancer patient population.

**INTERVENTION:**
Collected and analyzed diagnostic data from retrospective ER chart reviews for cause of ER visit including diagnosis and presenting symptom
Obtained and reviewed patient surveys: “Why Do Patients Present To The ED"
Assembled a multidisciplinary team to review current process for patient education & future process map
Developed and implemented a patient education tool to communicate sick line contact numbers
Re-enforced availability of same day sick visits for symptom management

**CONCLUSIONS:**
A slight increase in the number of sick line calls by adult lung cancer patients was identified. Based on the increase in sick line calls we are projecting a reduction in ED visits.

**NEXT STEPS:**
- Continue to measure number of ED visits and sick line calls received post intervention to further evaluate the process
- Meet on a monthly basis to ensure sustainability
- Expand use of sick line education form to include Lymphoma & GI patients
- Provide education to the inpatient population during initial admission

Graph title: Sick Line Calls by Lung Cancer Patients (XmR/Individuals Chart, 2 Sigma)

- December Sick Calls
- January / February Sick Calls
- Upper Control Limit = 7.00
- Mean = 2.44
- Lower Control Limit = -2.11