Improving the Feeding Tube Placement Process for Head and Neck Radiation Oncology Patients

Lacey Reddick, Eva Wasseen, and Patty O’Lexey
Sweetwater Regional Cancer Center

December 8, 2023
Institutional Overview

Sweetwater Regional Cancer Center (SRCC) with Memorial Hospital of Sweetwater County (MHSC)

- Offer chemotherapy, external beam radiation therapy, and clinical trials
- Affiliated with the Huntsman Cancer Institute of the University of Utah
- Frontier Cancer Center serves over a 100-mile radius
<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lacey Reddick</td>
<td>Team Lead; Clinical Trials Facilitator</td>
<td>SRCC</td>
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<tr>
<td>Eva Wasseen</td>
<td>Team Member; Registered Nurse</td>
<td>SRCC – Radiation Onc.</td>
</tr>
<tr>
<td>Patty O’Lexey</td>
<td>Team Member; Education Director</td>
<td>MHSC</td>
</tr>
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<td>Josie Ibarra</td>
<td>Team Member; Registered Dietitian</td>
<td>MHSC</td>
</tr>
<tr>
<td>Tasha Harris</td>
<td>Sponsor; Radiation Oncology Director</td>
<td>SRCC – Radiation Onc.</td>
</tr>
<tr>
<td>Ashraf Mohamed</td>
<td>QI Coach</td>
<td></td>
</tr>
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</table>
Reflections on Our QTP Experience

Sweetwater Regional Cancer Center
with
Memorial Hospital of Sweetwater County
Problem Statement

Between January 1, 2021, and May 31, 2023, 7 newly diagnosed head and neck cancer patients in Radiation Oncology at Memorial Hospital of Sweetwater County required feeding tubes to safely receive effective radiation therapy. 71% percent of these patients had 3 or more rework loops (deviations) within the feeding tube placement process, which led to patient and staff frustration, delayed discharge after feeding tube placement, interrupted radiation treatment, and increased cost.
# Outcome Measure
## Baseline data summary

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Measure:</strong></td>
<td>Percentage of patients with 3 or more rework loops within the feeding tube placement process</td>
</tr>
<tr>
<td><strong>Patient population:</strong></td>
<td>Head and neck radiation oncology patients treated from January 1, 2021, to May 31, 2023, who required feeding tubes</td>
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</table>
| **Calculation methodology:**                   | **Numerator:** number of patients with 3 or more rework loops  
**Denominator:** total number of patients that required feeding tubes                                                                |
| **Data source:**                               | Electronic Medical Record (EMR): Cerner and Quadramed                                                                                      |
| **Data collection frequency:**                 | One-time retrospective chart review                                                                                                          |
| **Data limitations:**                          | EMR Conversion on 4/18/2022: The current EMR is more robust, which may have resulted in more rework loops identified for the patients that came after the conversion |
Process map

We identified:

- 18 rework loops
- 24 decision points
- 7 departments involved
- 12 roles involved

No two patients had the same pathway, indicating no clear process existed
71% of our patients that had 3 or more rework loops
Aim Statement

To decrease the percentage of patients who experience 3 or more rework loops (deviations) in the feeding tube placement process from 71% to less than 50% at Memorial Hospital of Sweetwater County by December 1, 2023.
Cause and Effect Diagram

Staff Related
- Surgery team not educated about patient
  (Tube and wound care)
- Staff not scanning tube and dressing
  (function and wound care)
- Staff not recognizing the need for tube

Patient Related
- Poor communication between Tube Care and Surgical
  (HCT)
- Tube care not properly identified

Home Health
- Patient missed tube
- Patient missed tube change

Orders
- Patient missed tube change
- Patient missed tube change

Top Root Cause Categories:
- Policy Issue
- Education Issue
- Communication Issue

Multiple Rework Loops within Feeding Tube Placement Process
Occurrences of Root Cause Categories within the Feeding Tube Placement Process

<table>
<thead>
<tr>
<th>Root Cause Categories</th>
<th>Number of Occurrences</th>
<th>Cumulative Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Issue</td>
<td>25</td>
<td>38.5%</td>
</tr>
<tr>
<td>Education Issue</td>
<td>17</td>
<td>64.6%</td>
</tr>
<tr>
<td>Communication Issue</td>
<td>9</td>
<td>78.5%</td>
</tr>
<tr>
<td>Staff Related Issue</td>
<td>5</td>
<td>86.2%</td>
</tr>
<tr>
<td>Financial Concerns</td>
<td>3</td>
<td>90.8%</td>
</tr>
<tr>
<td>Patient Related Issue</td>
<td>3</td>
<td>95.4%</td>
</tr>
<tr>
<td>Documentation Concerns</td>
<td>3</td>
<td>100%</td>
</tr>
</tbody>
</table>

- **Policy Issue**: 25 occurrences (38.5%)
- **Education Issue**: 17 occurrences (64.6%)
- **Communication Issue**: 9 occurrences (78.5%)
- **Staff Related Issue**: 5 occurrences (86.2%)
- **Financial Concerns**: 3 occurrences (90.8%)
- **Patient Related Issue**: 3 occurrences (95.4%)
- **Documentation Concerns**: 3 occurrences (100%)

*ASCO Quality Training Program*
## Action Plan

### PDSA Cycle 1

<table>
<thead>
<tr>
<th>Intervention</th>
<th>PDSA Cycle #</th>
<th>Impact Effort</th>
<th>Pareto Chart Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assign to Rad Onc RN: send home health and nutrition formula orders pre surgery</td>
<td>C1</td>
<td>High Impact Low Effort</td>
<td>Policy</td>
</tr>
<tr>
<td>Assign patient education to dietitian (nutrition with tube) and Rad Onc RN (tube/wound care) to be completed after the surgery consult and before surgery</td>
<td>C1</td>
<td>High Impact Low Effort</td>
<td>Education</td>
</tr>
<tr>
<td>Assign to the Rad Onc RN: send the dietitian referral within 1 week of the Rad Onc consult</td>
<td>C1</td>
<td>High Impact Low Effort</td>
<td>Policy</td>
</tr>
<tr>
<td>Assign to the Rad Onc RN: notify Case Management about the patient and pertinent details before surgery</td>
<td>C1</td>
<td>High Impact Low Effort</td>
<td>Communication</td>
</tr>
</tbody>
</table>

**Step 1:** Create a Process
From Chaos to Control:

- Rework Loops: Decreased from 18 to 4
- Decision Points: Decreased from 24 to 12
- Departments Involved: Decreased from 7 to 6
- Roles Involved: Decreased from 12 to 8
Process Measures

PDSA Cycle 1
Met or Not Met?

- Dietitian Referral Sent Within 1 Week of the Radiation Oncology Consult for Head and Neck Oncology Patients Needing Feeding Tubes
  - Intervention Starts: Sending Dietitian Referral in Required Time

- Home Health and Nutrition Formula Orders Sent Prior to Feeding Tube Placement for Head and Neck Oncology Patients
  - Intervention Starts: Sending Orders Pre-Surgery

- Patient Education on Wound Care and Nutrition with a Feeding Tube Completed Prior to Placement for Head and Neck Oncology Patients
  - Intervention Starts: Completing Education pre-surgery

- Case Management Notified of Patient Prior to Tube Placement for Head and Neck Oncology Patients
  - Intervention Starts: Case Management Notified pre-surgery
The Patient’s Voice!

- Patient Interviews
  Asking patients to share their experience
  - Their feedback and suggestions will be used as we further develop our process

Overall Take Aways (Group 1, pre PDSA Cycles)
  - Prophylactic tube placement needs to be mandatory
  - Initiate home health prior to tube placement
  - Surgery was expensive
  - Patients were not warned or educated enough about pain or infection risk
  - Overall satisfaction with tube placement experience was positive

Group 2 interviews are in progress
### Action Plan

**PDSA Cycle 2**

<table>
<thead>
<tr>
<th>Intervention</th>
<th>PDSA Cycle #</th>
<th>Impact Effort</th>
<th>Pareto Chart Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assign to Education Department: Educate the General Surgery Clinic staff about the new process and their responsibilities in it</td>
<td>C2</td>
<td>High Impact High Effort</td>
<td>Education</td>
</tr>
</tbody>
</table>

**Step 2:** Educate Others on the Process
Process Measure

PDSA Cycle 2
Education of Staff on Process

General Surgery Clinic Staff Competency Scores for the Process on Radiation Oncology Head and Neck Patients Needing Feeding Tubes

Intervention Starts
Staff Education

ASCO Quality Training Program
Outcome Measure

Decreased from 71% to 0% of our patients that had 3 or more rework loops
Sustainability

- Process Map
  - Well defined roles and expectations
  - Minimizing waste in the process by reducing rework loops

- Checklist
  - A standardized multi-department checklist
  - Electronic checklist within the EMR

- EMR
  - Enhancing accessibility to documentation of progress for all departments
  - Improving communication

- Education
  - Educating all staff involved in the process at time of hiring
  - Requiring annual competency

- Policy
Thank you!

Contact us for any questions or comments!

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