Pharmacist Directed Chemotherapy Care Navigation

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Disclosures

- Dr. Pires has no affiliation(s) and financial interest(s) which should be disclosed
- Mr. Gammon has no affiliation(s) and financial interest(s) which should be disclosed

Objectives

1. Describe the new roles for pharmacists and technicians that are pivotal to the success of the Pharmacist Directed Chemotherapy Care Navigation process.
2. Discuss the importance of having both responsibility and authority for a given set of practice parameters in a collaborative drug therapy management agreement.

Introduction

- Oncology care is becoming more complex
  - New drugs
  - New regimens
  - High alert medications
  - Narrow therapeutic window
  - Range of toxicity
  - Confusing regimens
- A recent large study showed that the incidence of medication errors range from 7.1% to 18.8% per patient visit in adult and pediatric patients, respectively, and 13% resulted in injury


The Trigger

- Four medication errors prompted a re-evaluation of our chemotherapy prescribing, compounding, and administration procedures
- Resulting from that analysis was a novel, prospective pharmacy process that centralizes the authority and responsibility for the implementation of the oncologist’s chemotherapy plan

Program Goal

- The pharmacy team will be fully integral to the chemotherapy processes
- In collaboration with the oncologist and nurse, the pharmacist will participate at every decision point in the patient’s chemotherapy experience and will provide a consistent, seamless, robust and error free execution of the patient’s chemotherapeutic plan
- The pharmacy team consists of
  - Oncology Clinical Pharmacist Specialist
  - Oncology Order Preparing Pharmacist (OPP)
  - Chemotherapy Verifying Pharmacist (CVP)
  - Chemotherapy Compounding Pharmacist (CCP)
  - Oncology Support Pharmacy Technician (OSPT)
  - Oncology Compounding Technician (OCT)
Program Objectives

- Improve the safety of chemotherapy care
- Improve the efficiency of patient care
- Champion advances in the use of technology
  - chemotherapy computerized physician order entry system consolidate disparate record keeping
  - facilitate access to information critical to medical decision making
  - promote standardization of practice using order sets
- Improve inter-provider communication
- Pharmacists will bring both oncology and pharmacy expertise to ensure that every practice standard reflects the leading edge of oncology care
- Extend the traditional pharmacist and technician roles and create a collaborative drug therapy model of practice
- Promote the hospital’s mission of care, research and teaching at all levels

History

- 2001 – Nurse “hand writes” MD orders and administers chemotherapy
- Transitioned to pharmacist entered orders
- 2004 – Board certified oncology pharmacist hired
- organized order writing of chemotherapy and supportive therapies
- standardized chemotherapy ordering using pre-formatted templates
- became involved in the research protocols that were being initiated by the oncology staff
- 2009 - Oncology, pharmacy, nursing and medical directors conducted a FMEA to determine the potential points of failure in our chemotherapy processes
- Numerous problems identified

System Redesign

- The oncology physicians agreed to document chemotherapy care plans in the EMR in a standardized fashion
- The oncology nurse and CCP would complete a clinical indicator checklist prior to chemotherapy preparation and administration
- Patient scheduling was aligned with unit capacity
- Pharmacy would be integrated into unit governance
  - participate in the development of policies and procedures
  - All patient specific information, including information from other institutions or laboratories, would be captured in the EMR
- Scheduled meetings with the hospital administration and physician, nursing and pharmacy staffs (“Safety and Serenity”) would help to create a “shared mental model of care”
  - identify obstacles faced by each discipline
  - provide realistic options for remediation of these problems
  - improve communication and promote a culture of respect

Operational Issues

Barriers
- Pharmacy workload
- Transition an “on demand” system to decrease waste
- Consensus needed for regimen standards for and best practices
- Clinical information in various places
- Chemotherapy plan and ordering standardized

Remediation
- Justify positions
- Changes were made to workflow patterns for MD, RN and RPh
- Weekly multidisciplinary review of every patient, to solidify and communicate the plan
- Developed electronic flow sheet, external source data entered
- Standardized order templates and CPOE initiated
Safety – ASCO Standards

ASCOT Chemotherapy Administration Standards

Safety – Medication Errors

Oncology Medication Errors

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual # of Events</th>
<th>Events/Dose Potential</th>
<th>Prescribing/Ordering</th>
<th>Administering</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>14 26</td>
<td>0.03%</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>2010</td>
<td>15 33</td>
<td>0.04%</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>2011</td>
<td>12 33</td>
<td>0.04%</td>
<td>21</td>
<td>8</td>
</tr>
<tr>
<td>2012</td>
<td>23 45</td>
<td>0.05%</td>
<td>22</td>
<td>8</td>
</tr>
<tr>
<td>2013 (YTD)</td>
<td>4 16</td>
<td>0.03%</td>
<td>12</td>
<td>4</td>
</tr>
</tbody>
</table>

Efficiency – Waste

Chemotherapy Waste

(As Percentage of Chemotherapy Drug Costs)

<table>
<thead>
<tr>
<th>Year</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste</td>
<td>6.9%</td>
<td>1.7%</td>
<td>0.2%</td>
<td>0.2%</td>
<td>0.6%</td>
<td>0.2%</td>
</tr>
</tbody>
</table>

Efficiency – Pharmacy Workload

Pharmacy Workload

<table>
<thead>
<tr>
<th>Year</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Chemotherapy Doses Administered</td>
<td>76,328</td>
<td>76,622</td>
<td>83,828</td>
<td>88,313</td>
<td>46,979</td>
</tr>
<tr>
<td>Research Patient Enrollments</td>
<td>259</td>
<td>435</td>
<td>360</td>
<td>188</td>
<td>90</td>
</tr>
<tr>
<td>Number of Open Research Drug Studies</td>
<td>35</td>
<td>44</td>
<td>41</td>
<td>45</td>
<td>43</td>
</tr>
</tbody>
</table>

Leveraging Technology

- Chemotherapy Computerized Physician Order Entry (CCPOE)
  - Upgrades basic CPOE program infrastructure
  - 243 (to date) order sets and regimens for chemotherapy use in clinical care and research
- Workflow tracking board
- Electronic chemotherapy flow sheet
  - Consolidate information from outside hospitals or laboratories into our EMR
  - Required documentation in clinical notes, electronic medication administration record, etc.
- Fully implemented bar-code medication administration
- Utilization of “smart pump” technology

Novel Pharmacist Role

- Responsibilities of the Order Preparing Pharmacist (OPP) expands the practice landscape in oncology
  - Mentored by board-certified oncology pharmacy specialist and oncology staff
    - Calculate chemotherapy dose, choose diluent, volume rate and order of administration of chemotherapy regimen
    - Provide electrolyte replacement
    - Add or modify supportive drug therapies
    - Provision of drug information
    - Interpret medical information
    - Using clinical indicators, evaluate patients’ readiness for chemotherapy
    - Determine the need for clinical holds and work with oncologist staff to resolve patient specific issues and/or modify plan

- 340B drug discount program participation saves an average of $3.7 million dollars in FY 13
- WIH uses these savings provide services to the under insured in our community

> April 2010: Chemotherapy compounded after patient cleared
Novel Technician Role

• Technician role emerged as program expanded - Oncology Support Pharmacy Technician (OSPT)
• Experienced, PTCB certified pharmacy technician
  • gathers all medically relevant information
  • ensures that the electronic flow sheet is current
  • creates and updates a communication form for nursing and pharmacy that describes the patients’ state of readiness for chemotherapy
  • provides "telephone triage" for the OPPs
  • refills the automated dispensing cabinet
  • maintains stock
  • ensures pharmacy regulatory compliance within these spaces.

Pharmacist Directed Chemotherapy Care Navigation - Summary

• This process is a pharmacy team effort
  • each step is critical to providing consistent, seamless, robust and error free execution of the patient’s chemotherapy plan
  • provides a coordinated system of checks and balances
  • The program has both the responsibility and the authority
    • insure that chemotherapy delivery to the patient will be specific to her goals
    • efficiently ordered
    • prepared under strict USP 797 standards
    • monitored to signal when or if the plan should be modified based on response or toxicity

Pharmacist Directed Chemotherapy Care Navigation - Summary

• The OPP, who bears the majority of the responsibility for ordering and monitoring of chemotherapy, enjoys a collaborative drug therapy management role with the oncology physician staff
• A pharmacy technician accesses and coordinates information required for clinical decision making, and allows the pharmacist to focus on the analysis of data rather than retrieval of data
• OPP and Informatics Pharmacists have championed and capitalized on our EMR resources to create technologic tools to support the safety and efficiency of our process

Pharmacist Directed Chemotherapy Care Navigation - Summary

• While labor intensive, this program has saved money and generated revenue
• Physician acceptance has been increasingly enthusiastic
  • Oncology physician practices are now affiliating with the institution so that their private practice patients can benefit from pharmacist directed care
In summary, this program has improved the safety and efficiency of chemotherapy care, proved to be financially beneficial and carved out unique roles for pharmacists and technicians.