INTRODUCTION

- Cancer is the 2nd most common cause of death, accounting for 26% of all deaths
- Chemotherapy errors can potentially lead to significant harm or death
- 1 out of every 50 chemotherapy orders, results in serious death
- Lack of HIT support for workflow increases error

FACTS

- Electronic Systems Today Fail to Support Chemotherapy Management
  - 20% of medication errors reported in 2002 were made with computerized systems
  - The Institute of Safe Medication Practices (ISMP) identified numerous problems with electronic systems
  - ISMP developed recommendations for chemotherapy management

ORGANIZATIONS & RECOMMENDATIONS

- The American Society of Clinical Oncology (ASCO) & Oncology Nursing Society (ONS)
  - Produces chemotherapy safety standards, intended to reduce the risk for errors
- The Institute of Safe Medication Practices (ISMP)
  - Recommend standardized order & pharmacy recalculation of all dosing
  - Produce chemotherapy safety standards, intended to reduce the risk for errors
- The Institute of Safe Medication Practices (ISMP)
  - Recommend establishing dose limits for chemotherapy agents

STRATEGIES FOR ERROR DETECTION & PREVENTION

- Education
  - Chemistry Management
  - Culture Change - Reporting Errors as Acceptable
- Dedicate chemotherapy teams
- Provider order entry has been shown to reduce the serious medication error rate by 55 percent
- Nursing Medication Administration Check is Essential

WORKFLOW

- Review patient laboratory data, clinical data, toxicity
- Review order into computerized chemotherapy ordering system
- Review orders, verify all values, weight, height, and doses
- Review orders for viable drug names, weight, length, and volume
- Review medications
- Check medications against orders
- Verify identity of patient
- Administer medications and receive infusion/intrusion

DATABASE WAREHOUSE

- Oncology EHRs will be able to replicate information in a flowsheet to track where patients are in their chemotherapy regimen
- Point of care documentation can feed a data warehouse so performance measurement can be assessed

SOLUTIONS

- Chemotherapy order entry system with standardized regimens and documentation templates
- Alerts and decision support within the Electronic Health Record (EHR)
- Bar-coding all through all the chemotherapy management processes
- Inter-professional approaches to documentation

PROCESS

- Coordination between professionals and synchronization between each step within the chemotherapy workflow process is essential

HIT & EHR REQUIREMENTS

- Principles and Guidelines for EHR
  - Accuracy
  - Standardization
  - Automation
  - Decision Support
  - Efficiency
  - Reliability
  - Usability

STANDARDIZED TERMINOLOGIES

- Flow of information from one electronic system to another
- Help EHR to create maps
- Provide a crosswalk between systems for interoperability
- Provide outcome analysis

CLINICAL DECISION SUPPORT (CDS)

- Encompasses a variety of tools and interventions
- Computerized alerts regarding dose limits, allergies, checking drug-drug interactions
- Reminders
- Clinical guidelines
- Order sets per specialty
- Patient data reports and dashboards
- Documentation templates
- Diagnostic support
- Clinical workflow tool

EVIDENCE-BASED PRACTICE

- Evidence-based practice is a multi-step, dynamic process that incorporates best external data and best clinical judgment
- Use of EHR data for quality reporting is essential to meet Meaningful Use
- Integration of evidence-based guidelines within the EHR is required

CLOSED LOOP MEDICATION ADMINISTRATION

- Bar code technology is emerging as a solution to support the closed loop medication administration and the “Five Rights”:
  - Increase patient safety
  - Eliminate error
  - Improve communication between pharmacy and nursing
  - Improve medication documentation

BENEFITS OF HIT

- Reduce risk of error by 50% post EHR oncology implementation
- Reduce chemotherapy order preparation time by ten minutes
- Improve patient safety
- Reduce errors related to dosing
- Improve health outcomes
- Produce a flowchart for clinicians to track all dates of chemotherapy regimen details
- Monitor the patient’s progress
- Optimize the care by timely communicating of markedly abnormal laboratory tests
- Facilitate access to better quality healthcare

IMPLICATIONS

- Nursing Research: Oncology nurse’s feedback and involvement must be encouraged and translated into action by conducting their own research in the future
- Education: Oncology nurses perceive patient education and safety as a core element of their professional role and are receptive to advancing their expertise in this area

REFERENCES: