Promoting Medication Error Prevention Strategies Through Education

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Background/Objectives:
• Cancer treatment can involve complex, cyclical, multi-day, multi-drug regimens with a potential for serious toxicity. The therapeutic index for chemotherapy drugs is narrower than that for any other class of drugs.¹

Chemotherapy errors constitute the second most common cause of fatal errors.²

• In British Columbia, cancer drugs are provided by six BC Cancer Agency (BCCA) Centres and 33 regional Communities Oncology Network (CON) hospitals, that work together to ensure BC residents receive safe, effective cancer treatment close to home.

• BCCA performs process reviews to identify potential sources of error in the various stages of chemotherapy preparation, delivery, and administration. The results of these reviews, along with literature reports of cancer drug medication errors, are used to develop process improvements to reduce risk of future errors and to create educational material.

• To promote consistency of care between BCCA and CON hospitals, BCCA CON Pharmacy Educators provide education to CON hospital pharmacy, nursing and medical staff about process improvements to reduce errors.

Design:
• Reports of errors and near misses, Institute of Safe Medication Practices (ISMP) safety literature recommendations, and recent safety-related process changes were analyzed.

• BCCA error prevention strategies were categorized according to the following ISMP Canada’s Chemotherapy Medication Error Themes³: Clinical Assessment & Communication of resources.

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Results
The slide presentation illustrated potential sources of error as identified by ISMP pharmacy-related themes, along with corresponding BCCA prevention strategies, process changes, and applicable online BCCA resources. Examples of the education provided include:

Clinical Assessment & Communication of Changes Theme: Interval Timing Errors
Prevention Strategies: 1) Increase awareness of complex protocols; 2) highlight BCCA strategies to make complex protocols clearer. The example pre-printed order (PPO) in Figure 1 was used to illustrate bolding, and a separate day 8 dose modification line to distinguish different drug and dose options, if required, on different days.

Dose Assessment Theme: Maximum Dose Errors
Prevention Strategies: 1) increase awareness of maximum doses; 2) highlight BCCA strategies to improve clarity of dose limits. The example PPO in Figure 2 illustrates improved visibility for the maximum dose.

Drug Administration Theme: Fluorouracil Continuous Infusion Rate Errors
Prevention Strategy: promote use of BCCA online tool “Elastomeric Infusor Rate Error Prevention Checklist” shown in Figure 5.

Drug Monitoring Theme: Lack of Systematic Monitoring Process
A “Monitoring INR with Concurrent Capcitabine and Warfarin” Case Study was used to illustrate error prevention process changes. “Patient had been taking warfarin prior to starting capcitabine and did not have INR monitored as frequently as needed... led to a serious complication.”⁴

CON staff were also referred to the following online BCCA resources:
• Clinical Chemotherapy Assessment and Review Checklist (Oncology, Intravenous, Intraperitoneal) [Clinical Pharmacy Guide] – this handout provides clinical checking guidelines and error prevention tips (see Figure 7)

• Medication Safety Learning Module [BCA Oncology Pharmacy Education Program] – a freely available 4 hour online self-study module that discusses oncology medication errors in the literature, the importance of active sharing of safety learning, and how incident learning results in practice change.

• Patient Guide to Medication Safety – this patient handout (see Figure 8) teaches patients to play an active role in medication safety by familiarizing themselves with their medications, and asking questions.

Conclusions:
Education about error prevention is essential for CON staff to understand BCCA process changes and implementation procedures. BC Cancer Agency CON Educators will continue to liaise between CON hospitals to support safe and consistent cancer medication delivery across BC.

References:

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