

*Manitoba Health, Seniors and Active Living (MHSAL) supports reporting and learning from patient safety events. The focus of a patient safety review is to closely look at the health care system that surrounds and interacts with those giving and receiving care. The goal is to identify risks to patient safety and recommend the most effective ways to minimize risk and improve the delivery of healthcare.*

## **Patient Safety Learning Advisory**

### **Medication Error - Missed Dose of Neupogen**

#### **Summary:**

A patient who received a fourth cycle of chemotherapy one week earlier presented to the Emergency Department (ED) with complaints of a fever and feeling unwell. The patient was asked to return to the ED the following morning for bloodwork.

The patient returned to the ED the next day for the bloodwork as requested. At this time, the patient was found to be neutropenic. The patient was transferred to the Intensive Care Unit for treatment of febrile neutropenia.

It was learned that Neupogen was not ordered for the fourth cycle of chemotherapy but had been ordered with the three previous chemotherapy treatments.

#### **Keywords:**

This review is based on a single event.

#### **Findings of the Review:**

Chemotherapy regimens are entered into a database by the Oncologist. This ensures that the orders may be accessed by other cancer care program sites to order subsequent cycles. The first, second and third chemotherapy cycles included Fluorouracil, Epirubicin and Cyclophosphamide, along with Neupogen. The fourth, fifth and sixth cycles of chemotherapy consisted of Docetaxel only.

Due to client illness, the third chemotherapy cycle was delayed. This resulted in Neupogen not appearing in the order set for the fourth chemotherapy cycle.

Due to the change in chemotherapy regime as well as the Neupogen not being in the order set, the community physician believed that Neupogen was not required during the fourth cycle of chemotherapy.

The chemotherapy order set is organized such that Neupogen is found in the Regimen Reference Orders (RRO). It is only included where it is indicated for primary prophylaxis each time the regimen is ordered. Regimens where Neupogen is indicated are based on specific criteria outlined in the clinical practice guidelines.

The community program did not utilize the clinical practice guidelines for Neupogen and relied on the Central Care Program physician to determine all treatment regimens. The community program physicians do not make changes to medications or treatment decisions without consultation with an Oncologist. Based on the documented treatment plan and the Neupogen approval note, Oncology believed that there was enough information given to the community program site to prescribe Neupogen with each cycle.

All Neupogen support protocols are entered into the database “ad hoc.”; this means that if Neupogen is required with each cycle of chemotherapy, the Oncologist needs to enter the order with each cycle of chemotherapy in addition to ordering the chemotherapy regimen.

Neupogen is prescribed and filled at an off-site pharmacy. The client self-administers Neupogen 48 hours after receiving chemotherapy. If the date of a chemotherapy treatment is changed, this is entered in the “dose recording” screen of the database by using the “adjust” function. This method does not change the date of medications given off site and creates the potential for the medication to be omitted.

The client presented to an Emergency Department during the evening with a fever. Nursing staff triaged and assessed the client and contacted the physician by phone. Verbal instruction was provided for the client to return to the ED in the morning for bloodwork. When the client returned to the facility in the morning, the temperature was higher than the previous evening. Bloodwork showed neutropenia.

The existing policy regarding management of febrile neutropenia was not utilized by care providers in the Emergency Department.

**(System Learning:**

Include Neupogen in all Regimen Reference Orders (RROs) as an option that may be selected if recommended by the oncologist or if a decision is made based on clinical practice guidelines.

Ensure that Neupogen protocols are indicated as a support protocol in the client specific treatment tab of the pharmacy ordering software.

Utilize the "treatment delay" function within the database when treatment delays occur to reduce the risk of intended medications not being filled and administered by the client.

Review the policy concerning the Identification and Management of Neutropenic Fever Syndromes in Adult and Pediatric Patients with clinical staff and physicians in the ED

Share the lessons learned from this patient safety event with the Department of Emergency Medicine and site Chief Medical Officers so they may share with their respective staff.

Incorporate this case in the Febrile Neutropenia Event presentation at the Community Cancer Care 2017 Educational Conference for shared learning.

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