Duration and Acuity of Oncology Treatments at Outpatient Cancer Center

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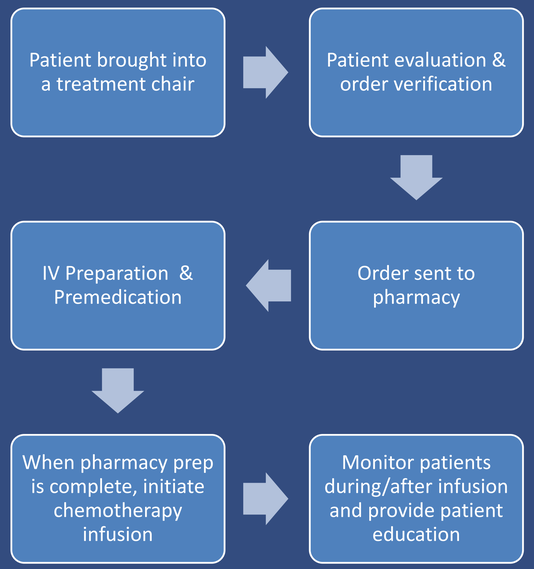
TAP TO GO BACK TO KIOSK MENU

Introduction/Problem

Safe patient care requires appropriate distribution of nursing resources among patients with different levels of care needs. Inaccurate estimation of treatment duration and associated acuity can inadvertently increase the wait time for patients and workload for clinical nurses. Excessive workload is known to be associated with increased work stress and decreased job performance among nurses. Additionally, it can negatively affect communication between patient and nurse.

When a treatment is scheduled at our Hematology/Oncology clinic, an outdated reference sheet is used as a tool to assign treatment duration and an acuity score. As a result, the clinic must accommodate an unpredictable number of patients and often higher-than-expected levels of care needs among these patients. These issues can potentially compromises the timeliness of the treatment, the quality of nursing care, and nurses' job satisfaction.

Overview of Nursing Work Flow



Aim/Goal

Our goals are to understand the actual usage of the treatment unit by our oncology patients, to update our scheduling reference tool, and to eliminate/reduce discrepancies between planned and actual durations and acuity of treatments.

The Team

- Clinical Nurses with Shapiro 9 Hematology & Oncology
- Clinical Nurses with Shapiro 7 Hematology & Bone Marrow Transplant

The Interventions

- The data collection took place over two weeks in April and May of 2018.
- Nurses noted the time each patient was brought into a treatment chair (chair-in time) and the time the patient left the chair (chair-out time).
- Nurses also noted the reasons for any delays in treatment initiation or patient departure from the treatment area.
- Each patient data was recorded on a data collection tool designed by the unit-based educator.
- Each case of actual chair usage (the total time required from chair-in to chair-out) was compared to the duration of the scheduled visit for the same patient and treatment.

Results/Progress to Date

- The chair usage data from Shapiro 9 Hematology/Oncology was analyzed.
- Between 4/26/18 and 5/9/18, 484 patient encounters were captured by our nurses.
- These encounters included 99 different types of antineoplastic and supportive interventions.

Most Frequent Interventions

Visits	# Encounters
Blood draw from porta-a-cath	122
Paclitaxel infusion	25
Gemcitabine infusion	21
Pembrolizumab infusion	19
Nivolumab infusion	18
FOLFOX regimen (Oxaliplatin + Leucovorin + Fluorouracil IV Push + Fluorouracil IV Continuous Infusion)	17
Leuprolide Depot injection	17
Trastuzumab infusion	17

For more information, contact:
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More Results/Progress to Date

- In many cases, marked discrepancies were observed between the actual chair usage and the scheduled/planned duration of treatment.
- Inconsistent durations of treatment were sometimes assigned to different patients receiving the same treatment (e.g., Weekly paclitaxel treatment was booked as a 60-min treatment for one patient but as an 180-min treatment for another patient).

Examples:

Paclitaxel Data (25 encounters)

The median value of scheduled duration (range 60 - 180 min)	120 min
The median value of actual chair usage (range 109 – 330 min)	165 min

Pembrolizumab Data (18 encounters)

The median value of scheduled duration (range 60 - 180 min)	90 min
The median value of actual chair usage (range 53 – 468 min)	139 min

Gemcitabine Data (22 encounters)

The median value of scheduled duration (range 60- 120 min)	90 min
The median value of actual chair usage (range 57 – 468 min)	87 min

FOLFOX Data (17 encounters)

The median value of scheduled duration (range 150 - 240 min)	180 min
The median value of actual chair usage (range 158 – 398 min)	205 min

Comparison of unit-wide total treatment duration over 2 weeks

(484 encounters)

Planned/scheduled treatment duration, total	43,340 min
Actual chair usage, total	53,018 min

Delay Reasons Noted by Nurses (Unit-Wide Data)

Delays in getting patients into the chair	#
Patient arrived too late	42
Pending labs	32
Provider visit delay	12
RN acuity was too high when patient arrived	10
No chair available	9
Treatment order not available	6
Pt arrived too early and had to wait	3
Other	28

Delays in initiating treatments	#
Pending labs	47
Chemo order not available	15
Clinical issues	8
Other	23

Delays in departure	#
Clinical issue	11
Transportation issue	3
Admission	2
Other	11

Lessons Learned

- The actual chair usage was significantly longer than the time planned/scheduled for the treatment in many cases.
- The amount of time spent by each patient in chair is much longer than the duration required for the administration of intravenous chemotherapy and may include the time required for IV preparation, pharmacy preparation, premedication, patient education, and post-infusion monitoring.
- Unanticipated delays are common due to clinical and logistical reasons, some of which can significantly prolong the chair time by patients.

Next Steps

- Analyze the similar data set collected at Shapiro 7 Hematology/Bone Marrow Transplant Clinic.
- Update the scheduling reference tool to reflect the actual chair time for each treatment.
- Reduce the number of preventable delays.
- Conduct literature review to further investigate how treatment duration and patient clinical needs are translated into acuity scores, which can be used to improve patient assignment.

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