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A Lean Approach to Streamline Receipt and Storage Process of Cytotoxic Drug between Pharmacy and Chemotherapy Day Ward

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Introduction

A high proportion of intravenous chemotherapy treatment is delivered in Chemotherapy Day Ward (CDW). The intravenous cytotoxic drug reconstitution is prepared by pharmacy and then transported to CDW for patient administration. There were numbers of cytotoxic drug related incidents regarding wrong patient identity on label of the admixed cytotoxic drug to be received in CDW, cytotoxic drug spillage caused by non-ideal packing design, delayed drug delivery, misplacing the drug after receipt, etc.

Objectives

It aimed to (1)identify risk and gap in the management of cytotoxic drug that is transported from pharmacy to CDW; (2)develop solutions and streamline drug delivery and receipt process; (3)evaluate efficacy of the improvement program on outcomes regarding patient safety, no delay in drug administration and no cytotoxic spillage.

Methodology

A value stream mapping was utilized to review and identify constraints in the whole process that admixed cytotoxic drug was transported from pharmacy to CDW before administration to patients in September 2015. The CQI program focused on 3 areas for improvement including re-engineering the workflow of receiving admixed cytotoxic drug to ensure accuracy of the drug and patient information, designing a new color coding tag to facilitate staff handling cytotoxic drug storage work, as well as collaborating with pharmacist to revamp the design and develop a new privacy protection plastic bag to prevent drug spillage.

Result

(1)Prior CQI program implementation, there was delay in cytotoxic drug administration

over 1 to 2 hours due to prescription and admixing problems. Since the day counter checking mechanism was established in November 2015, all admixed cytotoxic drugs were accurately checked against the prescription by nurses upon receipt. From November 2015 to November 2016, 9 cytotoxic drug preparation problems were early detected by nurses and prompt communication with pharmacy colleagues was made, that drug reconstitution and delivery from pharmacy to CDW was completed within half an hour before administration.

(2) Cytotoxic drug is delivered from pharmacy to CDW in an average 12 turns per day. Nurses spent inordinate length of time in identifying and allocating specified drugs to specified patients. The new color coding tag can facilitate clear identification which simplify and speed up cytotoxic drug storage works. This saved around 108 minutes nursing time per day.

(3) A new privacy protection bag was procured and used by pharmacy in late 2016. There was no reported case of cytotoxic spillage in 2016 caused by cutting action over the plastic bag.

Implementation of a pragmatic CQI program through team effort in nursing and pharmacy can contribute positive outcomes in enhancing patient safety and shortening turnaround time of admixed cytotoxic drug from pharmacy to CDW thus less delay in patient treatment waiting time.