APPLICATION OF FAILURE MODE AND EFFECT ANALYSIS TO IMPROVE CYTOSTATIC DRUG STOCK MANAGEMENT

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Key words: stock, FMEA, quality

Background and importance
Drug stock management is a complex process because space, budget and other external factors such as delivery delays or demand variability must be taken into account. To manage a drug stock properly is a pharmacist's responsibility.

Aim and objectives
To carry out a Failure Mode and Effect Modal Analysis (FMEA) in the cytostatic drug store to improve the stock management process.
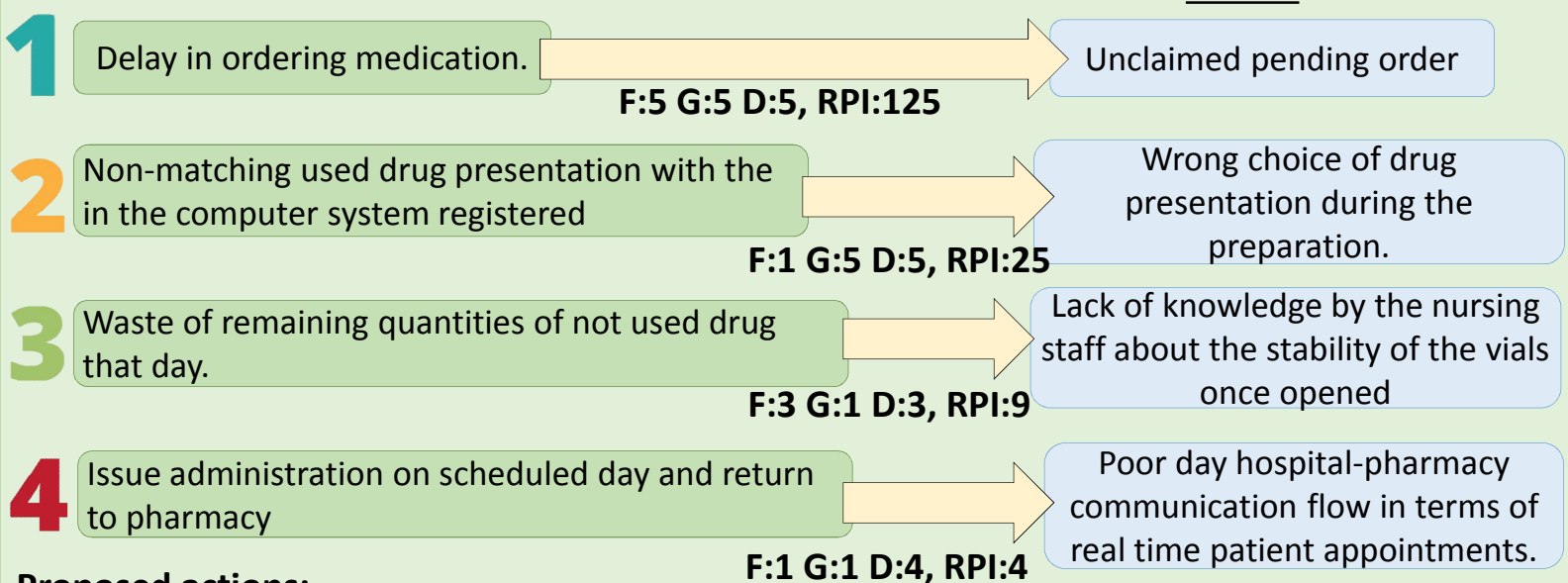
Material and methods
A multidisciplinary team was assembled to perform the detection of failure modes and their causes through FMEA methodology. Then, risk priority index (RPI) was calculated: Frequency (F) x Severity (G) x Detectability (D), assigning values from 1 to 5 to each factor. Finally, corrective measures for risks were suggested.

Results

Failure modes:

Causes:

1 Delay in ordering medication. → Unclaimed pending order

F:5 G:5 D:5, RPI:125

2 Non-matching used drug presentation with the in the computer system registered → Wrong choice of drug presentation during the preparation.

F:1 G:5 D:5, RPI:25

3 Waste of remaining quantities of not used drug that day. → Lack of knowledge by the nursing staff about the stability of the vials once opened

F:3 G:1 D:3, RPI:9

4 Issue administration on scheduled day and return to pharmacy → Poor day hospital-pharmacy communication flow in terms of real time patient appointments.

F:1 G:1 D:4, RPI:4

Proposed actions:
✓ Training sessions for nurses, orderlies and administrative staff.
✓ Validation checklist implementation in the process of preparing.
✓ Development of a list of drug stability once opened.
✓ Real-time confirmation by day hospital of patient attendance at appointments.
✓ Realization of the order with drugs whose stock is below the alert stock was the sub-process with the highest number of failure modes. Delayed medication order was the failure modes with the highest RPI.

Conclusion and relevance
The FMEA methodology allows us to detect failure modes and their causes in order to redefine a process to improve its quality. Stock management process, is a key element and we learn that more frequent training sessions for Pharmacy Department staff and to monitor actual stock in an exhaustive way are needed.
ATC code: 5. Research performed on artificial model

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