

QUALITY INDICATORS IN AN UNITARY DOSE DRUG DISPENSATION SYSTEM: MEASUREMENT, ANALYSIS AND IMPROVEMENT



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BACKGROUND

Quality indicators (QIs) are measures of health care quality in order to achieve the planned results in a Quality Management System.

PURPOSE

To evaluate the results of some QIs in an Unitary Dose Drug Dispensation System (UDDDS) in a Hospital Pharmacy Department (HPD).

MATERIAL AND METHODS

Prospective observational 3-weeks study (September'14) performed in a second level hospital. QIs and standard values (SV) to achieve maximum quality were established by a working group: 2 pharmacists and 1 nurse.

411 beds, 52.8% of them with UDDDS and manual transcription by nurses and validation by pharmacists.

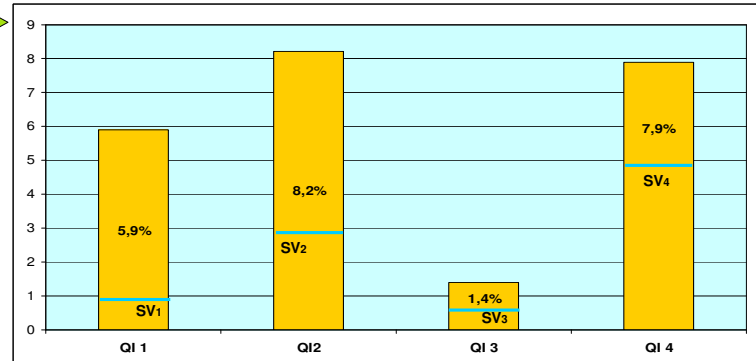
Three days a week a "pilot cart" (PC) was selected by a random method (extraction balls) and checked by a pharmacist. Data were recorded and analyzed, using a form designed for that purpose, Farmatools-Dominion® programme and Microsoft Office Excel®.

QI1: % Filling errors	$[\text{errors} / \text{number of dispensed drugs (n}^\circ\text{DD)}] * 100$	SV ₁ < 1%
QI2: % Transcription errors	$[\text{errors} / \text{number of prescription lines (n}^\circ\text{PL)}] * 100$	SV ₂ < 3%
QI3: % Validation errors	$[\text{errors} / \text{n}^\circ \text{PL}] * 100$	SV ₃ < 0.5%
QI4: % Returns	$[\text{returned drugs} / \text{n}^\circ \text{DD}] * 100$	SV ₄ < 5%

RESULTS

9 PC were checked
474 PL
1736 DD
207 PATIENTS

QI 1	5.9 %
QI 2	8.2 %
QI 3	1.4 %
QI 4	7.8 %



COMMON ERRORS		
102	Filling	- Omission 44 - Different amount 26 - Commision* 16 - Different dose/dosage form/drug 16
39	Transcription	- Omission 11 - Different dose/dosage regimen 14 - Incorrect drug/route of administration/duration 11 - Commision 3
7	Validation	- Different drug 2 - Different dose 2 - Commision 1 - Different route of administration 1 - Different dosage regimen 1
136	Returns	- Not administered drug 88 - Transfer/discharge 30 - Finish treatment after cart distribution 16

MAJOR ERROR TYPES: TREATMENT OMISSION

Filling UDDDS-carts (44)

Transcription (11)

* drug should be discontinued but remained in patient's treatment

Even though UDDDS may reduce medication errors, the QIs analyzed were superior to SV previously defined. The measurement of QIs showed non-compliance and required corrective actions to resolve mistakes in order to improve patient security:

- ✓ regular training sessions for HPD staff;
- ✓ instructive note for nursing;
- ✓ technical instructions for nursing assistant;
- ✓ design of a specific form for returned drugs.

CONCLUSIONS

