

Conformity of the drug-use process: a three-year assessment on healthcare units

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Purpose

- Canadian pharmacy practice is governed by many standards (e.g. Medication Management Standards from Accreditation Canada, Practice Standards from Provincial Regulatory Authority). In order to ensure continued quality of care and taking into account the current normative obligations, we developed a set of conformity criteria for the drug-use process of healthcare units.
- The aim of this project was to describe the conformity of healthcare units through an assessment tool over the last three years.

Methods

- This is a descriptive and retrospective study.
- The study was conducted in Sainte Justine Hospital, a 500-bed teaching hospital in Montreal, Quebec, Canada.
- Following pilot visits on three healthcare units, an assessment tool was developed and pre-tested by pharmacy technicians.
- The tool relied on a list of 26 criteria covering the following themes:
 - Storage
 - Waste
 - Controlled substances
 - Refrigerators
 - Medication carts
 - Automated medication dispensing cabinets
 - Medication reconciliation
 - Documentation
 - Resuscitation carts
 - Pharmacy department Intranet.
- The conformity of the drug-use process was evaluated through direct observations by pharmacy students and pharmacy research assistants during a two-weeks round of healthcare units.
- Levels of conformity per criteria and global conformity were calculated per year.
- We compared the level of conformity between 2012 and 2014 using Chi-square and Fisher tests, where appropriated (theoretical effective <5). A p value inferior to 0.05 was considered significant.

Results

- The three years results are presented in table 1
- A total of 26 criteria on healthcare units were assessed in 2012, 2013 and 2014. The global level conformity was of 71% in 2012, 65% in 2013 and 78% in 2014.
- The situation improved significantly for 5 criteria from 2012 to 2014:
 - Presence of a bin for reusable drug returns (p=0.011),
 - Presence of a waste bin for pharmaceutical waste (p<0.001),
 - Medication carts cleanliness (p=0.003),
 - Presence of automated medication dispensing cabinets documentation (p=0.012),
 - Presence of patient's resuscitation pre written order sheet prescription (p=0.001).**
- The level of conformity was not reduced for any criteria from 2012 to 2014.
- The level of conformity remained low for 4 criteria, for example: absence of expired drugs (42% in 2012 and 35% in 2014), **continuous monitoring of refrigerator's temperature (30% in 2012 and 16% in 2014).**

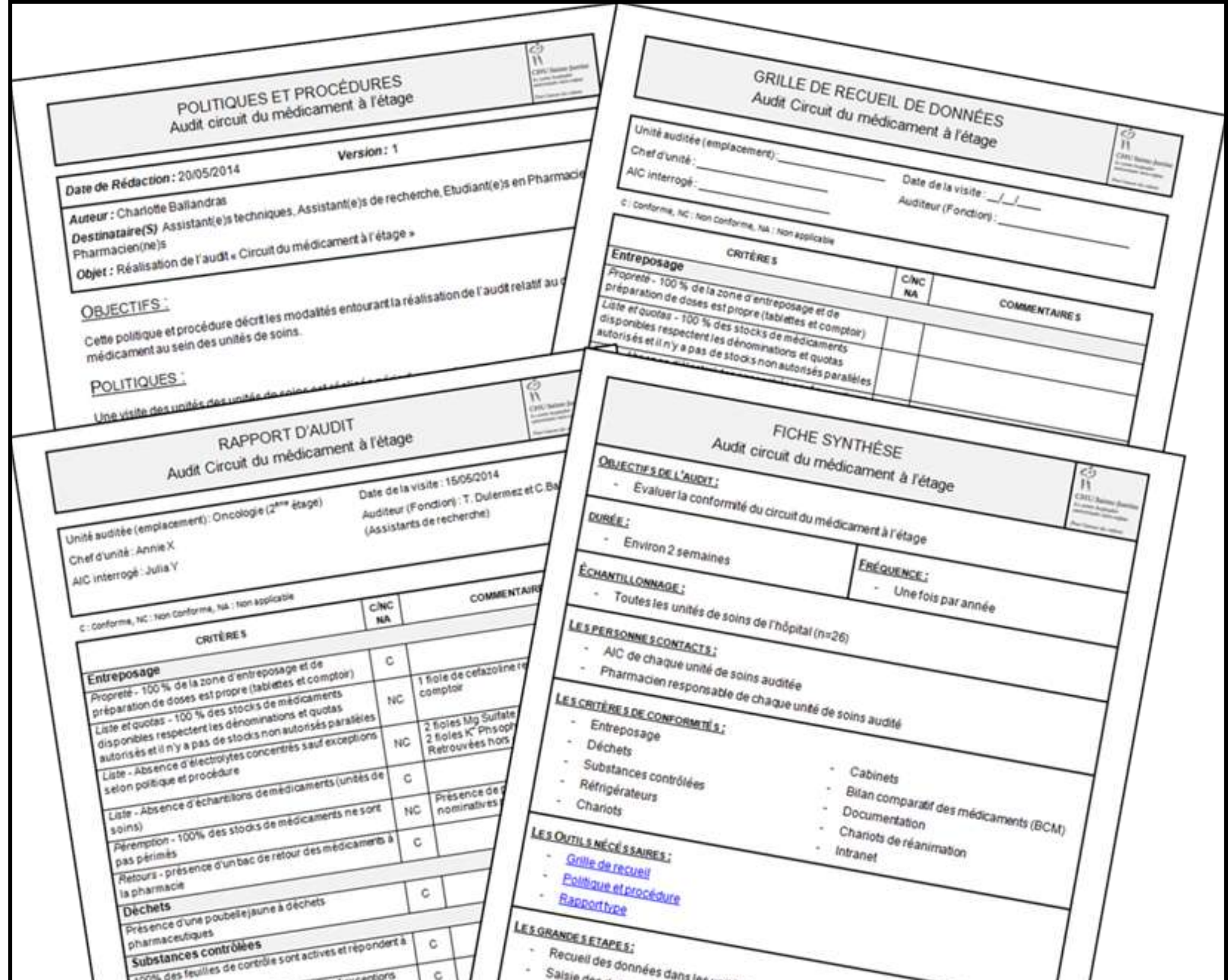


Fig. 1 : Examples of tools used for this assessment

Table. 1 : Three years comparative results

	2012	2013	2014	p-value (2012 vs 2014)
storage				
Cleanliness - 100% of the storage and preparation areas are clean	77 %	96 %	92 %	0.248
List and quotas - 100% of drug's stock in the unit respect authorized lists and quotas	77 %	58 %	62 %	0.229
List - No concentrated electrolytes except authorized by policies and procedures	96 %	81 %	88 %	0.610
Samples - No medication samples	100 %	96 %	96 %	1.000
Expiration - 100% of drugs have not expired	42 %	19 %	35 %	0.569
Returns - presence of a tray for returns	68 %	54 %	96 %	0.011
waste				
Waste - Presence of a yellow bin for pharmaceutical wastes	58 %	62 %	100 %	<0.001
controlled substances				
Control sheets - 100% of control sheets are active	96 %	100 %	96 %	1.000
List - No concentrated opiates except authorized by policies and procedures	100 %	100 %	100 %	Non-applicable
refrigerators				
Thermometer - The fridge have a glycol thermometer	65 %	68 %	80 %	0.250
Registry - 100% of the required temperature values (ie min / max / current) are available for 14 days before the visit	30 %	18 %	16 %	0.235
List and quotas - 100% of drug's stock in the fridge respect authorized lists and quotas, fridge contains only drugs, no food	70 %	68 %	68 %	0.907
Medication carts				
Documentation - 100% of the available documentation on single-dose medication carts is up to date (ie antibiotics dilutions table, compatibility table and the Pharmacy binder)	79 %	38 %	69 %	0.678
Cleanliness - 100% of the carts are cleanly	21 %	71 %	86 %	0.003
Drawer - 100% of the drugs contained in the drawers carts are included in the common unit drug list	57 %	29 %	29 %	0.127
automated medication dispensing cabinets				
Documentation - 100% of the available documentation on cabinets is up to date and the Pharmacy binder (Black) is present	58 %	43 %	100 %	0.012
Cleanliness - 100% of the automated medication dispensing cabinets are clean	100 %	100 %	92 %	1.000
medication reconciliation				
100% of the admissions have a medication reconciliation	43 %	63 %	67 %	0.137
100% of the medication reconciliation evaluated (n=5) are congruent (addressograph, allergy, drug identification, date, nurse signature)	71 %	58 %	53 %	0.265
documentation				
No pre-written prescription preprinted unless authorized	96 %	88 %	95 %	1.000
100% of preprinted medication administration records are up to date	85 %	80 %	100 %	0.121
Resuscitation - 100% of audited cases (n = 5) have a congruent pre-written order sheet prescription (ie patient name, weight, nurse signature)	35 %	58 %	92 %	0.001
Presence of smart pumps binder	58 %	43 %	46 %	0.480
Resuscitation carts				
Presence of a full tray without expired drugs	100 %	100 %	88 %	0.110
The assistant can confirm the use of the simulation module for self-learning	86 %	42 %	86 %	1.000
pharmacy department Intranet				
The assistant is able to show the login page for two items available on the Intranet (eg IV guide, pumps portal, cabinets portal)	90 %	69 %	100 %	0.194

Conclusion

This study shows a high level of conformity of the drug-use process in a teaching hospital and the usefulness of a periodical evaluation of an assessment tool in unit of care. However, there are criteria where significant efforts are required to get higher conformity (e.g. absence of expired drugs, cold chain management). While decentralized pharmacists can contribute to direct patient care, hospital pharmacists should not neglect the whole drug-use process through assessment of the drug-use process.

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