

Comparison of information available in the medication profile of an electronic health record and the inpatient best possible medication history



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Purpose

- ◆ Medication reconciliation (MedRec) can improve patient safety.
- ◆ In Canada, most provinces are implementing electronic health records (EHR).
- ◆ The Quebec Health Record (QHR) can theoretically be used for medication reconciliation. However, the quantity and the quality of information available in this EHR have not been studied.
- ◆ The aim of the study was to compare the quantity and quality of the information collected between the inpatient best possible medication history (BPMH) and the QHR.

Methods

- ◆ This is a descriptive prospective study conducted in a 500-bed tertiary mother-and-child university hospital center.
- ◆ All inpatients from May 19th to 26th 2015 admitted to the hospital pediatrics, obstetrics and surgery units were considered for inclusion. Every prescription line in the BPMH and QHR was compared.
- ◆ 24 hours after the admission of a subject, we extracted his medication profile on the QHR.
- ◆ After the patient discharge, we consulted his most recent BPMH on his medical record.
- ◆ Every prescription line was analyzed in term of completeness (medication's name, dose, frequency and interval of use)
- ◆ We then counted the number of prescription lines that matched completely or partially between the BPMH and the QHR of each subject.

Fig. 1 - Exemple of a pharmacologic profile in the QHR.

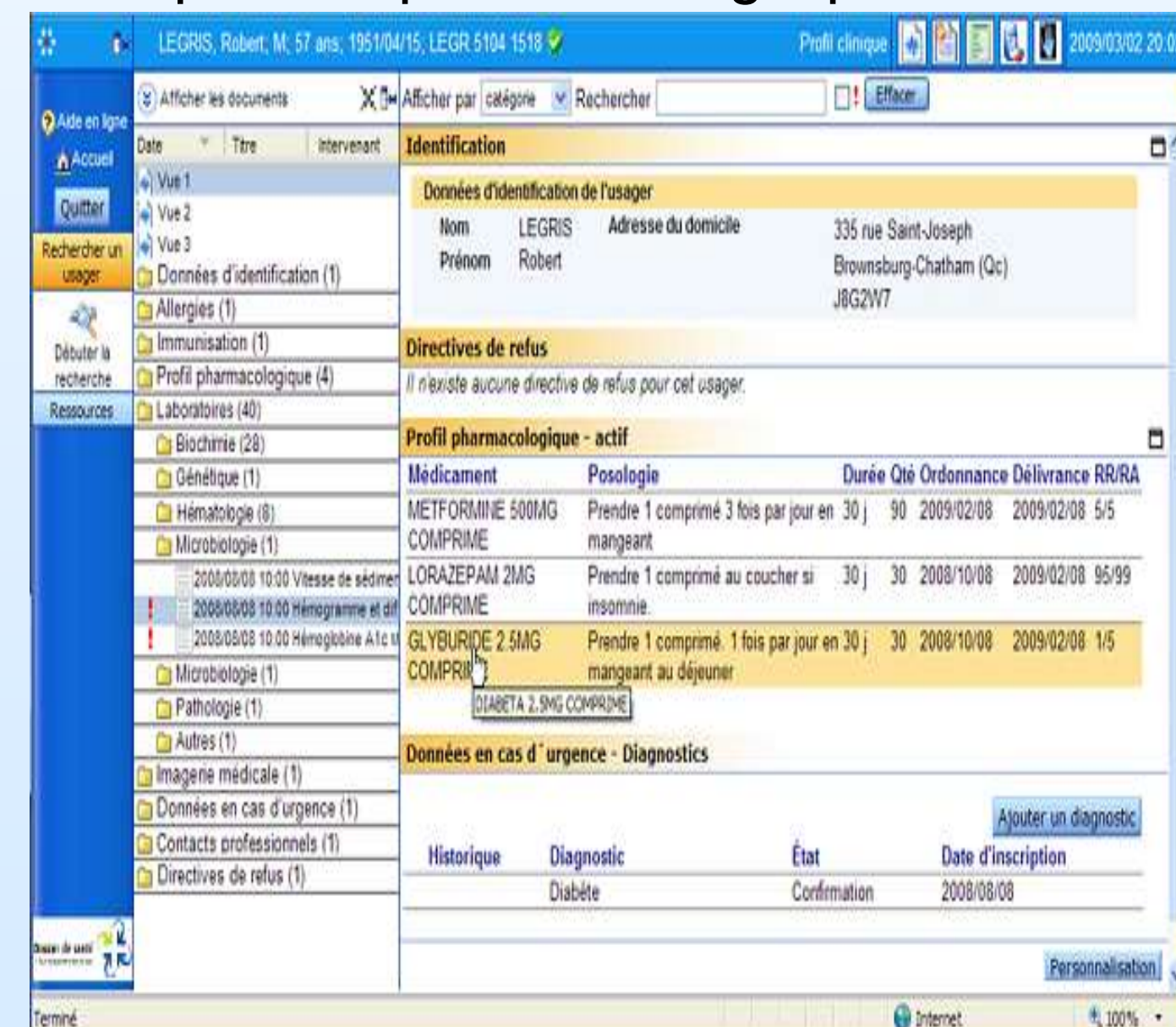


Fig. 2 - BPMH Formulary of Sainte Justine Hospital



QHR: Quebec Health Record

BPMH: Best Possible Medication History

Results

- ◆ The study included 344 patients.
- ◆ A total of 1,039 prescription lines were analyzed.
- ◆ The medications' name and dosing were more often available in the QHR (95%) than in the BPMH (61%).
- ◆ However, fewer medications were reported in the QHR than in the BPMH, with averages of 1.30 vs. 1.84 medications per patient, respectively.
- ◆ Concordance between the medication names between QHR and BPMH was found in 48% of the prescription lines; this rate fell to 29% when also factoring daily dosage.
- ◆ When analyzing discrepancies, 29% of the QHR lines that did not match (85/290) referred to as needed medications and 20% of the BPMH unmatched lines (89/443)

Table 1 - Comparison of the QHR and the BPMH in pediatric and obstetric population

	Pediatric population		Obstetrics/gynecology		All populations	
	n (%)		n (%)		n (%)	
Medication list	QHR	BPMH	QHR	BPMH	QHR	BPMH
Patients with medication list, n (%)	196 (99%)	189 (95%)	143 (98%)	136 (93%)	339 (99%)	325 (94%)
Refusal, n (%)	NA	NA	1 (0.7%)	0 (0%)	1 (0.3%)	0 (0%)
Prescription lines						
Total number, n (%)	251 (100%)	350 (100%)	192 (100%)	246 (100%)	443 (100%)	596 (100%)
Complete lines, n (%)	233 (93%)	206 (59%)	188 (98%)	159 (65%)	421 (95%)	365 (61%)
Matched lines, n (%)	92 (37%)	92 (26%)	61 (32%)	61 (25%)	153 (34%)	153 (26%)
Average number of prescription lines per patient	1.28	1.85	1.34	1.81	1.31	1.83
As needed medications lines, n (%)	36 (14%)	51 (15%)	55 (29%)	15 (6%)	91 (20%)	66 (11%)
Natural health products lines, n (%)	8 (3%)	35 (10%)	11 (6%)	69 (28%)	19 (4%)	104 (17%)
Infant formulas lines, n (%)	12 (5%)	1 (0.3%)	0 (0%)	0 (0%)	12 (3%)	1 (0.2%)
Top five most reported medications	Salbutamol Vitamin D Amoxicillin/ clavulanic acid Lansoprazole Methylphenidate	Acetaminophen Vitamin D Salbutamol Ibuprofen Lansoprazole	Ranitidine Levothyroxine Doxylamine/ vitamin B6 Multivitamins Iron	Multivitamins Iron Ranitidine Levothyroxine Folic Acid	NA	NA

NA: Not applicable; QHR: Quebec Health Record; BPMH: Best Possible Medication History

Conclusion

This study suggests that the QHR can provide high-quality information to support the MedRec hospital process. However, it should be used as a second source to optimize the BPMH obtained from a thorough interview with the patient or his family. More studies are required to confirm the most optimal way to integrate the QHR to the MedRec process in hospitals.