Realization of medication history in the emergency department

Evaluation the impact of a hospital pharmacist on the medication history of patients admitted to emergency departments: a prospective interventional study

Rosart Laurence
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Who has already carried out medication history in the emergencies?
1. Background

• Getting a reliable and complete medication history is a real challenge in the emergency department.

• Acquiring the medication history has an impact during the patient’s stay in the emergencies and during the rest of the hospitalization.

• Discrepancy: Differences between the medication history of the physician and that of the pharmacist
1. Objective

• **Primary objective:** Compare the medication history performed by the pharmacist with the medication history conducted by the emergency physician and identify any discrepancies

• Primary outcome: Percentage of patients with at least one divergence

• Secondary Outcome: Evaluation of the clinical impact of the identification of divergences
1. Objective

• **Secondary objective:** Measurement of the completeness, exhaustiviness, availability and accessibility of its main sources of information
2. Method

- Prospective interventional study
- Mono-centric
- Grand Hôpital de Charleroi
- Emergencies of Notre-Dame and Saint-Joseph
- Organization:
  - 1 pharmacist in the last year of a complementary master in hospital pharmacy
  - Training at the Centre Hospitalier de Lunéville for 6 weeks and 6 weeks CHU UCL Namur
2. Method

- Exclusion criterion:
  - <18 years
  - Incapacity or refusal to give consent
  - Language barrier
  - No drug prior to admission
  - Presence of the patient outside the presence of the pharmacist in the emergency room
  - Gynecology, psychiatry, traumatology
2. Method

<table>
<thead>
<tr>
<th>Context</th>
<th>Population</th>
<th>Period</th>
<th>Tools</th>
<th>Process</th>
</tr>
</thead>
</table>

- January 9 to February 24, 2017
- 6 weeks of collect
- Presence of the pharmacist from 8 to 18h from Monday to Friday
2. Method

- Form to compare the pharmacist's drug history with the drug history of the emergency physician
- *Medication discrepancy tool*
- Scale: To assign the clinical impact of identification of divergences by two pharmacists and 2 emergency physicians
2. Method

<table>
<thead>
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</thead>
<tbody>
<tr>
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</tbody>
</table>

1. Patient selection according to inclusion criteria
2. Medication history of the emergency physician
3. Analysis of the patient's computerized medical record by the pharmacist
4. Patient interview by pharmacist
5. Collection of information about treatments by the pharmacist
6. Comparison with the medication history by the emergency physician
7. Meeting with the emergency physician and proposed change in case of divergence(s)
8. Update of files by the pharmacist and the emergency physician
2. Method

Context ➔ Population ➔ Period ➔ Tools ➔ Process

- **Method**
  - **Context**
  - **Population**
  - **Period**
  - **Tools**
  - **Process**

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**Process Diagram**

```
Processeur      | Analyser le dossier informatisé du patient | Réaliser interview du patient | Collecter les informations auprès des sources | Comparer l'anamnèse médicamenteuse réalisée avec celle de l'urgentiste | Encoder l'anamnèse médicamenteuse dans dossier

Pharmaciens

Determiner inclusion du patient

Oui | Non

Oui | Non

Présence de divergence?

Oui | Non

Rencontrer l'urgentiste et proposer changement(s)

Oui | Non

Mettre à jour le dossier

Oui | Non

Arrivée du patient aux urgences

Oui | Non

Réaliser anamnèse médicamenteuse

Oui | Non

Complète?

Oui | Non

Changement accepté?

Oui | Non

```

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**GHdC**

GRAND HOPITAL d CHARLERO
2. Method

- Systematic for obtaining medication history by pharmacist:
  - Analysis of the patient's previous medical record
  - Patient interview (and family)
  - Collection of informations from other sources: community pharmacy and primary care provider
2. Method

- **Discrepancies:**
  - Omission
  - Addition
  - Missing: moment, frequency, dosage
  - Different: moment, frequency, dosage
  - Confusion drug name
  - Confusion generic name and drug name
2. Method

- 2 pharmacists and 2 physicians assigned the clinical impact of identification of divergences according to the scale inspired by Hatoum scale.

<table>
<thead>
<tr>
<th>Score</th>
<th>Signification</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td><strong>No clinical impact for the patient</strong>: the intervention is either a financial or informative objective or has been proposed after the event; It is of no consequence to the patient</td>
</tr>
<tr>
<td>1</td>
<td><strong>Significant impact</strong>: the intervention increases the effectiveness of the treatment and/or the safety of the patient and/or the quality of life of the patient</td>
</tr>
<tr>
<td>2</td>
<td><strong>Very significant impact</strong>: the intervention prevents an organic dysfunction, it avoids an intensive medical supervision or an irreversible sequel</td>
</tr>
<tr>
<td>3</td>
<td><strong>Vital impact</strong>: intervention avoids potentially fatal accident</td>
</tr>
</tbody>
</table>
2. Method

- Measurement of the accessibility, availability, completeness and exhaustiveness
  - Accessibility: likely to give information
  - Availability: provides information during its consultation
  - Exhaustiveness: the list include all drugs
  - Completeness: the list include for each drug: the name, the dosage, the frequency and the moment of setting
2. Method

Exercises
Situation:

11/05/17 :
Mr Dupont
A 45-year-old man arrives at the emergency room for rectorrhagia for 1 week.

What is the first thing you do?
Sources?
# Tools

## Fiche d'anamnèse et de conciliation

|------|---------|--------------------|----------------|------------|-----------------|--------|--------|-----|-------|--------------------------|

## Bilan médicamenteux pharmacie

<table>
<thead>
<tr>
<th>Médic./forme/voie</th>
<th>Dosage</th>
<th>M</th>
<th>M</th>
<th>S</th>
<th>N</th>
<th>Commentaires</th>
</tr>
</thead>
</table>

## Bilan médicamenteux urgences

<table>
<thead>
<tr>
<th>Médic./forme/voie</th>
<th>Dosage</th>
<th>M</th>
<th>M</th>
<th>S</th>
<th>N</th>
<th>Divergence</th>
<th>DI/EM</th>
<th>PEC/NPE</th>
<th>Commentaires</th>
</tr>
</thead>
</table>

## Sources d'information consultées:

- Liste du patient
- DM antérieur
- Autre dossier
- Médicain traitant
- Pharmacien officine
- Infirmier à domicile
- MR/MRS
- Dossier Pharmaceutique
- Ordonnances du patient
- Lettre au médecin traitant
- Lettre du médecin traitant

## Allergies:

<table>
<thead>
<tr>
<th>O</th>
<th>N</th>
</tr>
</thead>
</table>

## Pilules:

<table>
<thead>
<tr>
<th>O</th>
<th>N</th>
</tr>
</thead>
</table>

## Vitamines:

<table>
<thead>
<tr>
<th>O</th>
<th>N</th>
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</thead>
</table>

## Précautions:

<table>
<thead>
<tr>
<th>O</th>
<th>N</th>
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</thead>
</table>

## Echantillon:

<table>
<thead>
<tr>
<th>O</th>
<th>N</th>
</tr>
</thead>
</table>
**Fiche d’anamnèse et de conciliation**

<table>
<thead>
<tr>
<th>Arrêts ou changements récents de traitement (antibiotique récemment?)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Effets indésirables/intolérances/interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pas d’oubli / Oubli</td>
</tr>
<tr>
<td>Si oubli : non compliance intentionnelle (pas voulu) et/ou non intentionnelle (pas pris)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assistance : pilulier, aide écrite, autres :</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficultés : Prise en charge financière</td>
<td>dextérité / vue / déficit capacités fonctionnelles / fiabilité patient</td>
</tr>
<tr>
<td>Médicaments : Difficultés à couper / avaler / croquer / écraser</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Alcool : O / N</th>
<th>Tabac : O / N</th>
<th>Sevrage : O / N</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Motifs d’hospitalisation :</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ATCD :</th>
</tr>
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<tbody>
<tr>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Divers :</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>
Medication history

Are there any discrepancies? Which?

How would you classify the impact of identification of discrepancies?
Zocor?
Paracétamol?
Collargol?
Sources

Are there enough sources?

What is the most complete source?
What is the most exhaustive source?
What is the most available source?
What is the most accessible source?
3. Results

• 163 patients included

All patients admitted to the ER from Monday to Friday (100%, n= 2797)

Patients admitted during pharmacist presence (67.93 %, n= 1900)

Patients admitted outside pharmacist presence (32.07%, n= 897)

Excluded:
- <18 years (33.05%, n = 628)
- No consent (1%, n = 19)
- Linguistic barrier (0.26%, n = 5)
- No drug (5.47%, n = 104)
- Lack of time (21.53%, n = 409)
- Ortho, psy, gynecologist (30.10%, n = 572)

Included (8.58%, n=163)
3. Results

• 98.88% of patients have at least one drug discrepancy

• The most frequent were missing moment and omission

<table>
<thead>
<tr>
<th>Types of discrepancies</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n total=163)</td>
</tr>
<tr>
<td>Missing moment</td>
<td>627 (32,63 %)</td>
</tr>
<tr>
<td>Omission</td>
<td>548 (28,78 %)</td>
</tr>
<tr>
<td>Missing frequency</td>
<td>326 (17,26 %)</td>
</tr>
<tr>
<td>Missing dosage</td>
<td>255 (13,47 %)</td>
</tr>
<tr>
<td>Addition</td>
<td>49 (2,51 %)</td>
</tr>
<tr>
<td>Different dosage</td>
<td>44 (2,25 %)</td>
</tr>
<tr>
<td>Different frequency</td>
<td>27 (1,39 %)</td>
</tr>
<tr>
<td>Confusion drug name</td>
<td>14 (0,72 %)</td>
</tr>
<tr>
<td>Different moment</td>
<td>12 (0,62 %)</td>
</tr>
<tr>
<td>Confusion generic name and drug name</td>
<td>8 (0,40 %)</td>
</tr>
</tbody>
</table>
3. Results

- The most commonly encountered ATC class is that of the digestive tract and metabolism.
- A group of physicians and pharmacists assessed that the most frequent discrepancy were score 1 (91.11%).

<table>
<thead>
<tr>
<th>Score</th>
<th>Signification</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 : no impact</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>1 : significant impact</td>
<td>91.11%</td>
</tr>
<tr>
<td>2 : very significant impact</td>
<td>8.57%</td>
</tr>
<tr>
<td>3 : vital impact</td>
<td>0%</td>
</tr>
</tbody>
</table>
3. Results

- The previous medical record and patient are 100% accessible. The patient and community pharmacy are the best source. The attending primary care provider shows the worst results.

<table>
<thead>
<tr>
<th>Sources</th>
<th>Exhaustiveness (%)</th>
<th>Completeness (%)</th>
<th>Accessibility (%)</th>
<th>Availability (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient, family</td>
<td>91,07%</td>
<td>77,46%</td>
<td>100 %</td>
<td>98,15%</td>
</tr>
<tr>
<td>Community pharmacy</td>
<td>78,06 %</td>
<td>38,45 %</td>
<td>99,25 %</td>
<td>94,48 %</td>
</tr>
<tr>
<td>Previous medical record</td>
<td>53,87 %</td>
<td>33,06 %</td>
<td>100 %</td>
<td>84,66 %</td>
</tr>
<tr>
<td>Primary care providers</td>
<td>34,94 %</td>
<td>18,97 %</td>
<td>64,44 %</td>
<td>50,30 %</td>
</tr>
</tbody>
</table>
3. Results

Have you performed clinical pharmacy interventions in department emergency?
3. Results

- Check interventions for 109 patients (67%)
- 166 interventions
- At least one intervention for 50 patients (moy: 3.32/patient – min:1 and max:17 interventions/patient)
- 72% of intervention have been accepted and implemented
3. Results

Types of intervention

<table>
<thead>
<tr>
<th>Type of Intervention</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 drug interaction</td>
<td>118</td>
</tr>
<tr>
<td>13 compliance</td>
<td>10</td>
</tr>
<tr>
<td>2a untreated indication</td>
<td>10</td>
</tr>
<tr>
<td>1a indication</td>
<td>9</td>
</tr>
<tr>
<td>10 side effect</td>
<td>4</td>
</tr>
<tr>
<td>1b redundancy</td>
<td>3</td>
</tr>
<tr>
<td>16 other: allergy</td>
<td>3</td>
</tr>
<tr>
<td>14 question</td>
<td>2</td>
</tr>
<tr>
<td>6a Cl absolute</td>
<td>2</td>
</tr>
<tr>
<td>16 other: intolerance</td>
<td>1</td>
</tr>
<tr>
<td>16 other: cessation</td>
<td>1</td>
</tr>
<tr>
<td>12 monitoring</td>
<td>1</td>
</tr>
<tr>
<td>5a voie d'administration</td>
<td>1</td>
</tr>
<tr>
<td>vide</td>
<td>1</td>
</tr>
</tbody>
</table>
4. Discussion

- Limitations:
  - Gold standard
  - Recall bias
  - Not thorough analysis of all sources
  - No follow-up on the floor

- Advantages:
  - Preventing errors
  - Evaluation of impact of identification discrepancy
4. Discussion

- Horizon:
  - Assistant to carry out the medication history?
  - “Réseau de Santé Wallon”?
5. Bibliography


5. Bibliography

5. Bibliography

Thank you for your attention and participation