Practical examples - Addressing medication safety in transitions of care at the national level

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Area = around 2 million Km$^2$
Population = 35 Million
13 regions
(2020 statistics)
Saudi Arabia healthcare

• The population of the Kingdom continues to grow and age

• The population is expected to rise from 33.5 million in mid 2018 to 39.5 million in mid 2030

• The number of elderly (aged 60 to 79) is expected to grow from 1.96 million in mid 2018 to 4.63 million in mid 2030
Saudi Arabia healthcare

- The Saudi Central Board for Accreditation of Healthcare Institutions (CBAHI) Essential Safety Requirements (ESRs) Survey of 2015 has emphasized key deficits in safety across all categories of hospitals.

- There is a need for health transformation for patient care:
  - Patient safety is one of the main pillars
  - ESRs mainly are on medications and transitions of care
Some numbers....

- Ministry of health database between, March 2018 to June 2019

- The electronic medication error database was structured based on the U.S. National Coordinating Council (NCC) for Medication Error Reporting and Prevention’s (MERP) taxonomy of errors.

- There were 71,332 medication errors

Some numbers....

<table>
<thead>
<tr>
<th>Possible Causes of Medication Error</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of policy</td>
<td>10,201</td>
<td>14.3</td>
</tr>
<tr>
<td>Inexperienced personnel</td>
<td>16,200</td>
<td>22.7</td>
</tr>
<tr>
<td>Sound-alike medication</td>
<td>963</td>
<td>1.4</td>
</tr>
<tr>
<td>Look alike medication/packaging</td>
<td>825</td>
<td>1.2</td>
</tr>
<tr>
<td>Illegible prescription</td>
<td>9072</td>
<td>12.7</td>
</tr>
<tr>
<td>Wrong labeling/instruction on dispensing envelope or bottle/container</td>
<td>1445</td>
<td>2.0</td>
</tr>
<tr>
<td>Failure to adhere to work procedure</td>
<td>10,536</td>
<td>14.8</td>
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<tr>
<td>High workload</td>
<td>22,511</td>
<td>31.6</td>
</tr>
<tr>
<td>Patient information/record unavailable/inaccurate</td>
<td>3998</td>
<td>5.6</td>
</tr>
<tr>
<td>Stock arrangement/storage problem</td>
<td>470</td>
<td>0.7</td>
</tr>
<tr>
<td>Not specified</td>
<td>7681</td>
<td>15.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Route of administration</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV/SC</td>
<td>40,328</td>
<td>56.5</td>
</tr>
<tr>
<td>Intramuscular</td>
<td>23,009</td>
<td>32.3</td>
</tr>
<tr>
<td>Intravenous</td>
<td>3204</td>
<td>4.5</td>
</tr>
<tr>
<td>Oral</td>
<td>3024</td>
<td>4.2</td>
</tr>
<tr>
<td>Subcutaneous</td>
<td>1767</td>
<td>2.5</td>
</tr>
</tbody>
</table>

**TABLE 4. Possible Causes of Medication Errors and Contributed Factors**

<table>
<thead>
<tr>
<th>Route of administration</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV/SC</td>
<td>10,024</td>
<td>14.0</td>
</tr>
<tr>
<td>Intramuscular</td>
<td>6743</td>
<td>9.4</td>
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<tr>
<td>Intravenous</td>
<td>6048</td>
<td>8.4</td>
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<tr>
<td>Oral</td>
<td>5150</td>
<td>7.2</td>
</tr>
<tr>
<td>Subcutaneous</td>
<td>4001</td>
<td>5.6</td>
</tr>
<tr>
<td>Oral</td>
<td>3941</td>
<td>5.5</td>
</tr>
<tr>
<td>Intravenous</td>
<td>2803</td>
<td>3.9</td>
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<tr>
<td>Oral</td>
<td>1146</td>
<td>1.6</td>
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<tr>
<td>Intravenous</td>
<td>834</td>
<td>1.1</td>
</tr>
<tr>
<td>Oral</td>
<td>170</td>
<td>0.239</td>
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<tr>
<td>Intravenous</td>
<td>166</td>
<td>0.232</td>
</tr>
<tr>
<td>Oral</td>
<td>92</td>
<td>0.12</td>
</tr>
<tr>
<td>Intravenous</td>
<td>76</td>
<td>0.1</td>
</tr>
<tr>
<td>Oral</td>
<td>15</td>
<td>0.02</td>
</tr>
<tr>
<td>Intravenous</td>
<td>30,123</td>
<td>42.2</td>
</tr>
</tbody>
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I, intrathecal; IV, intravenous; SC, subcutaneous.
New Models of Care

New Models of Care

• Safe Birth

• The system will support safe medication use during all medication use process for women to have a safe delivery and healthy infants

• Safety of both during transitions of care
Transitions of care

• The various points where a patient moves to, or returns from, a particular physical location or makes contact with a health care professional for the purposes of receiving health care

• When patients move across care settings, medication reconciliation is an important issue that needs to be addressed
Main agencies involved in medication safety

- Ministry of Health
- Other governmental health sector (e.g., National Guard Health Affairs)
- The Saudi Central Board for Accreditation of Healthcare Institutions (CBAHI)
- Patient Safety Centre
- Saudi FDA
Several activities have been adopted

• Engagement with patients, families and caregivers
• Patient-held medication list
• Support around discharge
• Medication reconciliation
PATIENT SAFETY ALERT
Medication Errors

DESCRIPTION:
Medication Errors represent a major problem affecting many patients. According to a study conducted in four hospitals in Riyadh, Adverse Drug Events (ADEs) occur in 8.1 (95% CI 5.4 to 6.9) per 100 admissions and 7.9 (95% CI 6.9 to 8.9) per 1000 patient-days. ADEs occur most commonly (84%) in the prescribing stage by physicians. Generally medication errors occur in the following five stages of medication use process:
- Prescribing (The most common)
- Transcription
- Dispensing
- Administration
- Monitoring

DEFINITIONS:
MEDICATION ERRORS:
A medication error is defined as any error that occurs in the medication use process (ordering, transcribing, dispensing, administering, and monitoring).

ADVERSE DRUG EVENTS (ADEs):
Adverse drug events (ADEs) are defined as injuries due to medications, which include both ADRs and injuries caused by medication errors.

ADVERSE DRUG REACTIONS (ADRs):
According to the World Health Organization ADRs is defined as ("a response to a drug which is noxious and unintended, and which occurs at doses used in man for prophylaxis, diagnosis, or therapy of disease, or for the modifications of physiological function").

The most common causes of medication errors are as follow:
- Illegible Handwriting
- Incomplete Prescriptions
- Using of Unapproved Abbreviations
- Lacking of Medication Reconciliation
- Improper use of verbal and telephone orders
- Lacking of Look Alike Sound Alike (LASA) error Preventive Strategies.
- Lacking of High Alert Medications Error Preventive Strategies.
- No effective Pharmacy & Therapeutics (P&T) Committee.

CATEGORY:
Leadership – Clinical Pharmacists, hospital and community pharmacists, Medical – Nursing – Provision of Care - IPC – Medication Management.

TARGET AUDIENCE:
Hospitals, Primary Healthcare Centers, Ambulatory Care Centers, Medical Laboratories, Community Pharmacies, Radiology and Diagnostic Imaging Centers.

RECOMMENDATIONS ACTION ITEMS
The following recommendations must be implemented in all healthcare facilities:
1. Establish a Medication Safety Program.
2. Designate a Medication Safety Officer.
3. Establish an effective Pharmacy & Therapeutics (P&T) Committee.
4. Create a "Just Culture".
5. Enhance reporting of Adverse Drug Events (ADEs) (Medication Error + Adverse Drug Reaction).
6. Implement a Look Alike & Sound Alike (LASA) and High Alert Medications Error Preventive Strategies.
7. Implement Medication Reconciliation policy.
8. Use Electronic Health Records (EHR) with Computerized Provider Order Entry (CPOE),
11. Develop a Medication Safety Course for all healthcare professionals involved in medication use process.

https://www.spsc.gov.sa/English/Pages/Patient-Safety-Alerts.aspx
Teams

Medication safety committee

Multidisciplinary team

15 members

Pharmacist, physicians, nurses, medication safety officers

Meet every two weeks to review the results of the incident reports from all hospital areas
CBAHI role

- It is mandatory now all hospitals (governmental and private) to be accredited by CBAHI

- It cover different aspects in the health institutions

- Medications have a big part of the accreditation process
CBAHI role

PC.⁴. Medication management follows local rules and regulations.

PC.⁴.¹. The HHS develops a process for medication reconciliation by the attending physician.

PC.⁴.². The HHS develops a process for the safe prescribing by the attending physician.

PC.⁴.³. Healthcare staff dispense and administer medications under aseptic conditions.

PC.⁴.⁴. Medication allergies and adverse drug reactions are documented in the patient’s medical record and adverse drug reactions are reported to local authorities.

PC.⁴.⁵. Home Visit bags are well prepared according to the list of its contents with expiry.
MM.5 The hospital has a system for the safety of high-alert medications.

MM.5.1 There is a written multidisciplinary plan for managing high-alert medications and hazardous pharmaceutical chemicals. It

   MM.5.2.6 Insulins.

   MM.5.2.7 Anesthetic medications (e.g., propofol, ketamine).

MM.5.2.8 Investigational (research) drugs, as applicable.

MM.5.2.9 Other medications as identified by the hospital.

MM.5.3 The hospital plan for managing high-alert medications and hazardous pharmaceutical chemicals is implemented. This includes, but is not limited to, the following:

MM.5.3.1 Improving access to information about high-alert medications.

MM.5.3.2 Limiting access to high-alert...
Patient medication list
ما هو نظام التتبع الإلكتروني؟

أنشأت الهيئة العامة للضمان والدواء نظام التتبع الإلكتروني لمستحضرات الصيدلانية (PMS) للمشاركة في برنامج التحول الوطني 2020 الذي يهدف لتحقيق "رؤية المملكة، عام 2030" وذلك بتبني أحدث الوسائل التقنية واستخدامها في تتبع وتغطية جميع الأدوية المصنعة داخل المملكة أو المستوردة من خارجها.

Summary

• The new health transformation is focusing on patient care and safety

• Different institutions and programs are available to ensure the medication safety in transitions of care

• The new transformation helped for more alignment between these institutions with the respect to medication safety

• More efforts are required by healthcare professional to follow up these programs and guidelines
شكرا
Thank you
Gracias
Merci
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