MEDICATION SAFETY IN RESOURCE LIMITED SETTINGS

Global Launch
Global Patient Safety Challenge on Medication Safety
2nd Global Ministerial Summit on Patient Safety 2017
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Outline

• Data from Resource Limited Settings (RLS) on 4 areas
  • Systems and Practices
  • Healthcare professionals
  • Medicines
  • Patients
• Focusing on
  • Problems identified
  • Possible interventions
• Summary of Key issues and possible solutions
LMIC in the world – 5.5 billion population (133 countries)

- LMIC – Per capita (GNI) < $12,735
The global burden of unsafe medical care: analytic modelling of observational studies


Table 3  Annual number of cases for selected adverse events

<table>
<thead>
<tr>
<th>Condition</th>
<th>High-income countries</th>
<th>Low-income and middle-income countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catheter-related UTI</td>
<td>1.4 M (0.8 M to 2.0 M)</td>
<td>4.1 M (0.5 M to 9.2 M)</td>
</tr>
<tr>
<td>Adverse drug events</td>
<td>5.8 M (2.7 M to 9.5 M)</td>
<td>6.0 M (0.6 M to 13.9 M)</td>
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<tr>
<td>Falls in the hospital</td>
<td>1.3 M (0.3 M to 2.5 M)</td>
<td>3.3 M (1.7 M to 5.7 M)</td>
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<tr>
<td>Catheter-related blood stream infection</td>
<td>0.5 M (0.1 M to 0.8 M)</td>
<td>0.9 M (0.4 M to 1.6 M)</td>
</tr>
<tr>
<td>Nosocomial pneumonia</td>
<td>1.0 M (0.7 M to 1.4 M)</td>
<td>0.9 M (0.3 M to 1.7 M)</td>
</tr>
<tr>
<td>Decubitus ulcers</td>
<td>2.9 M (0.7 M to 6.2 M)</td>
<td>4.9 M (1.1 M to 12.1 M)</td>
</tr>
<tr>
<td>Venous thromboembolisms</td>
<td>3.9 M (1.9 M to 6.3 M)</td>
<td>6.0 M (1.2 M to 12.8 M)</td>
</tr>
<tr>
<td>Total</td>
<td>16.8 M</td>
<td>25.9 M</td>
</tr>
</tbody>
</table>

M, Million
Medical error—the third leading cause of death in the US

Medical error is not included on death certificates or in rankings of cause of death. Martin Makary and Michael Daniel assess its contribution to mortality and call for better reporting.

- 180,000 iatrogenic deaths per year
- 51% - 78% are preventable

Fig 1 Most common causes of death in the United States, 2013

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Data source: http://www.cdc.gov/nchs/data/nvss/nvss64/nvss64_02.pdf
Systems and practices in RLS

Data from countries in Africa, Asia and South America

Key messages

• Serious lack of studies from RLS
• Poor safety culture
• Lack of reporting systems, learning and prevention
• Staff shortages, heavy workload for HCP
• Establishing safe patient practices needed

  • Medication errors in South East Asian countries: a systematic review. PLOS One 2015
  • A systematic review on medication errors I International J of Drug Development and Research 2015
  • Medication errors in Middle eastern countries. Eur J of Clinical Pharmacology 2013
  • Measures of patient safety in developing and emerging countries:A review literature A revi Quality and safety in healthcare 2010
Challenges

- Lack of competence on PV
- Lack of manpower
- Lack of stakeholder collaboration

Assistance needed

- Technical support
- Training
- Funding
• Many LMIC have joined the WHO’s global PV network.
• Very few have fully functional systems.
• More access to medicines in RLS - medication safety is a concern
• Burden of medicine-related harm and preventability?
• Legislation and regulatory framework needed
Healthcare professionals in RLS

Issues in prescribing

• Prescriptions legible with effort - 65 %, illegibility - 9 %.
• Potential drug interactions – in 53%
• Unapproved and error-prone abbreviations use – 69%
• Generic prescribing – 36% in private sector

Sentinel events

• Calcium prescribed as CaCO3 - Interpreted as LiCO3
• Child prescribed IV ampicillin was administered IV aminophylline
Drug dispensing indicators

- Drugs adequately labeled - 3- 24%
- Average dispensing time - 0.8- 1.2 minutes

A Sentinel event

- Patient prescribed prednisolone 30mg for asthma was dispensed glibenclamide 30 mg
  - Became severely hypoglycaemic and unconscious
- Both were white colored small tablets (LASA medicines)
Clinical Pharmacy services in RLS

- Clinical Pharmacy services are non existent in most RLS
- Comparative Interventional studies in RLS
  - Reduce drug related problems (DRP)
  - Prevalence of DRP 80-92%
  - Clinical pharmacists identified 83-86% DRP
  - 73% suggestions accepted and implemented

- The role of Pharmacists in developing countries: Current scenario in Pakistan 2009
Medicines in RLS

Counterfeit medicines
- Up to 15% of sold drugs
- In Africa and Asia may be > 50%
- FDA estimates -10% of global market
- Sentinel events
  - 1/3-1/2 Artesunate tablets in SEA had no active drugs.
  - China closed 1,300 factories after 192,000 died in 2001

Substandard medicines
- Prevalence of - 8- 48% depending on the country
- Solutions
  - WHO pre-qualification programme.
  - Suppliers, donors and purchases adhering to quality standards.
  - LMIC to improve detection methods

  - The global threat of counterfeit drugs why Industry and governments must communicate dangers. PLOS Medicine 2005
  - Substandard medicines in resource poor settings : A problem that can no longer be ignored. Tropicak Medicine and International Health 2008; 13: 1062-72
Registration status and availability of the most commonly prescribed 3 medicines in Sri Lanka -2015

- Generic prescribing – 36 % in private sector
- With several brands - more prone to errors

- Regulation difficult
- New Drug regulatory Act (NMRA Act) -2015
Low cost innovative methods to minimize errors

- Labeling and storage of LASA medicines

- Labeling for partially sighted and blind

- C Weeratatne et al International J of Pharmacy review and research 2015
Patients in RLS

• Poor knowledge on medicines – 46%
• High rates of self medication – 35%
  • Allopathic medicines self medication 8-12%
• Discharge summaries in native language improved knowledge score on medicines

Summary of key issues in RLS

1. Lack of data from large scale studies
2. Systems and practices are lacking or minimally effective
3. Ineffective medicines regulation
4. Poor reporting of errors and lack of preventive actions
5. Illegible prescriptions and error prone abbreviations
6. Poor dispensing indicators
7. Lack of Clinical pharmacy services effective in RLS
8. Substandard and counterfeit medicines
9. Large number of brands and low generic prescribing
10. Poor medication literacy, self medication and languages barriers in communication
Possible solutions

1. Performing systematic review for each country
2. Individualized action plan
3. Stringent regulatory mechanism for medicines
4. Employing clinical pharmacists into wards
5. Prevention using innovative low cost interventions
6. Educate HCP and encourage corrective actions
7. Improve medication literacy of people
8. Focus on most commonly used and high risk medicines
9. Media campaigns using electronic and print media
10. Involvement of patients/public and NGO
To Err Is Human: Building a Safer Health System

- Urgent priority for RLS

Thank you