Medication supply for people evacuated during disasters

Sae Ochi,1,2 Lidia Mayner,3 Susan Hodgson,2 Owen Landeg,4 Virginia Murray 4

1 Soma Central Hospital
2 Imperial College London MRC-PHE Center for Environments and Health
3 Flinders University Disaster Research Centre
4 Extreme Events & Health Protection, Public Health England
Why is bringing medication important?

- After emergencies:
  - Health facilities are damaged
  - Infrastructure interrupted
  → Continuity of routine healthcare is challenging.

- Disruption of care can cause:
  - Exacerbation of chronic conditions
  - Acute secondary conditions
  - Withdrawal syndrome

- Medication refill can be a burden on relief teams
After the Great East Japan Earthquake..

- Severe damage to hospitals
- Disruption of infrastructure
- High prevalence of chronic disease due to rapidly ageing population

→ Many “drug refugees”
Project Questions

• Are people being evacuated at greater risk if not prepared for their usual day to day medical care?
• Should there be initiatives such as educating people about personal medication stockpiles?
• Should evacuees bring their own medication, could this reduce health risks?
Objectives

- To identify the extent and implications of medication loss
- To identify the burden of prescription refill
- To make recommendations on effective preparedness
Methods

Systematic literature review

• Databases
  ▫ Medline, Embase, PsycINFO, Maternity and Infant Care, HMIC

• Search Terms (Table)

• Period: Jan 2003-Sep 2013

• Inclusion criteria
  (i) evacuees’ actions of bringing prescription medications
  (ii) burden of prescription refills within relief activities
  (iii) disruption of medications.

• Exclusion criteria
  (i) abstracts for conferences or dissertations
  (ii) chapters of books
  (iii) articles written in a language other than English

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<thead>
<tr>
<th>Search Terms (MeSH terms)</th>
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<tr>
<td>Disasters</td>
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<td>Disaster medicine</td>
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<td>Disaster planning</td>
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<td>Emergencies</td>
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<td>Chronic disease</td>
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<td>Community-based participatory research</td>
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<td>“Delivery of health care”</td>
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<td>Drug prescriptions</td>
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<td>“Health services needs and demand”</td>
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<td>Health services accessibility</td>
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<td>Needs assessment</td>
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<td>“Patient acceptance of health care”</td>
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<td>Patient compliance</td>
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<td>Pharmaceutical preparations</td>
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Search Strategy

Records identified through database (n = 5,382)

- Records after duplicates removed (n = 3,730)
- Records screened by title (n = 3,730)
- Records assessed by abstracts for eligibility (n = 811)
- Included by Secondary screening (n = 66)

- Articles included in qualitative synthesis (n = 70)
- Abstracts excluded, for not filling inclusion criteria (n = 513)
- Full-text articles excluded, for not filling inclusion criteria (n = 294)

- Full-text articles assessed for eligibility (n = 364)
- Included by Secondary screening (n = 66)

- Records apparently irrelevant and excluded for filling exclusion criteria (n = 2,919)
Result 1. Medication loss (29 articles)

- 32\(^1\)-48.4\(^2\)\% of the patients evacuated without prescription medications.
- Some brought only 3 days of prescriptions.
- Specific condition types studied included:
  - Diabetes
  - Hypertension
  - HIV infection
  - Dialysis (hemodialysis, peritoneal dialysis)
  - Home oxygen therapy (HOT)

Result 2. Burden of prescription refill (22 articles)

- 44% of evacuees\(^1\) and 80% of patients\(^2\) at shelters required prescription refill
- Prescription refill was the 4th most common health and health-related issue\(^3\)
- Prescriptions included:
  - Dentures
  - Spectacles
  - Pain relief

Result 3. Medication is not limited to pills

- **Routine medications**
- **Medical records**
  - List of medications
  - Medication logs (e.g. chemotherapy)
  - Laboratory data (e.g. Tuberculosis test results)
  - Allergy information
- **Devices for specific care**
  - Devices for insulin delivery (e.g. needles, glucose-sensor)
  - CPAP machines
  - Power generator / automobile with inverter
  - Oxygen cylinders/concentrators
  - Canned nutritional supplements for the tube feedings
- **Devices for daily life**
  - Spectacles
  - Hearing aids
  - Canes, Walkers, Wheel chairs
  - Dentures
- **Emergency medications e.g. potassium-binding resin**
- **Others**
  - Personal identifier for those who cannot speak
  - Medication opening devices for those with hand disabilities
Possible Solutions

▲ Just having a personal stockpile did not affect the probability of medication loss\(^1\)

○ Bring the personal stockpile at all times
  - Make an emergency pack\(^2\)
  - Pack full range of medications and medical devices

Other possible solutions

For patients to understand the impact of medication loss
Help patients make a personalised emergency kit

Recommendation

Every community member has a role in preventing medication loss

- **Health Professionals**
  - Education
  - Individualised emergency plan
  - Medication lists & personal stockpiles

- **Patients**
  - Bring medication

- **Policy makers**
  - Community emergency plan
  - Insurance system

- **Researchers**
  - Evidence
Actions to spread our findings & recommendation

What we have done

• Quoted our poster in the Evidence Aid message for the Philippines.¹
• Sent our paper to the UK Cabinet Office and the Civil Contingencies Secretariat as well as the UK Emergency Planning College.
• Spread our paper by mailing list for Japanese pharmacists
• Present it at academic conferences
• Send the paper to key persons of disaster risk reduction: e.g. WHO/CDC and other public health staff

Planning to..

• Spread it by mail magazines

¹ http://www.evidenceaid.org/resources-following-typhoon-haiyan-in-the-philippines/
Further research required

- Assessment of health impact of medication loss
- Evaluation of programmes for preparedness
- Surveillance on who were the most vulnerable with regard to medication loss
Conclusion

- Bringing medication is the major key to:
  - Continuity of care
  - Emergency risk reduction for health
- Older people are the most vulnerable and at higher risk
- Preparedness actions include:
  - Having a personal stockpile
  - Making an emergency kit
  - Personally keeping a list of a full range of items
  - Periodically reviewing emergency plans
- All stakeholders should be involved