Partners in Prevention: Linking Police, Ambulance and Health data to Understand and Enhance First Responses to Suicide Crisis Situations

Carla Meurk, PhD

Carla.Meurk@health.qld.gov.au
Overview

1. Background and Context to Partners in Prevention

2. PiP Data Linkage Study and Approach

3. Challenges and Learnings

4. Initial Findings
1. Background and Context

Partners in Prevention arises from within a services context

- Police Communications Centre – Mental Health Liaison, est. 2015
- After hours consultation-liaison service within Brisbane Police Communications Centre
1. Background and Context

Information sharing and referrals for people in mental health crisis who come in contact with police

- Enabled by MOU
- Majority of calls (59%) relate to suicide crises
  - Evaluation highlighted key knowledge gaps regarding individuals in crisis
Partners in Prevention: Understanding and Enhancing First Responses to Suicide Crisis Situations
1. Background and Context

*Partners in Prevention* addresses knowledge gaps in first response and translates findings into service delivery enhancements.
2. Partners in Prevention Data Linkage Study

**Cohort**
- Persons experiencing a suicide crisis who are the subject of a suicide related call to emergency services (police or ambulance)
- 1 February, 2014 – 31 January, 2017

**Questions**
1. What are the demographic and mental health characteristics of individuals?
2. What demand do these individuals place on emergency services?
3. Who had they seen before a call to emergency services?
4. Where do they go after a call to emergency services?
5. What are their outcomes?

**Variables**
- Demographic and health characteristics
- Health services use before and after a suicide related call to emergency services
- 1 February, 2013 – 31 January, 2018
2. PiP Approach: Three Key Elements

- Modular
- Multi-purpose
- Continuous improvement
<table>
<thead>
<tr>
<th>Stage</th>
<th>Linkage Unit</th>
<th>Datasets</th>
<th>Custodians</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1: Call and Case Identification</td>
<td>QAS, QPS</td>
<td>QCAD/QPRIME, CAD/eARF</td>
<td>QPS, QAS</td>
</tr>
<tr>
<td>Stage 2: Queensland Data Linkage</td>
<td>Statistical Services Branch</td>
<td>QHAPDC</td>
<td>SSB</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Qld Deaths</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PDC</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>EDIS</td>
<td>HAAT</td>
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<tr>
<td></td>
<td></td>
<td>MHAODB</td>
<td></td>
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<td></td>
<td></td>
<td>CIMHA/ATODS-IS</td>
<td>MHAODB</td>
</tr>
<tr>
<td>Stage 3: Commonwealth Data Linkage</td>
<td>AIHW</td>
<td>MBS, PBS</td>
<td>AIHW</td>
</tr>
<tr>
<td>Stage 4: Outcomes</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
Modular approach helps to:

• reduce risk
• enhance timely delivery of findings, given short time frames
• enables future expansion, longitudinally and cross-sectionally
  – e.g., Criminal Justice, Social Services etc.,
Multi-purpose

Study design will enable multiple questions and analyses:

• A call to emergency services defines our cohort, and can be considered both an *intervention* and an *outcome*

• Can conceive of dataset as cross-sectional, retrospective, prospective, time series etc.,
  –provides benchmarks for subsequent interventions and evaluation
Continuous quality improvement:

- “Suicide crisis” is a tricky concept to define and ascertain
- Solution to consider findings ‘current best estimate’
  – work systematically and iteratively refine cohort and improve estimates
  – Machine Learning
- Initial aim to minimise false positives
  – Identify a foundational cohort (i.e., those who meet criteria)
  – Initial findings will underestimate demand
3. Challenges and Learnings

- Organisational complexity
- Governance
- Cohort identification
- Time
Organisational complexity

- Organisational entities involved in compiling dataset: 6
- Individuals involved in PiP: ~50
- Ethics + governance processes: 4
Organisational complexity

Primary role in establishing PiP dataset is project management and support to coordinate:

- Ethical clearances, PHA, and governance documentation is completed, including lodging of amendments
- QAS and QPS data scientists to identify cohort
- Facilitate transfer of data between entities, in sequence
- Communication is key, centred around single point of contact
Governance

Four processes:
• Queensland Health
• Queensland Ambulance Service
• Public Health Act, Application
• Queensland Police Service

• Key complexity is inter-organisational (between QH and QPS)
Governance

Logistic and legal implications for transfer of data:

• PiP is first study in which QPS data provide basis of cohort
  – Identifying data particularly sensitive
  – Direction of transfer matters

• Facilitated by MOU between QH and QPS, governing mental health information
  – Further agreements under consideration
Cohort identification

- Cohort identified from police and ambulance records
  - Either dispatch codes (categorical variable) or through keywords or phrases in open text fields
  - Use of text analytics to identify cohort
- One useful property of texts is that suicide risk is usually multiply designated (60/30/10 split)
- Text analytics also required to extract identifiers from police datasets
Time

• Time constraints arise from funding model (non-recurrent)
  – Although plans for this to be self-sustaining

• Linear (rather than parallel) process
  – Plan for each step to involve delays
Early Findings – Suicide related calls

111 calls per day to QAS  89 calls per day to QPS  200 calls per day combined

157 events per day  114 single response  43 dual response

→ Current best estimate
→ Expect N. identified individuals to be a proportion of N. calls
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