



Metro North Hospital and Health Service *Putting people first*

Queensland Forensic Mental Health Service and Queensland Centre for Mental Health Research

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

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# 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

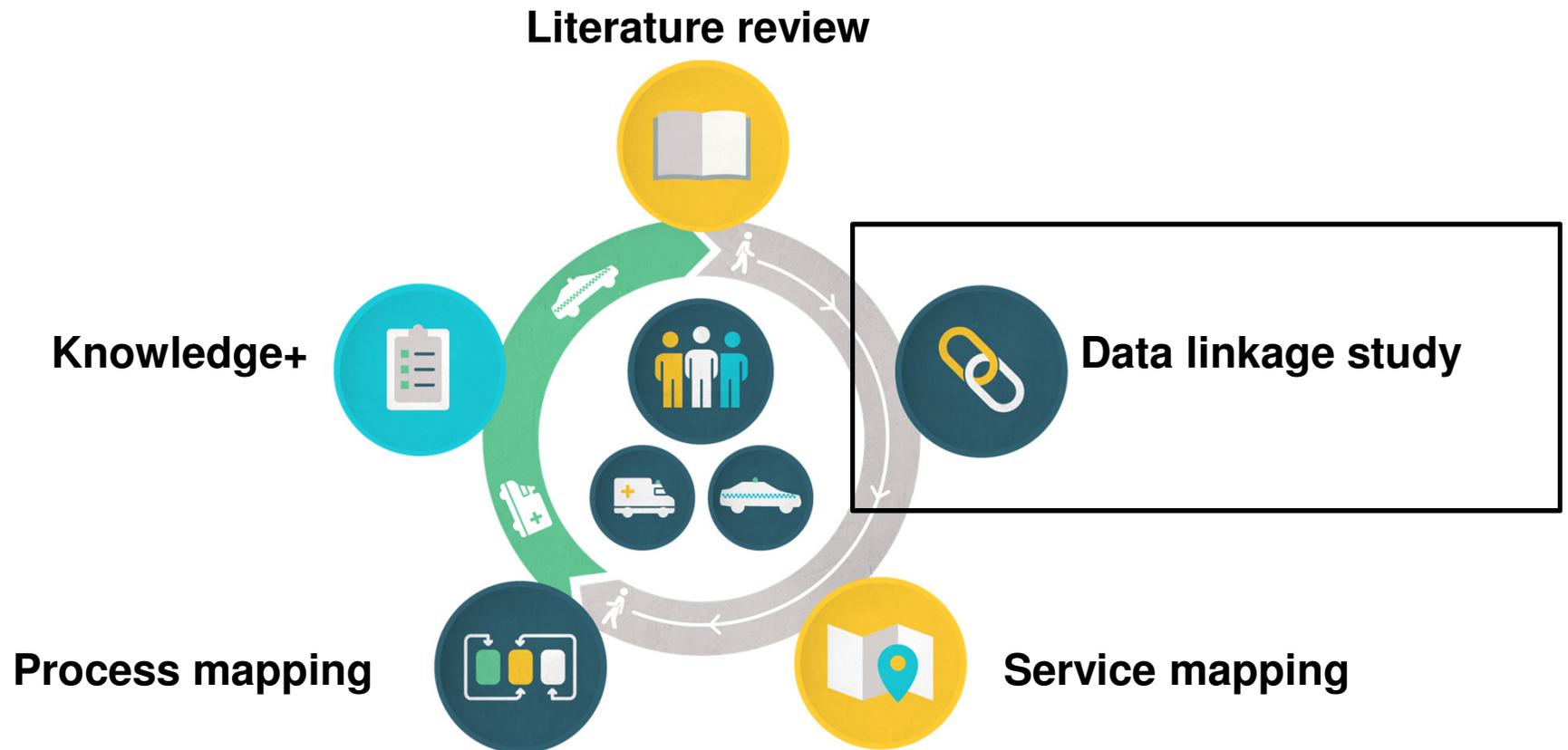


# Partners in Prevention: Understanding and Enhancing First Responses to Suicide Crisis Situations



# 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

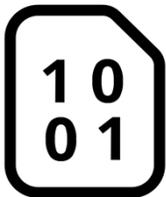


### Cohort

- 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

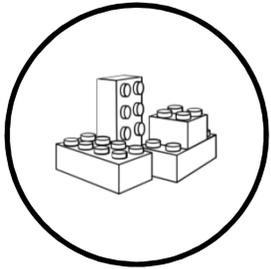
1. What are the demographic and mental health characteristics of individuals?
2. What demand do these individuals place on emergency services?
3. Who had they seen before a call to emergency services?
4. Where do they go after a call to emergency services?
5. What are their outcomes?



### 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



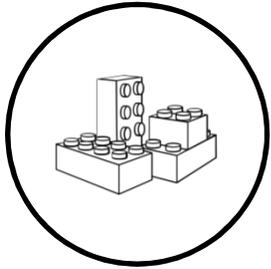
Modular



Multi-purpose



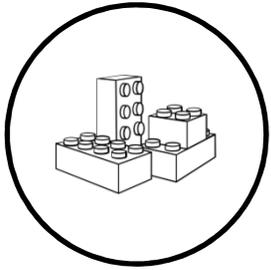
Continuous improvement



# Modular

Stage	Linkage Unit	Datasets	Custodians
Stage 1: Call and Case Identification	QAS, QPS	QCAD/QPRIME, CAD/eARF	QPS, QAS →
Stage 2: Queensland Data Linkage	Statistical Services Branch	QHAPDC	SSB →
		Qld Deaths	
		PDC	
	MHAODB	EDIS	HAAT
	MHAODB	CIMHA/ATODS-IS	MHAODB
Stage 3: Commonwealth Data Linkage	AIHW	MBS, PBS	AIHW →
Stage 4: Outcomes			→

↓



## Modular

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

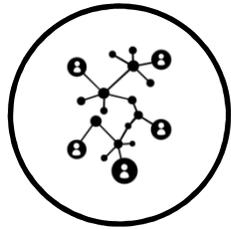


## Continuous improvement

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

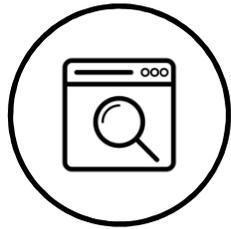
### 3. Challenges and Learnings



Organisational complexity



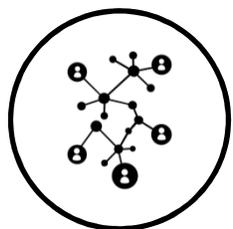
Governance



Cohort identification



Time



# Organisational complexity

6

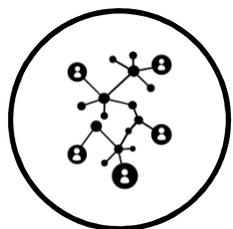
Organisational entities involved in compiling dataset

~50

Individuals involved in PiP

4

Ethics + governance processes



## 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:

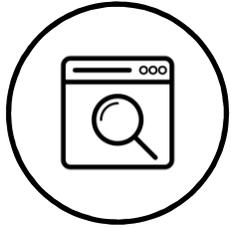
- Queensland Health
  - Queensland Ambulance Service
  - Public Health Act, Application
  - Queensland Police Service
- Queensland Health
- Key complexity is inter-organisational (between QH and QPS)



## 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

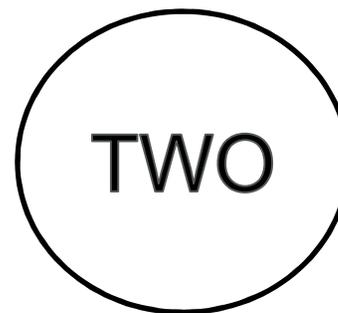
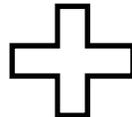
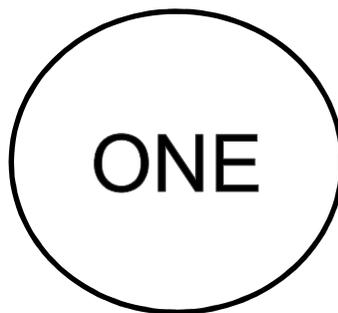
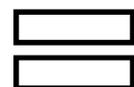
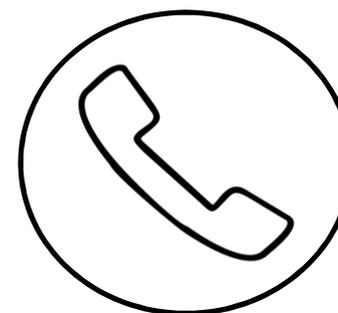
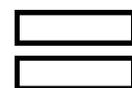
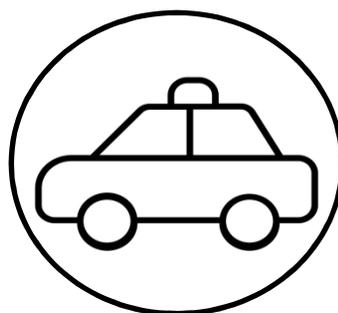
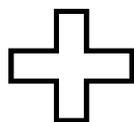
- Time constraints arise from funding model (non-recurrent)
  - Although plans for this to be self-sustaining
- Linear (rather than parallel) process
  - Plan for each step to involve delays

# 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

# Acknowledgements

- QPS, QAS and Statistical Services Branch analysts
- Suicide Prevention Health Taskforce
- Project Steering Group and Working Group members
- Queensland Centre for Mental Health Research