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Barriers and enablers to implementing police mental health co-responder programs: A qualitative study using the consolidated framework for implementation research

O. J. Fisher[1,2,3], C. Donahoo[2], E. Bosley[2], R. du Cloux[4], S. Garner[5], S. Powell[6], J. Pickard[4], N. Grevis-James[4] and M. Wyder[6]

Abstract

Background

Police and mental health co-responder programs operate internationally and can be effective in providing timely and appropriate assessment, brief intervention, and referral services for people experiencing mental health crises. However, these models vary greatly, and little is known about how the design and implementation of these programs impacts their effectiveness.

Method

This study was a qualitative, post hoc implementation determinant evaluation of mental health co-responder units in Brisbane, Australia, comprising of verbal or written interviews with police and mental health staff with an on-road role in the co-responder units, and their managers. The Consolidated Framework for Implementation Research was used to identify barriers and enablers to the program's implementation and effectiveness.

Results

Participants ($n = 30$) from all groups felt strongly that the co-responder units are a substantial improvement over the usual police management of mental health crisis cases, and lead to better outcomes for consumers and the service. Enablers included an information-sharing agreement; the Mental Health Co-Responder (MHCORE) program's compatibility with existing police and mental health services; and the learning opportunity for both organizations. Barriers included cultural differences between the organizations, particularly risk-aversion to suicidality for police and a focus on least-restrictive practices for health; extensive documentation requirements for health; and a lack of specific mental health training for police.

Conclusions

Using an evidence-based implementation science framework enabled identification of a broad range of contextual barriers and enablers to implementation of police mental health co-responder programs. Adapting the program to address these barriers and enablers during the planning, implementation, monitoring, and evaluation phases

[1]Health Services Research, Wesley Research Institute, Brisbane, Australia
[2]Implementation Support, Research and Evaluation Unit, Office of the Medical Director, Queensland Ambulance Service, Brisbane, Australia
[3]Faculty of Health, Charles Darwin University, Brisbane, Australia
[4]State Domestic, Family Violence and Vulnerable Persons Unit, Domestic Family Violence and Vulnerable Persons Command, Queensland Police Service, Brisbane, Australia
[5]Office of the Medical Director, Queensland Ambulance Service, Brisbane, Australia
[6]Addiction and Mental Health Service, Metro South Health, Queensland Health, Brisbane, Australia

Corresponding author:
Olivia J. Fisher, Health Services Research, Wesley Research Institute, PO Box 499, Toowong, Queensland 4066, Australia
Email: Olivia.Fisher@wesleyresearch.org.au

increases the likelihood of the service's effectiveness. These findings will inform the spread and scale of the co-responder program across Queensland, and will be relevant to police districts internationally considering implementing a co-responder program.

Plain Language Summary: A large and rising proportion of calls to police relate to mental health crises, however police lack the resources, knowledge, training and supports to effectively address these crises. In Brisbane, Australia people in mental health crisis who are attended by police are routinely transported under an Emergency Examination Authority to a hospital emergency department. This is time-consuming for both the consumer and police, may be stressful or distressing for the consumer, and can put pressure on emergency departments. Co-responder programs team a senior mental health clinician with a senior police officer. There is evidence that a qualified and experienced mental health clinician providing people in mental health crisis with a timely assessment and brief intervention in the field, and where appropriate, referral to support services, leads to better outcomes for the consumer, reduced hospital transport, reduced time per case, and reduced overall service costs. Although many papers have been written evaluating the outcomes of these programs, few have considered factors that impact the implementation, effectiveness, and sustainment of co-responder teams. We used an implementation science approach based on the Consolidated Framework for Implementation Research to identify barriers to and enablers of mental health co-responder program implementation within an Australian metropolitan setting. Understanding these barriers and enablers allows a more streamlined, better-informed roll-out of future programs, and adaptation of existing models to improve effectiveness. The results will be relevant for any police district considering implementing a mental health co-responder program. They will also be used to inform the ongoing program.

Keywords
mental health, implementation science, police, first responder, co-responder, street triage, emergency services

Introduction

In recent years, the rate of mental health crisis calls to Triple Zero, Australia's national emergency services phone line, has risen substantially and this has placed growing pressure on emergency services including police and ambulance services and emergency departments (Mental Health Select Committee, 2022). Police lack the specialist training to make mental health assessments, and people experiencing a mental health crisis are routinely transported to an emergency department for assessment. Effective and efficient approaches to management of people experiencing a mental health crisis are essential to minimize the impact on emergency services, while providing least-restrictive pathways of care for health consumers. Mental health co-responder units, which provide a timely and clinically appropriate response in the field, can result in service improvements such as hospital avoidance, reduced time per case, and improve the experience for people in mental health crisis who are attended by police (Kane et al., 2017; Meehan et al., 2019; Puntis et al., 2018). The recent Queensland Parliament Mental Health Inquiry Report (Mental Health Select Committee, 2022) recommended expansion of the police and ambulance co-responder programs across Queensland. However, little is currently known about barriers and enablers to implementation and maintenance of these co-responder programs, and how they influence these programs' effectiveness. It is therefore both timely and important to evaluate implementation determinants of police mental health co-responder units to inform the program's spread and scale.

Between 2016 and 2021, mental health-related calls to police have risen from 32,040 to 50,755 per year (Queensland Police Service, 2022). In 2021, an average of 3.13 h of officer time per call was spent responding to mental health-related calls for service. This does not include officer time spent on case management and collaboration with other partner agencies to improve mental health responses (Queensland Police Service, 2022). This rising demand, coupled with the need to respond effectively and safely to people experiencing a mental health crisis, require collaborative approaches with health partners, contextually tailored to meet local needs and legislative requirements. Multiple models have been developed to enhance police responses to people experiencing mental health crisis (Kane et al., 2017, 2018). Such models include co-responder or street triage approaches where police and mental health professionals attend mental health calls for service as a joint response; crisis intervention teams where police officers with specialist training respond to calls for people experiencing mental health crisis (Compton et al., 2008); phone support models such as mental health liaison clinicians situated in police communications who provide information and advice on management of individual cases (Kane et al., 2017, 2018); and liaison and diversion models where teams of mental health

staff provide assessment and referral services via police stations or courts (Kane et al., 2017, 2018; Pakes and Winstone, 2010).

Evaluations of these models have focused on reductions in arrest and restraint (Kane et al., 2017; Puntis et al., 2018), reductions in psychiatric hospitalizations (Puntis et al., 2018), officer outcomes such as increased knowledge (Compton et al., 2008; Puntis et al., 2018), and improved experience for people experiencing a mental health crisis who are attended by police (Kane et al., 2017; Puntis et al., 2018). Reporting of mental health co-responder evaluation has been inconsistent and Puntis et al. (2018) recommended a set of criteria that should be included when describing a co-responder model. However, it is not only the characteristics of an innovation that influence its effectiveness in practice. The impact of contextual characteristics and implementation process must be taken into consideration to fully understand its effectiveness. This paper aims to address this evidence-to-practice gap (Westerlund, Nilsen and Sundberg, 2019) by using the Consolidated Framework for Implementation Research (CFIR), an evidence-based implementation science framework (Damschroder et al., 2009; Kirk et al., 2016), to identify implementation determinants of police mental health co-responder programs.

Implementation science theories, models, and frameworks play a critical role in designing, implementing, and evaluation health service initiatives by improving decision-making, enhancing generalizability, and improving outcomes (Holtrop et al., 2021). Of the few papers that have investigated the implementation of police mental health co-responder programs, to the authors' knowledge no previous studies have used an implementation science model or framework.

Bailey et al. (2018) assessed barriers and facilitators to implementing an urban tri-agency (police, ambulance, and mental health) co-responder pilot. Coding was conducted using a grounded theory approach. Barriers identified were a lack of clear policies and procedures, lack of coordination with external agencies, lack of local treatment facilities, and difficulties transitioning into the co-responder team roles for some team members. Facilitators identified were multiagency collaboration, information sharing between agencies about consumers, and team building. Horspool, Drabble and O'Cathain (2016) developed an inductive framework of themes related to implementation of a co-responder service. Two key barriers were identified: short-term pressures related to competing staffing responsibilities, and increased service demand. The co-responder program was found to increase the collaboration between mental health services and police, thus enabling further collaboration outside of the program's hours of operation.

Kirst et al. (2015) evaluated implementation and service delivery of a police mental health co-responder program in an urban Canadian area. They identified collaboration between team members during calls, and interorganizational partnerships were reported as enablers. Barriers or challenges included: differences in organizational cultures; lack of awareness of and clarity around the role of the co-responder units; a need for training about the roles and professional cultures of each team member; improvements to the transfer process for consumers taken to emergency departments; and a lack of coordination within the mental health system.

Kane and Evans (2018) and Kubiak et al. (2017) investigated implementation of police mental health interventions other than co-responder models. Although Kane and Evans included co-responder programs as one of many interventions they considered, the findings were not specific to co-responder models. Overall, the interventions described in these studies were found to increase knowledge and skills. Kubiak et al. described positive changes to police officers' perceptions of mental illness. Resource constraints and police culture were reported by Kane and Evans as barriers to implementing police mental health interventions. The differences in the barriers and enablers identified in these studies highlight the importance of understanding the local context. Each of these previous studies used an inductive approach to understanding influences on the program's success, with no a priori framework.

Context and Setting

The Metro South police mental health co-responder model is a collaboration between Queensland Police Service and Metro South Addiction and Mental Health Service, Queensland Health. The service covers the region south of the Brisbane River in Brisbane, Queensland, Australia. In 2017 the Mental Health Collaboration Memorandum of Understanding (State of Queensland, 2017) was signed between Queensland Health and Queensland Police Service to enable disclosure of relevant information during a mental health incident. This provides co-responder teams with capacity to make an informed decision about the selection and management of individual cases based on relevant mental health and justice records.

The Queensland Public Health Act (State of Queensland, 2005) allows for a police or ambulance officer to detain and transport a person to a place of treatment or care, usually a public hospital emergency department, under an emergency examination authority (EEA) when: the person is demonstrating behaviors which indicates the person is at immediate risk of serious harm, as the result of a major disturbance in the person's mental capacity, caused by illness, disability, injury, intoxication or another reason which requires urgent examination, treatment or care. Metro South Health is the major provider of public healthcare services, health education, and research, in the Brisbane South, Logan, Redlands, and Scenic Rim regions. The Hospital and Health Service covers an

estimated population of 1.2 million people, 23% of Queensland's population, and employs more than 14,000 full-time equivalent staff. Metro South Addiction and Mental Health Service offers community, inpatient, and acute care services in hospitals, community facilities, in general practices and in the home. Services are provided across a range of specialist programs for all age groups across the lifespan, including child and youth, adult, and older persons.

Aim

To understand contextual barriers and enablers to implementation, adaptation, and maintenance of police mental health co-responder programs in the South Brisbane region.

Method

Design

The intention of this qualitative service evaluation was both to understand, retrospectively, the barriers and enablers to implementation and sustainment of the police mental health co-responder program, and also to inform the ongoing operation of the model, along with potential scale and spread to other regions across Queensland. The reporting of this study aligns with the relevant Enhancing the QUAlity and Transparency Of health Research (EQUATOR) Standard: the Standards for Reporting Implementation Studies (StaRI) Standard (BMJ, 2017), as well as Puntis et al.'s (2018) reporting framework for reporting on co-responder programs.

Research Questions

1. What are the barriers and enablers to implementation and sustainment of a police mental health co-responder program in the Brisbane South region?
2. Are there differences in perceptions of these barriers and enablers between participant groups (police, mental health clinicians, managers of police, managers of mental health clinicians)?

The Intervention

Metro South Mental Health Co-responder Program units operate from three districts: South Brisbane, Logan, and West Moreton. A team operates from each region between 2 p.m. and 12 p.m., 7 days a week, with two hours at the end of each day, between 10 p.m. and 12 a.m., for the clinicians to complete mandatory documentation. The models were locally co-designed by the police and mental health services, and staffing is allocated in-kind from existing allocations by the health and police partners.

The units use a ride-along, second-response model. A senior mental health clinician employed by the mental health service is teamed with a police officer in an unmarked police vehicle. First response police units ensure safety and suitability for the co-responder team. The police officer in the co-responder unit has access to the police Computer Aided Dispatch program, and the mental health clinician has access to the Consumer Integrated Mental Health and Addiction application, the public mental health system's statewide electronic patient record database. Most often the team was able to self-attach to cases after reviewing the case information and mental health records to determine suitability. Other officers also frequently request the co-responder team attend cases. The mental health clinician holds responsibility for management of mental health issues, and the police officers have responsibility for the physical safety of the environment, public, and the clinician. Governance over the mental health clinician and the consumers attended by the co-responder teams is the responsibility of the mental health service's Access Services Team.

The intended recipients of the co-responder program are people experiencing a mental health crisis. Priority is given to cases where the mental health clinician deems there is potential for hospital diversion. Exclusion criteria are people who require immediate medical attention (referred to acute paramedic crew), and people who are severely intoxicated. The clinicians are funded by Queensland Health and police officers are provided on a rotational basis from the local stations' existing staff allocation.

Implementation Science Approach

The CFIR has been widely used for evaluating implementation determinants of health programs (Damschroder et al., 2009; Kirk et al., 2016). CFIR was derived from multiple theories and approaches to implementation of health care innovation (Damschroder et al., 2009), and can be used to guide design, implementation, and evaluation of health service initiatives. In this study, CFIR was used as a post hoc determinant framework to evaluate enablers and barriers to implementation of mental health co-responder units across the region. The outcomes of interest were derived from the CFIR framework and where necessary, constructs from other theories and frameworks that were not present in CFIR were included, and these have been noted.

Ethical Considerations

Ethical approval was obtained from the Metro South Research Ethics Committee, Approval Number HREC/2020/QMS/59577. Consent to participate was obtained in writing prior to each interview. Interviews were conducted

by a person with no line-management or supervisory relationship with any of the participants.

Scope

Although the mental health clinicians interviewed for this study worked for both the police and ambulance co-responder programs, the scope of this study was only to analyze the police program, therefore comments about their work in the ambulance program were not included in this analysis. The program was developed locally and adapted over time therefore fidelity has not been measured.

Participants

All staff with a role in the police mental health co-responder program were invited via email to participate. A purposeful sampling strategy was used. The sample size was necessarily limited due to the small group of eligible participants. Responses from all eligible participants were sought. Eligible participants fell into four groups, all of whom had a direct role in the mental health co-responder program:

1. Mental health clinicians working on co-responder teams
2. Line managers of the mental health clinicians on co-responder teams
3. Police officers working on co-responder teams
4. Station Officers in Charge (OIC) who manage and roster the police officers on co-responder teams

Interviews

Interviews were conducted in 2021. The semi-structured interviews were based on an interview guide developed by the research team (Supplementary File A) which examined barriers and enablers to the co-responder program. The interview questions focused on: understanding how the model operates in real-world practice; challenges for police responding to mental health cases; integration of police, ambulance and mental health responses to people experiencing a mental health crisis, and suggested improvements. Although the interview guide itself was not based on CFIR, the framework was highly applicable for this post hoc analysis. Mental health clinicians and managers of these clinicians were interviewed by M. Wyder. The audio from these interviews was transcribed by an administration officer and checked against the audio by O. J. Fisher. One transcript was not able to be checked against the original audio therefore content from this interview was reviewed to confirm themes and codes, but no quotes from this transcript have been presented because the accuracy of quotes from this transcript cannot be confirmed.

Interviews of police and their officers in charge were conducted internally by R. du Cloux, J. Pickard, and N. Grevis-James according to the interview guide. Police participants were given the option to respond in writing to the interview guide questions if they preferred this to attending an interview. These written records have also been included in the analysis. Police interviews were transcribed and checked internally by the police service.

Analysis

Post hoc qualitative analysis was conducted using a Framework Analysis approach (Ramanadhan et al., 2021) which involved a combined inductive and deductive coding strategy commonly used in implementation science research (QualRIS, 2019). The CFIR Codebook Template (CFIR Research Team, 2022) was used as an a priori framework for analysis and rating of constructs, and other inductive codes were derived from the transcripts. Text was coded if it related to one or more CFIR Constructs, and was within scope of the project, i.e., it related to the police mental health co-responder program. Each barrier/enabler was rated between −2 (strong barrier) and +2 (strong enabler) based on both the level of consensus between participants as well as the participants' reported perception of the strength of the barrier/enabler. Analysis was conducted using NVivo software. O. J. Fisher, a health systems and implementation science researcher with experience coding to the CFIR framework, coded all transcripts in consultation with C. Donahoo and M. Wyder. Only text which identified barriers or enablers to the mental health co-responder program was coded. Two coders, O. J. Fisher and C. Donahoo, double coded the first three transcripts. Line-by-line cross-checking was conducted between coders, and consensus reached through discussion between the coders. New codes not present in CFIR were discussed as they were identified. M. Wyder, an experienced qualitative researcher who conducted the clinician interviews, and C. Donahoo, a research assistant who had reviewed the interview transcripts, contributed to interpretation and development of findings. After coding was completed, O. J. Fisher, and C. Donahoo and M. Wyder used the coded data to develop the overall findings. Any differences in responses between police and mental health subgroups were noted.

Results

Participants

All six mental health clinicians and two managers of clinicians who were working on the police co-responder program at the time of the study participated in an interview. Fifteen police officers and seven Station OICs participated. It was not possible to identify how many police officers had worked on co-responder units, therefore it

Table 1
Barriers to and Enablers of Implementation and Sustainment of the Police Mental Health Co-Responder Service

Domain	CFIR construct	Topic	Subtopic	Rating	Description	Example quote
Outer setting	External policies and incentives	Legislation		e−1	Limitations on role due to legislation under which QPS and QH operate.	"The family can find it really useful also when you can describe to them, you can give them some psychoeducation as a family, who often don't get it at all." Clinician 6
		Overflow for other services		−2	External organizations (NGOs, community mental health) do not operate 24 h therefore police become default after hours providers. Police are often the first available resource to emergency mental health cases, even when other first responders, such as paramedics, may be more appropriate.	"What I have found in my experience is that typically police officers will, as soon as a person says 'I've had enough, I want to commit suicide' or 'I'm thinking of self-harming,' they generally default straight to we're going to the hospital, ok, without even exploring the circumstances of that comment, whether it's situational to an event that's occurring or whether it's an emotional response, or otherwise, or whether there is some typical mental health aspect to it. But the general default is that they will go to the [hospital] for an EEA." Police OIC 12
	Needs and resources of those served by the organization	Carers and Families		+1	MHCORE teams often find they need to support family and carers as well as the consumer. This creates additional complexity but also opportunity. Being in the home environment enables the clinician to proactively recommend tailored coping strategies and supports for the entire household.	
		Consumers attended by MHCORE team	Better experience for consumers	+2	There was strong agreement from all participant groups that MHCORE provides a better experience for consumers than usual practice. Participants reported that consumers appear more comfortable and willing to engage, and they receive a more accurate assessment in their own environment.	"They have somebody there and then who's listening to them… someone saying… this is what we are going to do for you, this what we suggest, this is the referral, we've spent an hour talking, you've actually got some strategies yourself. It's more about treating the consumer in their home at the actual time of the crisis, instead of having to transport them somewhere to be seen in four or five hours. You're in crisis, we're here." Manager (Clinician) 1
	Cosmopolitanism	Good working relationship and networks between emergency organizations		+1	Many participants described strong working relationships between emergency services organizations (QPS, QAS, hospital emergency departments, mental health). The relationship between the police officers and mental health clinicians on the MHCORE teams was described as particularly strong. However, difficulties in these relationships and networks were also noted (see key stakeholders – tension between organizations).	"I think it's… improving, we're now creating better networks between those agencies to address things, we're having regular meetings, addressing issues, coming up with new ideas as well across agencies, which I think is a really positive thing." Police 16
	(Not in CFIR)	Gaps in referral options and external services		−2	Participants described substantial barriers related to referral options for consumers. Existing organizations, including mental health services, nongovernment organizations and private providers, have lengthy waiting lists and limited capacity for new referrals. In particular, a gap exists for people who present frequently to emergency services in a state of crisis, but do not fit the criteria of existing agencies.	"I would probably say the gap would be, as has been identified previously, funding to support people in acute crisis. Most are funded to support sub-acute or step down from crisis." Manager (Clinician) 1

(Continued)

Table 1
(Continued)

Domain	CFIR construct	Topic	Subtopic	Rating	Description	Example quote
Inner setting	Culture	Risk averse		−2	Both the police and mental health service were described as having risk averse cultures, which plays out in different ways in practice. Police were described as being very "black and white" in their decision-making processes, whereas clinicians described a more nuanced process of assessing suicide risk where a statement of suicidality was not necessarily seen as a reason to transport a patient to hospital if the risk can be managed. Clinicians described extensive documentation requirements to justify their clinical decisions.	"Police do tend to be quite black or white, so when we hear 'I want to harm myself' that automatically equals emergency department, whether or not it's the best option for the consumer or not." Police 11 "I've learned a lot about mental illness and… all sorts of stuff from working with the co-responders. I think for them as well there's benefit and insight into the way that consumers sometimes present to police at the scene as opposed to how they may present in a clinical setting within a hospital. It gives them, I guess, a good understanding of what we face. Then they can take that back to help educate their own colleagues." Police 15
	Implementation climate	Compatibility		+2	Although there was initial reluctance in some areas to accessing the MHCORE unit, participants from all groups reported that the MHCORE program has strong compatibility with core police and mental health business.	
		Learning climate	Learning needs	−2	Police participants reported that officers usually do not have the training or skills to meet the mental health needs of consumers in the field, and default to transport to hospital under an EEA. Participants from all groups acknowledged that transport to hospital is often not the best outcome for the consumer but police participants often didn't feel they had other options.	"I would say that some of my colleagues don't realize that the co-responder is qualified to make that mental health assessment. And it's just as qualified as if we took them to the hospital." Police 11 "I wish the technology was better. The biggest issue that I have, the only issue I have with this job, is dodgy technology." Clinician 3
			Learning experience	+2	Participants across all groups described the MHCORE program as a valuable learning experience. In some areas, police officers are intentionally rostered to the unit on a rotational basis to increase the mental health knowledge of the workforce as a whole.	
		Relative priority	Drain on resources	−1	A small number of participants felt strongly that staffing the MHCORE program reduces frontline operational capacity because it "[pulls] people out of stations" (Police OIC 26).	

(Continued)

Table 1
(Continued)

Domain	CFIR construct	Topic	Subtopic	Rating	Description	Example quote
		Tension for change		+2	All groups expressed frustration with standard practice of managing mental health cases prior to MHCORE, and outside MHCORE hours.	
		Readiness for implementation	Access to knowledge and information	−1	Police participants described knowledge gaps in relation to MHCORE such as inclusion and exclusion criteria, and the role of the clinician. Police officers are rotated through the MHCORE units, and there is a need to improve officers' knowledge of the guidelines for the MHCORE program.	
			Available resources	−1	Clinicians reported issues with technology impacting documentation in the field. Some police and health participants reported that there are insufficient MHCORE teams to meet demand.	
			Leadership engagement	+1	Participants from both police and health reported supportive leadership engagement and "buy in" (Clinician 4).	
Characteristics of individuals	Knowledge and beliefs about the innovation	Beliefs and attitudes about mental health		−1	A small number of police participants discussed stigma related to mental illness and mental health presentations to police services.	"I think there's a big stigma around mental health issues because they think it's just people going crazy, but there's a whole lot of other things that go along with it as well." Police 20
	Other personal attributes	Knowledge of mental health	Clinicians very knowledgeable about mental health	+2	There was agreement across participant groups that the mental health clinicians are highly skilled and knowledgeable in mental health issues, and this was a key program enabler	"This is where I'd say we are a bit lacking in QPS… I feel as though there's a lot more officers doing it who haven't had any training or explanation of what the rule is and what the guidelines are and how to do it. So, I'd say yeah, that's sort of lacking at the moment." Police 19
			Police lack knowledge of mental health	−1	There was strong agreement that police lack knowledge of mental health, including recognition and management of mental health versus behavioural issues.	"First and foremost is we know nothing about mental health. We don't have any expertise to classify what is mental health." Police 25
Characteristics of the innovation	Adaptability	Highly adaptable		+2	Participants gave examples of various adaptations that have been made over time. They described a high degree of flexibility to meet local needs.	"What we've seen since the program has been running here in [region] is the way things are dealt with is probably at a much higher level now because we have skilled people, being the clinicians
	Complexity	High level of complexity		−1	Many complex elements to the program.	

(Continued)

Table 1
(Continued)

Domain	CFIR construct	Topic	Subtopic	Rating	Description	Example quote
	Cost	Cost-effectiveness of MHCORE		0	A few participants reported they believe the program is cost-effective due primarily to reductions in time per case and transport.	and also our regular co-responder police officers… And it's also reducing the need for not only QPS, to have resources tied up in dealing with these matters, but it was also QAS with transporting, and then it follows on to the actual hospitals… So, we've definitely seen a big reduction in our resource allocation to these matters, but also in the professional way that they're dealt with now." Police OIC 16
	Relative advantage	MHCORE is better than business as usual		+2	Strong theme across all groups. MHCORE was seen as much better than standard police practice for people in mental health crisis. Attending consumers in their own environment is a key advantage leading to timely support, more accurate assessment, and greater satisfaction for consumers and staff.	
Process	Executing	Funding		−1	A lack of funding for dedicated QPS staff on MHCORE units impacts the sustainability and scalability of the program.	"[Hospital and Health Service] are a really good employer. From the get go, my experience has been a lot of support from [name], [name], the guys I work with and everyone has a common goal which is really rare to find in Nursing. Really rare." Clinician 1
	Formally appointed implementation leaders	Supportive leadership		+2	The police and health program leaders were described as supportive and responsive to feedback.	
	Key stakeholders	Working together well but early days		+1	In some areas participants reported good working relationships between the main stakeholders (police, ambulance, mental health, emergency departments) however they acknowledged that it is early days and there is work to be done in improving relationships.	"I guess it's one of the beauties of this model that but also one of the tenuous parts of this model that it's three completely different organizations that are working together in partnership. Different hierarchies, different cultures, different everything. There is no amount of training that can prepare you for that, you know?" Manager (Clinicians) 1
		Tension between organizations		−2	Many participants reported tension between partner organizations, often related to communication issues, differences in organizational culture and policies, and a lack of understanding of each other's roles.	
Other	Unintended consequences (not in CFIR)	Avoidance of mental health jobs by other teams		−1	A small number of participants reported that some general duties police officers are using the MHCORE units to avoid doing mental health-related jobs.	"A lot of police are using it as a tool to get out of doing jobs. So they're using it for the wrong thing." Police 20
		Difficulty covering other frontline shifts		−1	QPS regions who implement MHCORE units need to find capacity within existing staffing and resources which can put pressure on other frontline responses.	"As an [Officer in Charge] I still have to supply staff for it so its advantages are somewhat outweighed by the fact that I have to take operational staff from my roster to perform duties." Police OIC 9
	Bridging factors (not in CFIR)	Data sharing memorandum of understanding		+2	The capacity of MHCORE teams to review and share both mental health and police data was seen as key to the success of the model.	

Note. Rating: +2 (strong enabler), 0 (neutral), −2 (strong barrier). CFIR = Consolidated Framework for Implementation Research; EEA = emergency examination authority; MHCORE = Mental Health Co-Responder; NGOs = nongovernmental organization; OIC = officers in charge; QAS = Queensland Ambulance Service; QH = Queensland Health; QPS = Queensland Police Service.

was not possible to report a proportion of the eligible police population.

Not all CFIR constructs were present in the data, therefore only constructs with relevant data have been presented in Table 1. A list of CFIR constructs not present in the data is in Supplementary File B. There was broad agreement between participants on the main themes, however some differences were identified between participant groups. These have been noted in Table 1. The Manager (Clinician) and Police OIC groups had small participant numbers due to the limited pool of eligible participants, therefore, the responses for these groups were incorporated into the broader mental health or police responses respectively. Thus, "clinician" refers to both the mental health clinicians and their managers, and "police" refers to both police officers and their officers in charge.

Overall Findings

Overwhelmingly, participants described the co-responder program as providing better outcomes for mental health consumers, their carers and families. All participants expressed frustration with standard emergency responses to mental health calls where people who express suicidal or self-harm thoughts or intention are transported to a hospital emergency department under an emergency examination order. This creates lengthy delays and takes crews off the road, reducing capacity to respond to other cases. The program was perceived to allow for a timely assessment, brief intervention in the consumer's home environment, and referral to appropriate community supports. This meant that in many cases, transport to an emergency department could be avoided, which was seen by participants from all groups as being a much better outcome for consumers and their families. As such Mental Health Co-Responder (MHCORE) was described as an appropriate way of managing these crises and participants. Police reported a desire to increase the MHCORE program to 24 h a day because these issues remain during the times when the unit is unavailable. There was also strong agreement across all participant groups that the co-responder program is a relative advantage over business as usual, and that it is the right intervention at the right time in the right environment.

MHCORE was described as a complex intervention with many moving pieces. Multiple examples were given which spoke to the complexity of the intervention and the need for strong collaboration and working relations. Some aspects included: managing frequent presenters and navigating the various legislative and policy requirements of the partner agencies. Participants described the culture of both organizations as being very risk averse. This, coupled with differences in culture, policies, and communication between organizations, resulted in some initial tensions between police officers and the mental health clinicians around risk management, governance, and the responsibilities of each party. It was critical to the project that these issues were clarified and doing so contributed to development of trust in each other's skills and knowledge.

Overall, there was good acceptance from all participants: "It's the only program I know that's been implemented with wholesale support from the crews" (Police OIC 25). However, there was a lack of agreement amongst police as to whether mental health cases were police business. Some participants felt that many people who are attended by police as part of core police business, particularly in domestic violence cases, experience mental health issues. Therefore, addressing the needs of people experiencing a mental health crisis was an unavoidable component of the police role. In contrast, a few police participants felt that mental health is not police business and should be managed by other organizations such as mental health services, ambulance, or nongovernment organizations, therefore for them MHCORE was not considered a high priority. An unintended consequence raised by three of the Officers in Charge was difficulty for police covering other frontline shifts because a frontline officer is taken off other duties to cover the co-responder shift.

Learning needs were frequently discussed. Police and health participants agreed that police have very little knowledge of and training in mental health, and that MHCORE had provided them with more detailed mental health knowledge. A more detailed analysis of the barriers and enablers of implementation is presented in Table 1.

Discussion

Across all participant groups there was agreement that the MHCORE program is a substantial improvement on the standard police management of mental health crisis cases. Although some participants stressed that mental health is not police business per se, it was acknowledged that attending to people experiencing a mental health crisis is an unavoidable component of the role, and thus police need to be provided with training and innovative supports that allow them to manage these cases effectively.

Using CFIR as our a priori theoretical framework enabled us to identify a broad range of contextual determinants related to the five determinant domains: outer and inner settings, characteristics of individuals delivering and receiving the intervention, characteristics of the intervention itself, and implementation process. Addressing these will be important for successful ongoing operation of the program. The key enablers were the data sharing agreement, supportive leadership, learning culture, the high level of complementary skills of police and mental health clinicians, and supportive police and health leadership. The data sharing agreement, which allows police and health services to share limited data about individuals attended by mental health co-responder teams (State of Queensland, 2017), was seen by participants as being

essential to the model's success. However, this data sharing is not possible in many other international jurisdictions due to differences between the legislative environments under which health and police services operate. It would be challenging to implement this MHCORE model in jurisdictions where data sharing between police and mental health clinicians during mental health crisis cases is not possible.

Many of the barriers, such as the need for further training of officers, are malleable, and it is possible that addressing these may improve the effectiveness of the program overall. Other barriers, such as the differences in legislative requirements of the two services, are not within the control of the mental health or police service. However, some such as developing strategies to manage ramping issues within individual districts may arguably be able to be influenced by the services under the right circumstances. Although most participants stated that the service should be expanded, this expansion, as well as the overall sustainability of the model, is impacted by difficulties covering the MHCORE shifts from existing frontline staff. This staffing difficulty is a key risk to the model long-term, and a new resourcing model may be necessary for sustainability.

The findings of this study are in alignment with those of previous research, with some notable differences. The facilitators identified by Bailey et al. (2018), multiagency collaboration, information sharing and team building align, and are expanded on by the findings of this study. To some extent the barriers identified by Bailey et al., i.e., lack of clear policies and procedures initially, difficulties for some staff in transitioning to the co-responder roles, also aligned with participant reports in this study, however there was no lack of local acute treatment facilities in the Brisbane South region, and there was reported strong coordination with external agencies. This highlights the importance of conducting a robust context assessment to determine local, contextually-specific influences on implementation. However, the results presented in Table 1 may be considered an indication of components to consider when designing and implementing a police mental health co-responder program. The CFIR was a strong fit as an a priori framework for identification of these contextual influences, with some notable additional inductively derived codes.

Bridging factors are constructs which span contexts, often acting as important enablers. In this study, the data sharing agreement had a strong influence on the program's implementation. Although not explicitly represented in CFIR, bridging factors are included in other theories and models such as the Exploration Preparation Implementation Sustainment Framework (Moullin et al., 2019). The lack of explicit inclusion of bridging factors is a limitation of CFIR. This demonstrates the importance of flexibility, combining multiple theoretical approaches and frameworks as needed to address the context of individual projects. The importance of the data sharing agreement in this study also raises the issue of contextual sensitivity, which may limit the generalizability of these results to other jurisdictions where data sharing is not feasible. Other models such as crisis intervention teams with specially trained police, expert mental health phone support for police officers, nonpolice response teams such as peer-response or liaison and diversion models, or comprehensive mental health emergency programs may be suitable alternatives (Compton et al., 2008; Kane et al., 2017, 2018; Pakes and Winstone, 2010; Townsend et al., 2023).

In this study we found Puntis et al.'s (2018) criteria for reporting of co-responder programs a useful guide for describing the model. However, we would suggest an addition to the framework: we believe a strong governance framework is a key component of any mental health co-responder program and therefore recommend inclusion of this element in the reporting framework. We acknowledge that a limitation of this study is that it is a post hoc evaluation, and therefore we have only been able to consider the influence of constructs in hindsight, rather than to adapt the program throughout the implementation process. Regardless, these results highlight the relevance of this framework. In future, for mental health and police services considering implementing a co-responder program it is strongly recommended that an implementation science framework or model, such as CFIR, be used as a guide for assessing context, developing, implementing, and evaluating co-responder programs.

Implications

Mental health co-responder programs play an important role in emergency services responses to people experiencing a mental health crisis. These models are highly adaptable to local needs. They may be resource intensive, however they may be cost-effective in the long run. A cost-benefit analysis is needed to determine whether this is the case. An important consideration is to minimize the impact of the co-responder program on other frontline services, for example, allocating dedicated staffing and funding.

Using an implementation science framework enabled us to identify a much broader range of enablers and barriers to the program's effectiveness than identified in previous studies. In future, it is recommended that police and mental health services considering implementing a mental health co-responder program utilize an implementation science model or framework such as CFIR throughout the implementation process at the exploration, planning, implementation and sustainment phases. These findings will be used to inform the scale and spread of the police mental health co-responder programs within South Brisbane and in other areas of Queensland.

Strengths and Limitations

This is the first known paper which used an implementation science framework to understand the implementation

determinants of police mental health co-responder programs. Although the findings of this study are specific to the Brisbane South region, and the contextual factors present at the time, nevertheless they are informative of the types of influences that are important to consider when implementing a police mental health co-responder program. There was a very high level of participation from eligible participants.

This study was a post hoc analysis, and no implementation science model or framework was used in the design or implementation phases of the project. It is recommended that a suitable evidence-based model or framework be used from the project's conception and throughout the context assessment, preparation, implementation, evaluation, and maintenance phases.

Author Contributions

M. Wyder, E. Bosley, S. Garner and S. Powell conceptualized the research program and developed the study protocol. M. Wyder, R. du Cloux, N. Grevis-James, and J. Pickard conducted interviews. O. J. Fisher, C. Donahoo, and M. Wyder conducted the analysis. O. J. Fisher coded all transcripts. C. Donahoo and M. Wyder reviewed the transcripts and confirmed the key findings. O. J. Fisher wrote the bulk of the manuscript, with contributions from M. Wyder and C. Donahoo. All authors provided feedback and approved the final manuscript.

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ORCID iDs

O. J. Fisher https://orcid.org/0000-0003-1112-5370
C. Donahoo https://orcid.org/0009-0009-7981-1546

Supplemental Material

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