Mental Health Joint Response Car Pilot - Evaluation Report

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Date	August 2020

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1. Executive Summary

The London Ambulance Service (LAS) plays a crucial role in the mental health crisis care pathway as 999 and NHS 111 are often the first point of care for patients experiencing a mental health crisis. Mental Health calls are often complex, and take time and specialist expertise to manage effectively, which often leads to patients being conveyed to an emergency department, which is rarely the correct environment.

The evaluation of the Mental Health Joint Response Car Pilot serves to inform NHS England and system partners of the impact of this scheme on stakeholder experience and on ED conveyance rates; as well as evaluating the connectivity to and effects on the wider mental health system. The evaluation period for this paper is from 13/01/2020 until 26/04/2020.

In November 2018 the London Ambulance Service (LAS) launched the (MHJRC) pilot in South East London. It paired paramedics and mental health nurses employed by LAS to respond to patients who were identified as experiencing a mental health crisis, or requiring a specialist mental health response. One of key findings from the evaluation was the significant reduction in Emergency Department (ED) Conveyance when compared to the business as usual (BAU) response of a double crewed ambulance (DCA) responding to the same coded mental health calls in the same time frame.

Following on from the success of the initial pilot, Winter Resilience Funding was secured, and five additional mental health cars were launched. In collaboration with Mental Health Provider Trusts fourteen mental health professionals were seconded to the LAS to work alongside paramedics. A five-day training week was held for all staff which included sessions on specific mental health conditions, positive risk taking, mental and physical health interface, kit familiarisation, paramedic assist and advanced life support scenarios. The MHJRC's operate from six ambulance stations across London between the hours of 11:00-23:00.

The pan-London MHJRC pilot was launched in two phases – in South East & South West London on 13/01/2020, and in North West, North Central & North East London on 03/02/2020.

The main aims of the MHJRC was to ensure patients get the right care in the right place first time and to ensure parity of esteem for Mental Health Patients using the London Ambulance Service.

The scheme has a significant impact on ED conveyance rates compared to business as usual (BAU) dispatch by LAS.

80% of cases were discharged at the scene, compared to a BAU non-conveyance rate of 41% This suggests that the combination of MH Clinician alongside the paramedic has a significantly positive impact on the quality and efficiency of care delivered at the scene.

The majority of patients seen by the joint response car had a previous history of mental health problems and were receiving active care from mental health services at the time of the call out.

Social stress factors contributed to 58% of the joint response car call outs. The most common category of presentations were people who had suicidal thoughts or behaviours, or who

showed signs of psychosis. Where required the MHJRC team liaised with local Single Points of Access in order to obtain further information and utilize any appropriate Care Pathways available. Coupled with the mental health staff having direct access to their trust's records via remote devices.

The clinicians also identified safeguarding concerns, underlying severe mental illness, co-morbid physical health problems, or identified problems with substance misuse. The police were also involved for 35% of the sampled calls. This highlights the complexities of patient group and provides justification for the skill mix.

Patient feedback demonstrates an overall positive experience and patients report there is a benefit from being treated in their community as opposed to being conveyed to the Emergency Department.

Albeit in a very limited sample of 10 in-depth interviews, due to the pandemic. Themes in the positive feedback included the specialist skills of the team, the personalized care provided by the team, and the team's ability to treat people at home. More work is needed to assess patient experience.

Feedback from the MHJRC team report high levels of job satisfaction and they report that the multi-disciplinary approach to care benefits the patient group. Key themes included the sharing of skills and knowledge, the benefit of a joint mental and physical health assessment, greater job satisfaction, and the positive experience of being able to treat people at home and in the community rather than taking people to ED.

One of the key findings of the pilot is the reduction in ED conveyance when compared to the Business as usual response. The tracking of the NHS numbers post discharge from the MHJRC shows that only 4% of patients attended ED 7 days after a See and Treat intervention.

The strong evidence of reduced ED attendances resulting from the joint response car model suggests that every Integrated Care Partnership in London should fund this as an ongoing service in line with the expectations of the long-term plan.

2. Background and Context/Strategic Case for Change

The London Ambulance Service (LAS) is the busiest ambulance service in the United Kingdom and serves one of the world's most dynamic and diverse cities in the world, providing provide urgent and emergency health care serving over eight million people. They respond to over 1.9 million emergency calls from across the capital and attend more than 1.2 million incidents every single year and deliver a 24-hour NHS 111 Integrated Urgent Care Service in south east and north east London.

LAS are often the first point of care to people experiencing a mental health crisis - In 2019/20 there were over 168,000 calls and 105,000 incidents attended relating to Mental Health. Mental Health calls can often be complex to manage effectively. Mental Health Calls to the LAS often result in long on-scene times for our crews as they try to navigate the many and varied pathways. Often patients are conveyed to an Emergency Department which is rarely the correct environment and can often lead to a poor patient experience. The strategy identified that some of the key reasons why patients sometimes had this poor experience are:

- Paramedics receive limited formal training in mental health and therefore report feeling unconfident in treating patients with those specific needs
- Mental health pathways were often difficult to access, particularly out-of-hours. This was sometimes because LAS staff were unsure of which pathways to access but also because some MH pathways would not accept referrals from non-mental health professionals.

As part of the LAS 2018 – 2023 strategy 'World Class Ambulance Service for a World Class City' LAS identified that by differentiating the service provision for patients with mental health needs patient outcomes and experience could be improved whilst doing so in a more efficient and effective way for the Urgent and Emergency Care system. The elements of this differentiated response that have been tested and continued to be developed are:

Care Segment	Description
1. Demand reduction (e.g. doesn't need a clinical assessment first)	• Improved user experience and reduced demand on 999 and 111 CAS through demand reduction by other agencies supported by and encouraged by LAS; • MPS and local mental health teams reducing need to contact LAS • Creating warm transfer options for 999 Call referral options e.g. Samaritans, IAPT • Creation of an interface between 111 and crisis lines • 111 and referrals to other ACPs • 111 and IAPT
2. Optimising Hear and Treat and Hear and Refer response to MH patients	• Improved 'consult and complete' within CAS and 999 clinical hub through use of SCR and Video Assessment • Improving referral's to other mental health support services incl. voluntary sector
3. At Scene Referrals to other agencies	• Review current MH ACPs across London and acceptance criteria by our front-line crews and our Clinical Hub staff. • Identify and analysis reasons for low referral rates • Identify barriers with direct referrals into MH ACPs. • Adopt 'Agile' approach to rapidly resolve issues with low referral rates
4. Optimising Face to Face response	• Continuation of the current approach of enhanced training to paramedics and rotation of paramedics through MHJRC. • Progress with SEL expansion to test other elements of pathway incl. skill mix

	• Explore control room dispatch approach to ensure dispatching to most appropriate patients (e.g. those not suitable for hear and treat)

This evaluation is primarily looking at the fourth of these areas. The ultimate intent is to provide the right care in the right place at the right time to improve patient outcomes and experiences in the most efficient and effective way possible.

National ambition – Long Term Plan (LTP)

NHS England (2015) in guidance for Commissioners on clinical models for Ambulance Services[1] stated that mental health problems require careful consideration to ensure that an appropriate range of services are accessible in a timely way. The Mental Health Crisis Care Concordat[2], set out important guidance for commissioners of health services in relation to the facilities that should be provided. The 2015 guidance suggested that 'see-and-treat' models are commissioned in accordance with the Concordat, providing timely and easily-accessed support from dedicated mental health professionals and services that can be rapidly mobilised to support patients at home or in the community at all times of the day and night. The aim of such 'see-and-treat' models is to reduce demand on other parts of the healthcare system and the police. The MHJRC provides such a 'see-and treat' intervention for those contacting LAS with a mental health emergency.

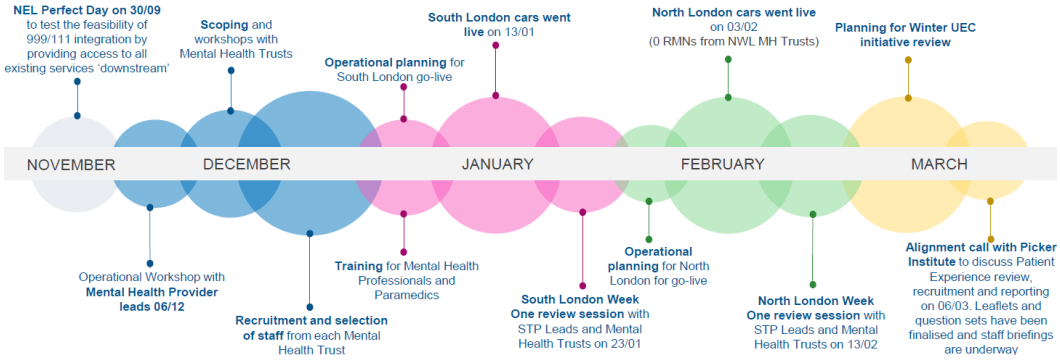
The NHS LTP outlined the aim to have a programme for mental health and ambulances, including mental health transport vehicles, training for ambulance staff and the introductions of nurses and other mental health professionals in Integrated Urgent Care Clinical Assessment Services.

The Mental Health Joint Response Car (MHJRC) offers a specialist response to patients who have been identified as experiencing a Mental Health (MH) crisis. The project included a combination of a paramedic and registered MH band 7 nurse responding to crisis incidents, with the aim of **"Seeing and Treating**" a high proportion of the MH crisis incidents within the patient's home and reducing the number of patients conveyed to ED.

Since the initial planning and scoping of the project in November/December, the following progress has been made:

[1] *Transforming Urgent & Emergency Care: Clinical Models for Ambulance Services. NHSE 2015* https://www.nhs.uk/NHSEngland/keogh-review/Documents/UECR-ambulance-guidance-FV.PDF

[2] https://www.crisiscareconcordat.org.uk/about/

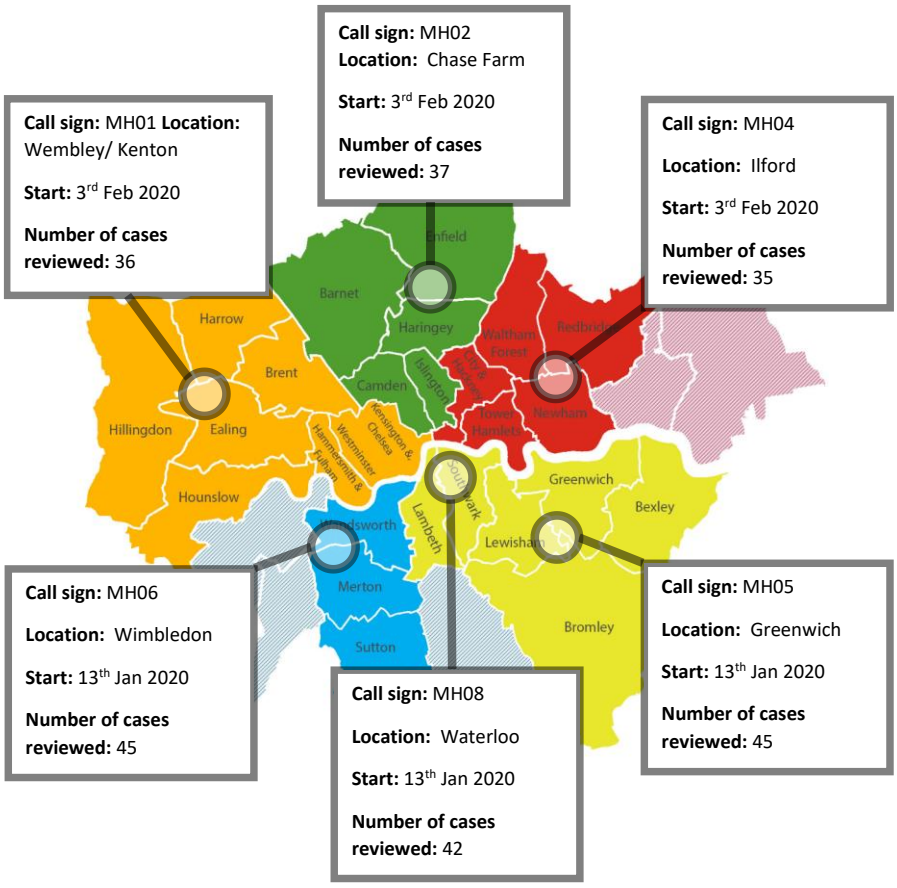


3. 'The Initiative'

In 2015 LAS introduced Mental Health Nurses into the Emergency Operations Centre – this was following feedback from patients stating they wanted to speak to a Mental Health professional at the point of their crisis. 46% of people with a mental health condition also have a long-term physical health condition and those with a severe mental health condition can have up to a 20 year shorter life expectancy than for those without (Centre for Mental Health[i]).

As part of the LAS organisational strategy, on 28th November 2018 a six month pilot of The Mental Health Pioneer Service was launched, operating a single car for 12 hours a day, seven days a week, out of Waterloo Ambulance Station.

This Mental Health Joint Response Car (MHJRC) deploys a band 7 Mental Health Professional (MHP) with a Paramedic to patients who have been identified as experiencing a Mental Health Crisis or requiring a specialist mental health response. The MHP is able to complete a biopsychosocial assessment, formulate a risk assessment and deliver brief psychological interventions to help ease emotional distress. The Paramedic is able to complete a physical health assessment and their expertise in pre-hospital care. Combining the skill sets of these experienced clinicians maximises the chances of being able to safely manage the patient in the community.



Map 1: The station, STP and start date of call-signs of the MHJRC, with number of cases reviewed.

A thorough evaluation was undertaken following the end of the six-month pilot which demonstrate that the mental health pioneer service achieved an ED conveyance rate of 19%, which compared favourably with the BAU conveyance rate and 54%.

The table below provides the key outcomes measures from the 2018/19 pilot evaluation:

	Mental Health Pioneer Service Pilot	BAU response
ED conveyance rate	19%	54%
See & treat and non-convey	77%	38%
See & convey to 'other'	3.7%	7.6%
Referral to MH pathway	19%	4%
Job cycle time	96 minutes	98 minutes
Utilisation	69%	87%
Incidents per shift	5.05	6.05

Based on the success of the 2018/19 six-month pilot, as part of Winter Resilience Plans for 2019/20, 5 additional cars were launched as part of a rapid expansion across the London region for 16 weeks. This expansion was a collaborative model of service delivery, working in partnership with mental health trusts across London, who seconded their MHP's to work alongside LAS paramedics[3].

A consolidated training course was provided for these mental health nurses with the additional cars being operational in South London from 13th January 2020 and in North London from 3rd February 2020.

4. Patient Report Form findings

MHJRC Patient Report Form Sample Analysis

Sources & Limitations

The London Ambulance Service (LAS) complete a Patient Report Form (PRF) for all incidents and patients attended. This is a hand-written document completed during and immediately post assessment and includes structured and free text sections. Where possible and available, additional information recorded on the PRF is gained from electronic clinical records (Coordinate My Care or Summary Care Records) accessed by the MHJRC clinicians via laptop or tablet. Information is also obtained from other health care professionals (HCP) involved in the patient's care via telephone and occasionally, information recorded that is sourced from the patient, their family or friends cannot be confirmed by HCPs involved in the patient's care. Not all the information contained within the PRF is validated and this is a limiting factor within the sample analysis.

Methodology

A total sample of 240 PRFs (9.6%) from the total MHJRC callouts during the evaluation period (13th January to 26th April 2020) were reviewed. Sampling was purposive, to reflect overall conveyance rate outcomes, an equal gender split and geographical areas covered by the MHJRCs and their overlapping Sustainability and Transformation Partnerships (STPs). Individual cases meeting these criteria were then selected by at random for inclusion in the sample for review by the project clinical leads; the LAS Consultant MH Nurse, the MHJRC project lead Paramedic and a Consultant Psychiatrist, as well as another member of the project evaluation team (a mental health nurse by background). Each reviewer was given a selection of the random sample of 240 PRF's to evaluate against an agreed set of standards. This data was then entered into spreadsheet to enable further analysis.

Call-signs of the MHJRC

Call-signs allocated to the MHJRC represent the geographical part of London the car is based in and overlapping STP area. The number of cases reviewed for each call-sign is shown in Table

[3] *Participating mental health trusts: South London and Maudsley, Oxleas, South West London and St George's, North East London, East London, Barnet Enfield and Haringey, West London and Camden and Islington*

1 and Map 1 provides a further visual aide. The MHJRCs went live at different times between January and February 2020, which is reflected in the number of call-outs reviewed in this sample.

The MHJRCs would mainly cover their own geographical area, but could respond to any part of London, dependent upon demand and the availability of other MHJRCs.

Call-sign	STP	Start date	Number of cases reviewed
Wembley/ Kenton (MH01)*	North West	3rd Feb	36
Chase Farm (MH02)	North Central	3rd Feb	36
Ilford (MH04)	North East	3rd Feb	35
Greenwich (MH05)	South East	13th Jan	45
Wimbledon (MH06)	South West	13th Jan	45
Waterloo (MH08)	South East	13th Jan	43

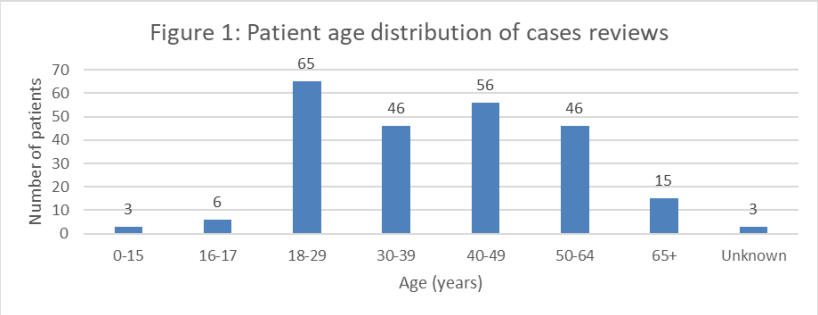
Table 1: Number of cases reviewed for each call-sign

** Due to COVID-19 operational pressures, MH01 was moved from Wembley to Kenton on 25/03/2020*

Patient demographics

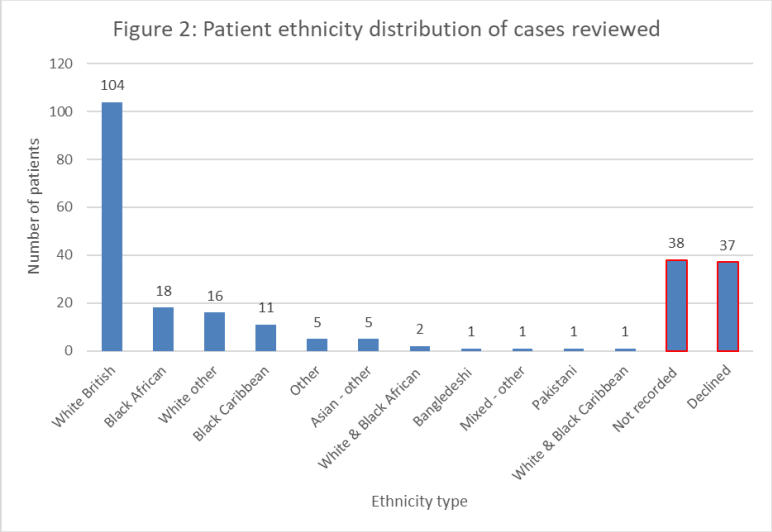
Gender and ages of cases reviewed

Of the 240 cases reviewed, 124 (52%) were male and 116 (48%) were female. The mean age was 40 and the median age 39. The youngest patient was 8 years old and the oldest was 94. A complete distribution of the ages can be seen in Figure 1 below.



Ethnicity of cases reviewed

Of the 240 cases reviewed, 104 (43%) of the patients were White British, 18 (7%) were Black African, 16 (7%) were White Other and 11 (4%) were Black Caribbean. Ethnicity was not recorded or unclear for 38 (16%) of cases reviewed and declined by 37 (15%). By comparison, ONS data from the 2011 census indicates that London is the most ethnically diverse region in England and Wales, where 40.2% of residents identified with either the Asian (18.5%), Black (13.3%), Mixed (5%) or Other (3.4%) ethnic group. In 2011, White British accounted for 44.9% of the population and 14.9% comprising the White Other group. A complete distribution of the ethnicity patients can be seen in Figure 2 below.



Management of all cases reviewed

Diagram 1 below shows the management and outcome of all 240 cases reviewed. Of these, a total of 185 (77%) were non-conveyed and discharged at the scene and 55 (23%) were conveyed for further care (see Figure 3). The conveyance rate of 23% for this sample was similar to the rate of 20% for all cases receiving a service from the MHJRC.

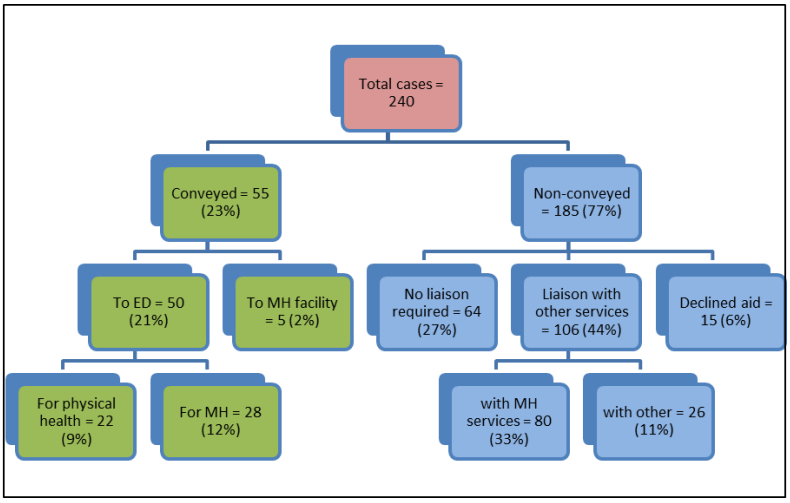


Diagram 1: Outcome and management of all cases reviewed

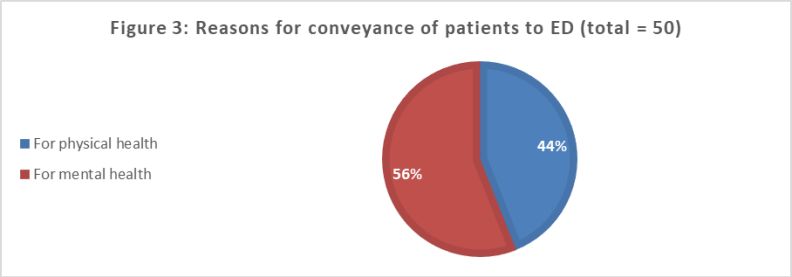
Conveyed cases

Of the 55 cases conveyed to further care, 50 (90%) were conveyed to an emergency department (ED) and 5 (10%) were conveyed to a mental health facility. Of the 50 cases conveyed to an ED, 22 (44%) were for a primary physical health condition which required further investigation or

PATIENT STORY

The MHJRC attended a woman reported to be suicidal. The patient spoke candidly about how she had contracted COVID19 and had to self-isolate. This meant she could not work or spend time with her grandson; two activities which she enjoyed very much and had recently realised had been using to distract her from the grief of losing a child a few years earlier. elf-isolation reinforced how lonely she was and how she had not processed the bereavement of her child. She was experiencing low mood, poor sleep, reduced appetite, and generalised suicidal ideation. She had also experienced dizziness for a few weeks. The patient was found to have an abnormal ECG and irregularities in blood pressure readings. A plan was agreed with the patient which involved the MHJRC clinicians contacting the patients GP to inform them of the patient's abnormal physical health findings and mental health concerns. The GP booked an appointment for the next day and the MHJRC clinicians left the patient at home with further signposting information to other local support services. This case demonstrates the holistic nature of the MHJRC intervention and the ability of the team to identify both mental health and physical health concerns and to link people to the most appropriate service/pathway for their particular needs.

treatment which could not be carried out on scene, whilst 28 (56%) were conveyed due to a primary mental health reason, as shown in Figure 3.



In addition to the 28 cases conveyed to the ED due to a primary mental health reason, a further 5 were conveyed to a mental health facility (a total of 33 cases of 240, 14%). Of those 33 cases, the most common reasons for mental health conveyance, based on the clinical impressions of the MHJRC clinicians, were for psychotic symptoms (12 of the 33, 36%) and risk of suicide (8 of 33, 24%). Other reasons included relapses in patients with Bipolar Affective Disorder, self-harm, agitation and confusion.

Conveyed due to their mental health, with 1 of these patients having attempted to hang themselves and the other "erratic and running into the road". This represents a third of all LD patients in the 240 cases reviewed. It is noted that this figure is based on a recorded learning disability within the sample. Therefore, this may be an underestimate of all individuals if a LD diagnosis has not been recorded.

Of the 33 patients who were conveyed for their mental health, 2 were transported by police on a section 136 and 2 were under a section of the Mental Health Act already and conveyed back to their mental health facility.

Non-conveyed cases

Of the 240 cases reviewed, 185 (77%) were non-conveyed and discharged at scene. Where appropriate, the MHJRCs would liaise with other services involved in the patients care whilst on scene (see Diagram 2). Of the 185 cases where the patient was not conveyed, the MHJRC clinicians liaised with mental health services (crisis line or the patient's own CMHT) in 80 cases (43%) and liaised with the patients' GP or social services in 26 cases (14%). No further liaison was required for 64 (36%) of the 185 non-conveyed cases and 15 of these patients (8%) declined further interventions.

PATIENT STORY

The MHJRC attended a 35-year-old male with a history of depression and substance misuse issues. His GP had called LAS as the patient had been experiencing suicidal thoughts and intent. He had attended the surgery earlier that day and was distressed and suicidal. The GP had advised him to attend the local ED for urgent assessment by the Mental Health Liaison Team, but GP called LAS when patient did not go. The patient was surprised when the MHJRC arrived. He advised he wasn't keen to go to the ED as he had experience of attending before and had to wait for several hours. He had tried to contact the local Crisis Line but there was no answer so decided to remain at home and hope the suicidal thoughts passed. He had experienced significant loss in his life; and was not keen to 'burden his family' with his problems. There was concern about his suicide risk and he acknowledged that he felt desperate. The MHJRC discussed various treatment options with him and agreed that the best course of action would be to refer him to the local Crisis Team via the local MH Trust Single Point of Access who made a referral to the Crisis Team. They would visit in the morning. The MHJRC team formulated a crisis plan with him to help support him during the coming hours. The patient was extremely thankful and said, "Today you saved my life".

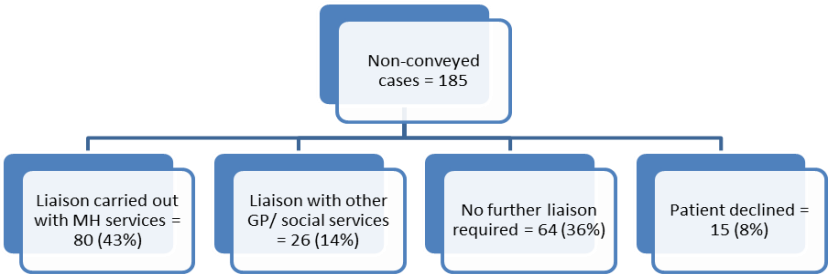


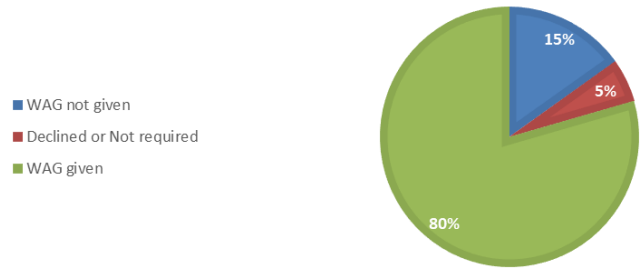
Diagram 2: Outcome and management of non-conveyed cases reviewed

Worsening advice and guidance for non-conveyed cases

When discharging a patient at scene, the MHJRCs are encouraged to agree a 'worsening advice and guidance' care plan with the patient and/or those involved in their care (family, friends, carers, other HCPs etc.). These care plans detail what they should do if the patient's situation worsens or changes.

Of the 185 cases where the patient was non-conveyed, a 'worsening advice and guidance' (WAG) care plan (beyond advice to call 999) was agreed and given for 147 (80%), 'declined of not required' for 10 (5%) and not given for 28 (15%), as shown in Figure 4.

Figure 4: 'WAG' for non-conveyed patients (total = 185)



Physical health history

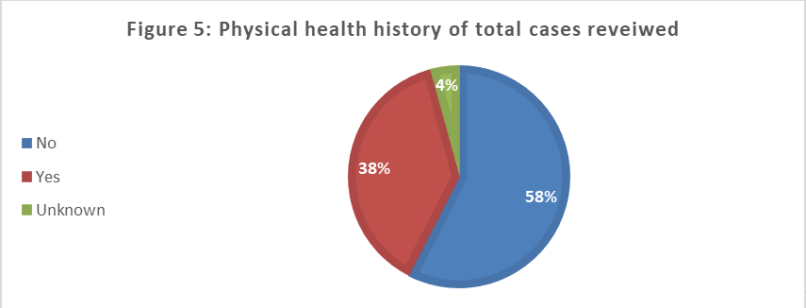
The paramedics on the MHJRCs routinely assess the patient's physical health history. This information is gained from the patient and their friends or family, and where available, confirmed through contact with another Health Care Professional involved in their care or via electronic care records.

Of the 240 cases reviewed, 92 (38%) patients had a history of a physical health problem (e.g. hypertension, diabetes, COPD,

PATIENT STORY

LAS was called by a patient's GP, who had concerns due to the patient having a one-week history of psychotic symptoms. LAS dispatched the MHJRC. On arrival were met by the patient and his partner, as well as their infant child. The patient gave the history that they had called the GP themselves, after experiencing 'epiphanies' of being sent by God to save the world and had become suspicious of surveillance through his laptop and television. It was noted that the patient had suffered a previous episode of psychosis whilst in their home country over a decade ago but had received no formal diagnosis. The patient's partner stated that the patient had begun expressing religious ideology, which was unusual. The patient demonstrated good insight into their presentation and appeared willing to engage with community mental health services. The clinicians returned to the vehicle and began arranging a referral to a crisis team. As the crew were making the referral, the patient's partner came to the MHJRC clinicians distressed and upset. After the crew had left the flat, the patient had locked the door and began to try and set fire to some notebooks he had been writing in. The patient exited the building and ran away, with the MHJRC crew following and requesting the police. The Patient walked towards the river Thames, The patient was placed under section 136 and taken to a Place of Safety

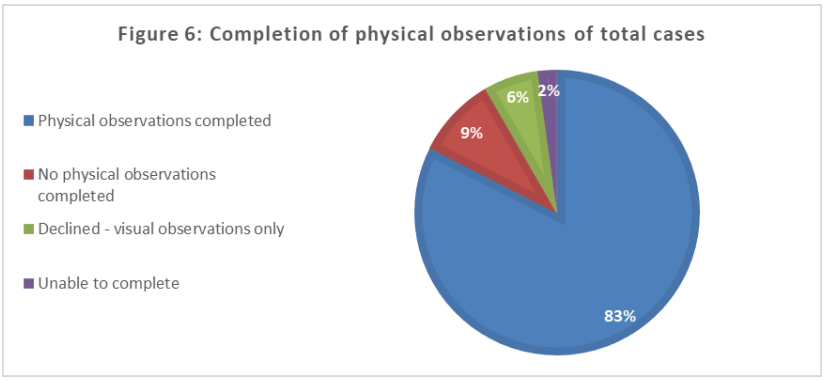
epilepsy), with 148 (58%) having no known physical health history and 10 (4%) where it was unknown (see Figure 5).



Physical observations

The MHJRCs carry the necessary diagnostic equipment to assess vital signs including heart rate, oxygen saturations, blood pressure, temperature and blood glucose levels (where indicated).

Of the 240 cases reviewed, full physical observations were carried out on 198 cases (83%), with 22 (9%) having none completed, and 15 (6%) declining full observations and receiving visual assessment only (level of consciousness, respiratory rate and effort and perfusion to the skin). For 5 of the 240 cases reviewed (2%), the MHJRC clinicians were unable to complete any physical observations as the patient had left the scene prior to the MHJRC arrival or was refusing to allow access to their location (see figure 6).



Physical examination

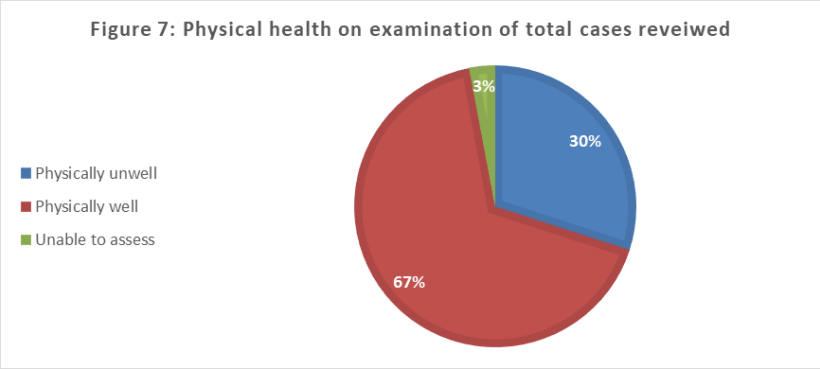
The MHJRCs carried out a physical examination to assess for new illness and injury or exacerbations of existing conditions.

Of the 240 cases reviewed, 161 (67%) presented as physically well, 72 (30%) as physically unwell, and 7 (3%) were unable to be assessed as they either declined assessment or left scene prior to the MHJRC's arrival (See Figure 7).

PATIENT STORY

An emergency call to the police was placed for a woman by her husband, after she had attempted to take their children away and there were concerns for her mental health. The police attended scene and requested LAS. The MHJRC was dispatched to assist. On arrival, the MHJRC were met by the police and the patient's husband and given the history that the patient had a diagnosis of schizoaffective disorder. The patient had a history of psychotic episodes and had been identified by her psychiatrist as potentially suffering a relapse in the last week.

The patient's medications had been increased and contact with mental health services stepped up. The day of the incident, the patient had become increasingly paranoid that her husband had been tampering with her medications, and also appeared to be suffering from intense persecutory delusions that her family were at significant risk from others. The patient was unable to specify the type of risk but was beginning to become increasingly paranoid about those closest to her and worried particularly for the safety of her young children.



Of the 72 cases found to be physically unwell on examination, presentations and impressions noted by clinicians on the MHJRC varied, with commonly noted themes including general malaise, hypertension, deliberate self-harm, tachycardia, abdominal pain, and infections. There was also a small amount of rarer illnesses queried by the MHJRC clinicians (serotonin syndrome and acute behavioural disorder), and traumatic injuries such as attempted hangings.

Management of physical health problems

Of the 72 cases where a patient was physically unwell on examination, further assessment or treatment was advised or arranged via the ED for 30 (42%), via GP for 24 (33%), not required for 15 (21%) and declined by 3 (4%) (See Diagram 3).

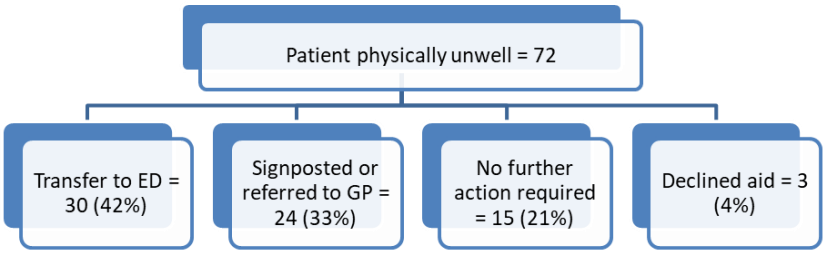


Diagram 3: Outcomes for the 72 cases of new or exacerbation of a physical illness/ injury

Past history with psychiatric services

Clinicians on the MHJRC routinely gather information about a patient's past psychiatric history and if they were currently under the care of mental health services (primary or secondary). This information was either self-reported from the patient or gained from mental health trusts and electronic clinical records where available.

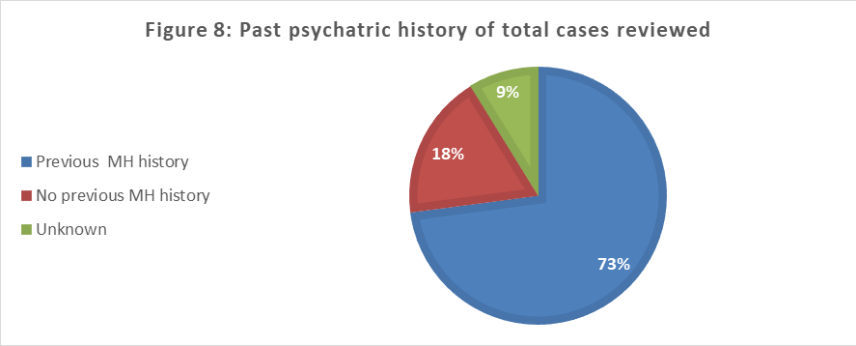
Of the 240 cases reviewed, 174 (73%) had a documented past psychiatric history, 44 (18%) had no psychiatric history and for 22 (9%) of the 240 cases it was unknown (see Figure 8 below).

PATIENT STORY

A patient had recently been diagnosed with depression by his GP and started on a selective serotonin reuptake inhibitor (SSRI). Since commencing the medication, his family had noticed a change in his behaviour, with increased anxiety and agitation.

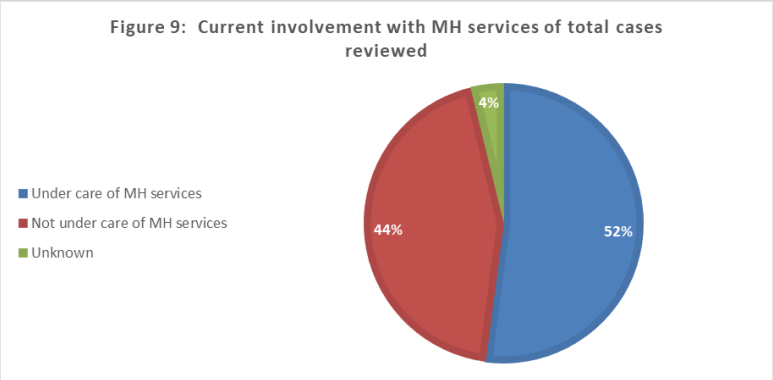
They called for an ambulance and were dispatched the MHJRC. On arrival, the clinicians met the patient and his family and were told that the family had called for help after having to stop the patient from smashing a bottle and grabbing a knife.

On conducting a physical assessment of the patient, they were found to be agitated, flushed and diaphoretic, with a rapid pulse and high blood pressure. The MHJRC clinicians were concerned that the patient may be suffering from serotonin syndrome, a rare and potentially life-threatening condition. They arranged for transport to the Emergency Department for further support.



Current involvement with mental health services

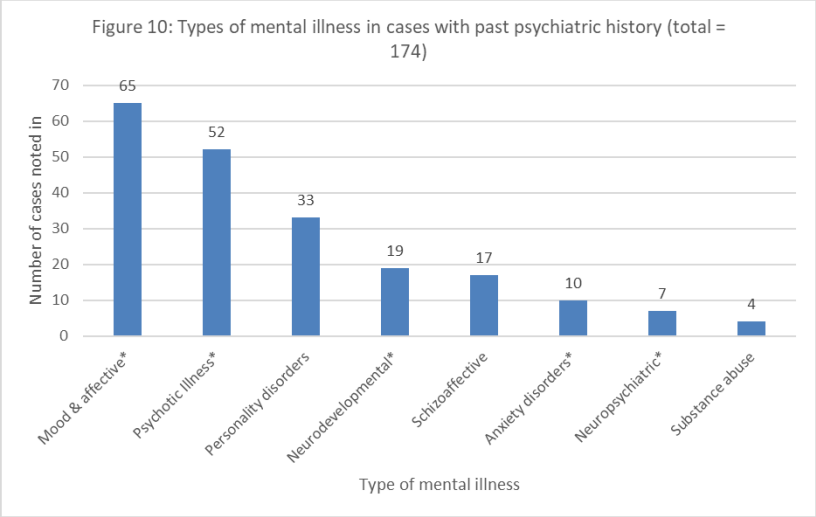
Of the 240 cases reviewed, 125 (52%) were noted to be under the care of mental health services at the time of contact with the MHJRC and 106 (44%) were reported as not currently open to or under a mental health team. It was not known in the remaining 9 of the 240 cases (4%) reviewed (see Figure 9).



Previous psychiatric history and report diagnoses

The psychiatric history and reported diagnoses of patients were recorded by the MHJRC clinicians. This information was either self-reported from the patient or others on scene at the time of assessment or gained from mental health trusts and electronic clinical records where available.

Of the 240 cases reviewed, 174 (73%) had an identified psychiatric history. The types of diagnoses varied, and it was common for patients to have more than one recorded, with 33 of 174 cases (19%) presenting with 2 or more. The most frequently noted as single diagnoses, or as one of several were: mood and affective disorders which included depression and bipolar affective disorder (65 of 174, 37%), psychotic illnesses which included schizophrenia and psychosis (52 of 174, 30%), and personality disorders (33 of 174, 19%) (See Figure 10 and Table 2).

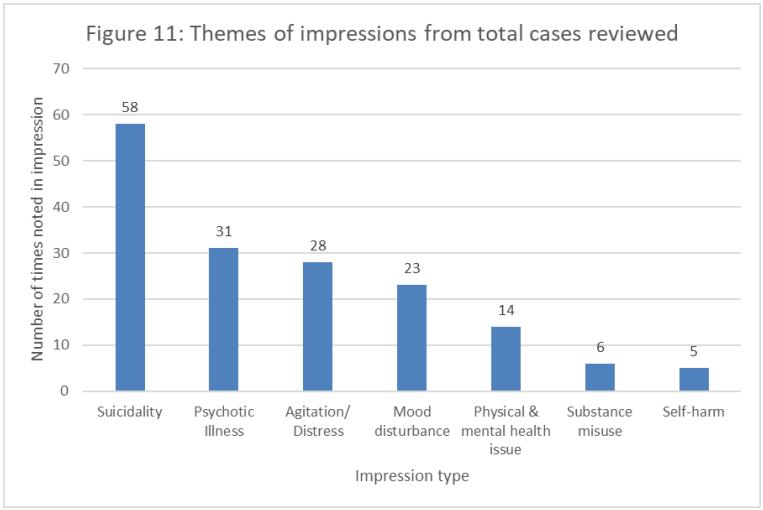


Type	Including
Mood and Affective disorder	Depression (including psychotic and postpartum), Depression & Anxiety, Bipolar Affective Disorder and Suicidality
Psychotic illness	Schizophrenia, Psychosis, Delusional disorder
Neurodevelopmental	Autistic spectrum disorder, Learning difficulties, Attention deficit hyperactivity disorder
Anxiety disorders	Anxiety, Post-traumatic stress disorder, deliberate self-harm
Neuropsychiatric	Alzheimer's & Dementia

Table 2: Types of mental illness included in Figure 10

Clinical impression

The MHJRC clinicians record a clinical impression of the reason for the call-out, often describing the related symptoms, diagnosis or behaviour of the patient. These clinical impressions varied in level of detail and in some cases had multiple differentials recorded. The most common have been grouped into broader themes and are shown in Figure 11. Of the 240 cases reviewed, the most commonly noted theme in the MHJRC's clinical impression was suicidality (58), followed by psychotic illness (31), and agitation or distress (28).



Social stressors, substance misuse and safeguarding

The MHJRC clinicians assessed for social issues, substance misuse and safeguarding concerns. This Information was gained directly from the interview and assessment with the patient or those involved in their care or from observation whilst on scene. Also, information could be gained from other services and electronic clinical records where available.

Of the 240 cases reviewed, 139 (58%) were noted to have social stressors contributing to their current presentation, with 86 (36%) having no reported social stressors and 15 (6%) cases where it was unknown. The types of social stressors varied widely, with common themes including relationships (family, friends and others), bereavement, housing, financial troubles, employment (lack of and pressure of), isolation, support needs, antisocial behaviour, forensic issues (victim and perpetrator), gender and sexuality, domestic violence/abuse.

Drugs and alcohol were noted by MHJRC clinicians to have been in use or of concern in 60 of the 240 cases reviewed (25%), with 178 (74%) not presenting with drug and alcohol concerns, and 2 cases (1%) where it was unknown.

Of the 240 cases reviewed clinicians identified safeguarding concerns in 22 (9%) of patient, with 208 (87%) having no safeguarding concerns noted and 10 (4%) where it was unknown. MHJRC clinicians complete safeguarding referrals with the LAS Emergency Bed Service via telephone whilst on scene.

COVID-19 and data

The period under review from which the 240 cases were selected included the lock-down phase of the COVID-19 pandemic response. Of the cases reviewed, 22 (9%) of assessments recorded that COVID-19 was a factor of concern in the person's presentation. Of the cases reviewed, 4 (2%) presented with possible COVID-19 symptoms, all four patients were conveyed to ED.

Liaison with mental health professionals

The clinicians on the MHJRC would liaise with other mental health professionals during assessment when they believed this was necessary. This would be to gain additional information in relation to the patient's presentation, clarify relevant history, check whether currently open to services and assist in arranging any necessary follow up referrals needed to support the patient and avoid unnecessary conveyance to ED. This would often take place via telephone whilst on scene, or via electronic record update where available and appropriate.

Of the 240 cases reviewed, liaison with a mental health team was undertaken in 137 (57%) of cases, with 103 cases (43%) not requiring further liaison (see diagram 4 below)

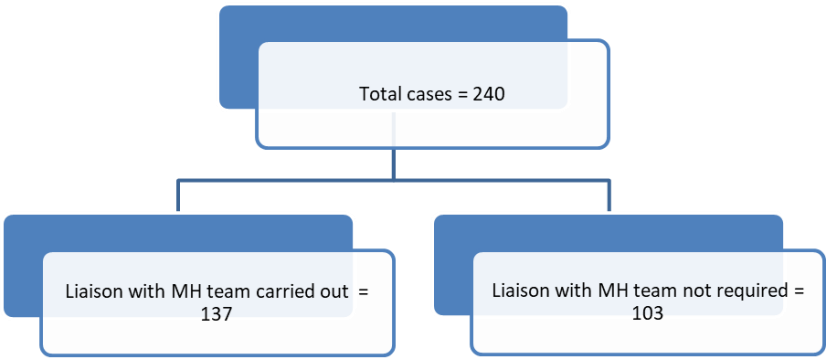


Diagram 4: Liaison with mental health team outcomes for the total cases reviewed

Liaison with police

Referrals to the MHJRC occasionally came via the Police Service, with the police often already on scene when the MHJRC team arrived. Of the 240 cases reviewed, 85 (35%) involved Police contact, either at point of referral (via 999) or at the scene.

Discussion

The case review sample appeared to be similar to the overall cases seen by the MHJRC in the evaluation period in terms of demographics and conveyance rates.

The case reviews allowed a more detailed evaluation of the patients seen by the MHJRC, their underlying health issues and the factors that might influence conveyance to ED.

From the cases sampled, psychosis, risk of suicide, agitation, self-harm and confused behaviour appeared to be associated with higher rates of conveyance. The sample size was relatively small so some caution is needed in drawing general conclusions, but this is consistent with the typical presentations that would require urgent assessment and treatment from acute psychiatric services.

Two out of six patients with a learning disability out of the total 240 cases reviewed were conveyed to ED, representing a higher conveyance rate for this group. Although the sample size was very small this outcome is consistent with the clinical leads experience of the challenges of supporting this cohort at the scene.

It is important to note that in 22 of the 55 cases (40%) who were conveyed to ED this was due to a physical health reason that the paramedic could not manage at the scene. It shows that a significant proportion of conveyance is due to physical health reasons and providing evidence for the advantage of a joint physical and mental health response The frequency of involvement of police, rates of safeguarding concerns, high level of underlying severe mental illness and co-morbid physical health problems and substance misuse suggests that the MHJRC is often dealing with highly complex cases often with multiple agencies involved requiring a significant level of experience on the part of the clinicians in the MHJRC.

The case reviews were sampled during the COVID-19 pandemic and included the lockdown period. In is unclear what impact this had on the LAS call rates for mental health issues and whether the types of calls differed during this period.

Summary

- The frequency of involvement of police, rates of safeguarding concerns, high level of underlying severe mental illness and co-morbid physical health problems and substance misuse suggests that the MHJRC is often dealing with highly complex cases often with multiple agencies involved requiring a significant level of experience on the part of the clinicians in the MHJRC.
- The case reviews were sampled during the COVID-19 pandemic and included the lockdown period. In is unclear what impact this had on the LAS call rates for mental health issues and whether the types of calls differed during this period.
- A significant majority of patients appeared to have a previous mental health history and that the majority were reported to be under the care of Mental Health services at the time of the call-out.
- Most patients (77%) in the case review samples were managed at the scene without the need for conveyance to ED.
- The most common category of presentation as assessed by the car staff were related to suicidality or psychotic illness which are often psychiatric emergencies and require immediate assessment and management. The case reviews suggested that these presentations may increase the risk of conveyance, as might self-harm, agitated behaviour and any underlying learning disability.

5. Data analysis and Economic case

Background

A six-month pilot of the Mental Health Joint Response Cars (MHJRC), was carried out in South London in 2018/19. That pilot indicated that the MHJRC service provided increased patient experiences and was good value for money. As such, a new pilot was implemented, extended to the whole of the London region, to determine whether the benefits would also be applicable in different geographic and demographic areas. This analysis covers the extended, London wide pilot only.

Aims of the analysis

The object of the analysis is to illustrate:

1. The year on year increase in responses to mental health related calls.
2. The differences in response outcome between the MHJRC and normal ambulance vehicle 'business as usual' (BAU) covering mental health related incident responses.
3. The intrinsic benefits to the patient and cost savings of the service.

Method for analysis

- Data was provided by London Ambulance Service (LAS) for responses to mental health related incidents between March 2017 and May 2020. To illustrate the comparative annual volume of call responses for the 24hr service of ambulance vehicles.

- Pilot data for the MHJRC and BAU, covering the hours of 11am to 11pm within a date range of January 19th, 2020 and April 12th 2020. All Category 1 and Section 136 incidents were excluded from this analysis. The daily time range is restricted as the service only operates between 11am and 11pm daily. BAU for the same time range is used for comparative purposes even though the BAU service continues to respond to MH related calls outside of this time period.
- The criteria for a mental health related call is determined by an electronic triage system used by LAS and as such, all response data analysed here is based on the same call criteria. BAU also responded to these calls, but only when the MHJRC were unavailable, e.g., out on another call or on a break.
- To calculate an average cost for an ED presentation for a mental health related incident, the two highest cost HRGs were excluded along with the Emergency Dental and DOA HRGs. An average of the MFF multiplier for providers in London with an ED has also been applied to create an inclusive average cost. (see table 3)
- The extrapolation of the data is based on the number of weeks the cars piloted within each London Sector, multiplied by the number of weeks in the year, to show a full 12-month projection.
- The analysis shows the responses by London Sector. Each Sector had one MHJRC except for South East London that had two.

Cost Item Description	Calculated Cost	Unit Coverage	Source	Calculation Description
Average cost of ED Attendance	£193	Per ED Attendance	National Tariff Payment System 2019/20	Average of all national tariffs for ED minus the two highest charges, dental and DOA. An Average of the MFF for London providers with an ED was also applied.

Table 3: Cost for the ED attendances applied to the data

Historical Data Analysis

The following process charts illustrate the year on year activity for incident responses relating to mental health. Chart 1 showing total MH related responses, with Chart 2 and Chart 3 showing that data spilt into the response outcomes of See & Treat and See & Convey.

- Chart 1 shows that the overall activity for mental health related calls has increased over the period.
- It is evident that there is a proportion shift between See & Treat responses (Chart 2) and See & Convey responses (Chart 3) indicating that more people are being treated in situ than conveyed to providers.
- The dips for both See & Convey and See & Treat outcomes in March 2020 are due to the COVID-19 outbreak and the spike for April-May for See & Treat, reflects the MHJRC's capability of treating mental health responses in situ and only conveying MH patients with a physical emergency to the emergency departments

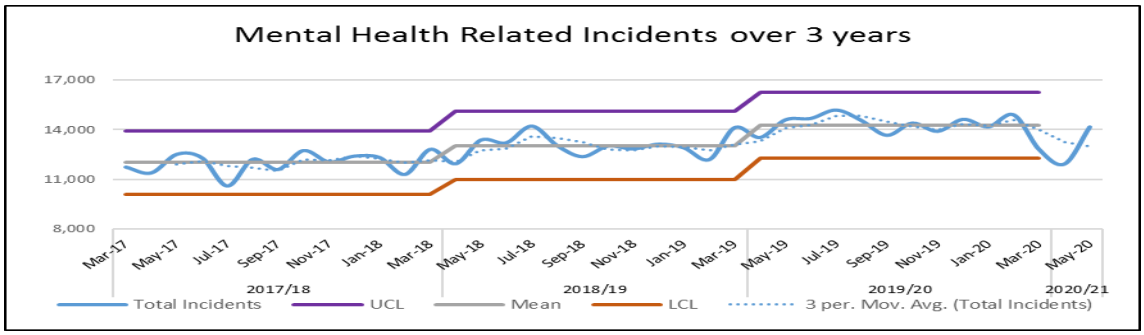


Chart 1: Average (mean), upper (UCL) and lower (LCL) control limits calculated from total Incidents over the 3 years.

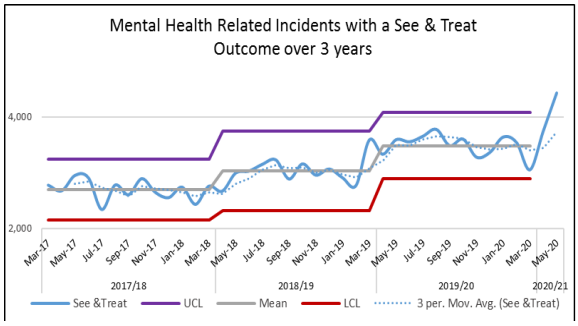


Chart 2: Average (mean), upper (UCL) and lower (LCL) control limits based on total See & Convey Incidents.

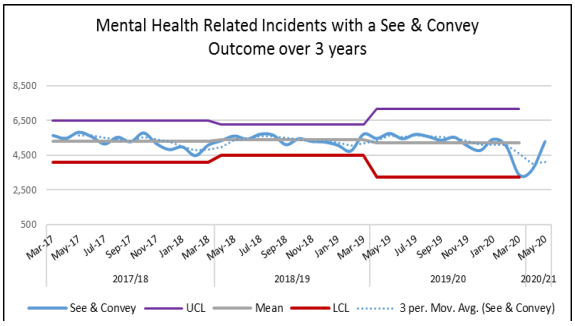


Chart 3: Average (mean), upper (UCL) and lower (LCL) control limits based on total See & Treat Incidents

In Table 4, below, figures show that during the 3 years, the See & Treat incidents have steadily increased and the See & Conveyed has decreased overall. As these overall figures also cover the period that the MHJRC pilot was operational, it is evident that change in 2019/20 was influenced by the pilot.

	Year on Year Activity Numbers			Percentage Change Between Years		
Month	See & Treat	See & Conveyed	Total	See & Treat	See & Conveyed	Total
2017/18	32,308	63,177	95,485			
2018/19	36,426	64,445	100,871	13%	2%	6%
2019/20	41,889	62,507	104,396	15%	-3%	3%

Table 4: numbers and percentage annual split of incidents by See & Treat and See & Conveyed for MH related responses.

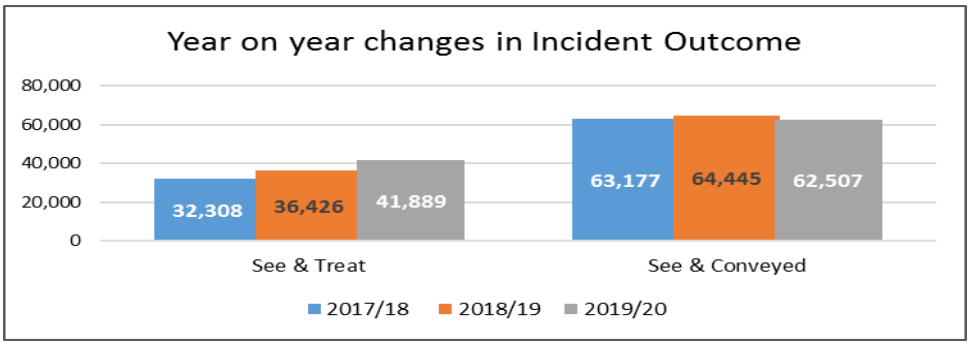


Chart 4: Year on year figures for See & Treat and See & Conveyed for MH related incidents

The chart above shows the year on year increase in response outcomes, with See & Convey in 2019/20 showing a reduction, however, this reduction was more likely due to COVID-19.

Mental Health Joint Response Cars pilot outcome – January 19th to April 12th

The following chart shows the volume of combined MHJRC and BAU incident responses during the same period, broken down by London Sector.

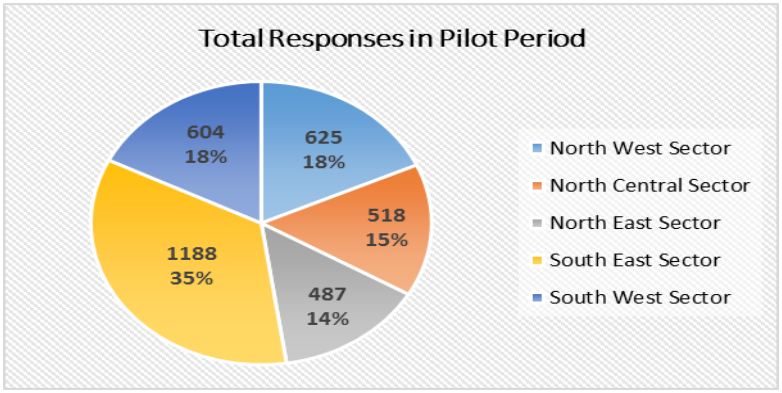


Chart 5: Total Incident Responses during the Pilot by London Sector

As South East London had two cars operating during the pilot, it increased the number of incidents they were able to attend in this sector, however, the number of BAU during this period was equally higher than the other sectors. This infers that the South East Sector has a greater number of mental health related calls than the other sectors.

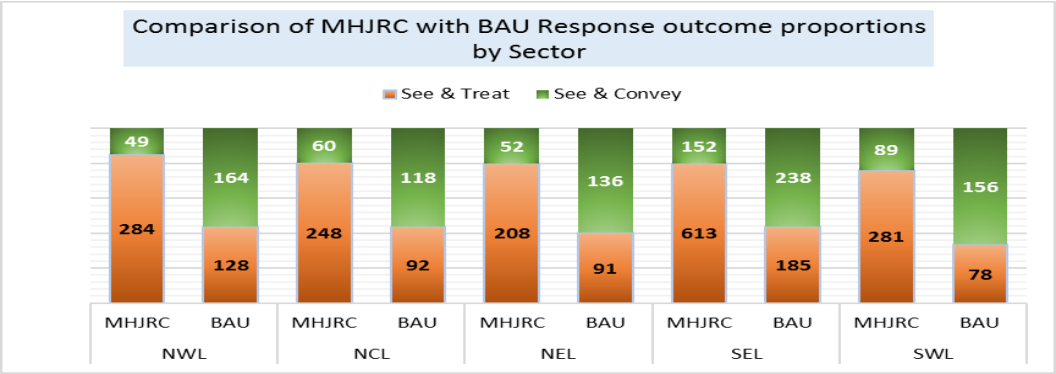


Chart 6: MHJRC and BAU outcome splits by sector

The chart above and below shows the split between See & Treat and See & Convey for each service by sector. It is clear that the MHJRC service treats more people in situ than BAU shown by a higher proportion of See & Treat (red) to See & Convey (green) compared to BAU. Percentage splits shown for the total activity by service in the table below.

	MHJRC			BAU		
Sector	**Total Incidents**	**Total See & Treat**	**Total See & Convey**	**Total Incidents**	**Total See & Treat**	**Total See & Convey**
Whole of London	100%	80%	20%	100%	41%	59%

Table 5: Percentage splits of See & Treat versus See & Convey by Service.

Sector	MHJRC			BAU		
	Total Incidents	Total See & Treat	Total See & Convey	Total Incidents	Total See & Treat	Total See & Convey
North West Sector	333	284	49	292	128	164
North Central Sector	308	248	60	210	92	118
North East Sector	260	208	52	227	91	136
South East Sector	765	613	152	423	185	238
South West Sector	370	281	89	234	78	156
Grand Total	**2036**	**1634**	**402**	**1386**	**574**	**812**

Table 6: MHJRC and BAU activity for MH related incidents conveyed to ED during the pilot

Table 6 further demonstrates that the volume of 'See & Convey' incidents is much lower for the MHJRC than for BAU.

Consequently, Table 7 below, shows the activity levels for the See & Conveyed to the ED, with the average costs of ED attendances applied.

The cost for ED attendances conveyed by MHJRCs was £71k less than BAU during the pilot period, even though MHJRC responded to 650 (32%) more mental health related incidents.

Sector	MHJRC			BAU		
	See & Convey	See & Convey to ED	Average Cost applied to the ED attendances	See & Convey	See & Convey to ED	Average Cost applied to the ED attendances
North West Sector	49	42	£8,106	164	144	£27,792
North Central Sector	60	52	£10,036	118	103	£19,879
North East Sector	52	49	£9,457	136	119	£22,967
South East Sector	152	114	£22,002	238	211	£40,723
South West Sector	89	79	£15,247	156	128	£24,704
Grand Total	**402**	**336**	**£64,848**	**812**	**705**	**£136,065**

Table 7: MHJRC and BAU activity for MH related See & Convey incidents, those conveyed to ED and priced up with an average ED tariff during the pilot. **Note**: not all patients were conveyed to ED

Extrapolations for a Full Year effect

All projections are straight line calculations based on the number of weeks that each STP Sector was involved in the pilot. To elaborate, calculations are the number of incidents, divided by the number of weeks in the pilot, then multiplied by 52 for the number of weeks in the year. This methodology was applied to all data projections.

Sector	Number of weeks	MHJRC			BAU		
		Projected Total Incidents	Projected See & Treat	Projected See & Convey	Projected Total Incidents	Projected See & Treat	Projected See & Convey
North West Sector	10	1732	1477	255	1518	666	853
North Central Sector	10	1602	1290	312	1092	478	614
North East Sector	10	1352	1082	270	1180	473	707
South East Sector	13	3060	2452	608	1692	740	952
South West Sector	13	1480	1124	356	936	312	624
Grand Total		**9225**	**7424**	**1801**	**6419**	**2669**	**3750**

Table 8: MHJRC and BAU activity for MH related incidents during the pilot period Projected forward 12 months. The projected volume of 'See & Convey' incidents is much lower (52%) for the MHJRC than for BAU.

		MHJRC			BAU		
Sector	**Number of weeks of pilot**	**Projected See & Convey**	**Projected See & Convey to ED**	**Projected Avg Cost applied to the ED attendances**	**Projected See & Convey**	**Projected See & Convey to ED**	**Projected Avg Cost applied to the ED attendances**
North West Sector	10	255	218	£42,151	853	749	£144,518
North Central Sector	10	312	270	£52,187	614	536	£103,371
North East Sector	10	270	255	£49,176	707	619	£119,428
South East Sector	13	608	456	£88,008	952	844	£162,892
South West Sector	13	356	316	£60,988	624	512	£98,816
Grand Total		**1801**	**1516**	**£292,511**	**3750**	**3259**	**£629,026**

Table 9: MHJRC and BAU projections showing See & Convey with the Conveyed to ED priced at an average ED attendance cost these projected costs indicate a potential £336,515 saving from ED attendances. Note: not all patients are conveyed to ED

Sector	**Projected See & Convey**	**Projected See & Convey to ED**	**Projected Avg Cost applied to the ED attendances**
North West Sector	1108	967	£186,670
North Central Sector	926	806	£155,558
North East Sector	978	874	£168,605
South East Sector	1560	1300	£250,900
South West Sector	980	828	£159,804
Grand Total	**5551**	**4775**	**£921,536**

Table 10: Projections of combined MHJRC and BAU data for See & Convey, Conveyances to ED and the Conveyed to ED priced at an average ED attendance cost

Table 10 above, shows the total combined MHJRC and BAU mental health related response activity for See & Convey, those conveyed to ED and conveyed to ED with an average ED attendance tariff applied, extrapolated for 12 months. The figures are as per table 9 but combined to show an overall picture for mental health related conveyances to ED.

Projected potential savings over 12 months

To illustrate the reduced costs of providing a MHJRC service for mental health related incidents, the following scenarios look at:

- Scenario 1 - the cost of all activity (MHJRC and BAU) if the MHJRC had been available to attend all of the incidents.
- Scenario 2 – the cost of the MHJRC attended incidents re-formulated to reflect the BAU service and respective costs.

Scenario 1 – If all incidents had been attended by the MHJRC

Sector	All See & Convey responses at MHJRC level - Projected	All See & Convey to ED at MHJRC level - Projected	Avg Cost applied to the total ED attendances at MHJRC level projected
North West Sector	650	557	£107,529
North Central Sector	539	467	£90,110
North East Sector	506	477	£92,111
South East Sector	950	713	£137,570
South West Sector	483	429	£82,779
London	**3129**	**2643**	**£510,099**

Table 11: MHJRC and BAU activity re-proportioned to MHJRC levels, combined, projected and calculated to show the costs of ED Attendances. Note: not all patients are conveyed to ED.

The table above shows all pilot activity (MHJRC and BAU) re-apportioned to match MHJRC. The MHJRC conveyed only 20% of their incidents attended, and overall, 84% of those conveyances were to the ED. These ED percentages were also applied to the apportioned incidents conveyed, to show the same proportions had all incidents been attended by the MHJRC.

Had the BAU incidents been attended by the MHJRC, the projected cost of all ED attendances **falls from £921,536 to £510,099** (subtract total in table 10 from total in table 11). That is a potential cost saving of £411,437 over the year and a 44.6%, reduction in ED conveyance.

To be noted: this is does not take into consideration the capacity of the current MHJRC, meaning that, to cover this additional work, the service would require extra MH Nurses and cars, therefore the cost of the service would need to be increased by these costs accordingly.

Scenario 2 – If the MHJRC incidents had been attended by BAU

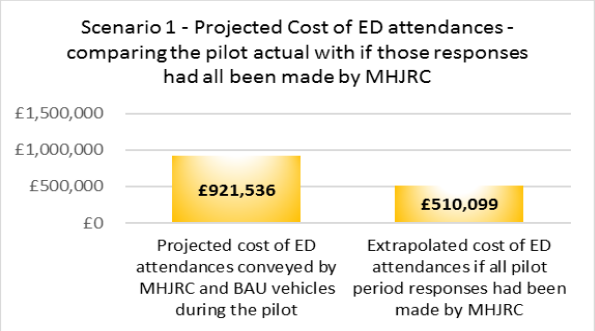
Sector	All projected See & Convey responses at BAU level	All Projected See & Convey to ED at BAU level	Avg Cost applied to the total ED attendances at BAU level projected
North West Sector	1724	1514	£292,174
North Central Sector	1374	1200	£231,551
North East Sector	1345	1177	£227,195
South East Sector	2399	2127	£410,426
South West Sector	1287	1056	£203,833
London	**8130**	**7073**	**£1,365,179**

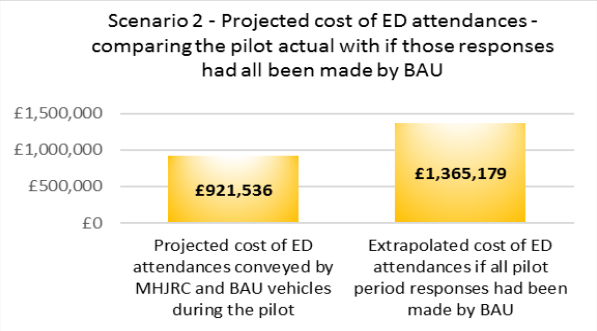
Table 12: BAU and MHJRC activity re-proportioned to BAU levels, combined, projected and calculated to show the projected costs of ED attendances if the MHJRC had not been piloted. **Note: not all patients are conveyed to ED**

Table 12, above, shows the total mental health related incident responses for See & Convey and See & Convey to ED, with MHJRC activity re-apportioned to match BAU activity, extrapolated to show a full year effect (BAU conveyed 59%). This indicates that the total projected cost of ED attendances from mental health related conveyances if the MHJRC had not piloted is an estimated £1.37m.

When MHJRC activity was re-proportioned as BAU incidents, the resulting ED attendances would cost 152% more than it did as carried out by the MHJRC.

If the MHJRC had not piloted, the number of projected ED attendances for mental health related incidents that the BAU vehicles would convey over a 12-month period is approximately £1.37m.





Charts 7 & 8: Scenario 1 showing the extrapolated cost of ED attendances (in table 11) where all responses during the pilot period were made by MHJRC and Scenario 2 all responses during the pilot were made by BAU.

Caveats:

It should be noted that the pilot period was not a typical Q4 period due to the COVID-19 outbreak so it should be noted that projection of the activity and costs presented here may be atypically low.

It is also important to note that the financial evaluation does not represent the full cost of delivering the pan-London MHJRC service. As part of the next phase of this work, LAS, Commissioners and Mental Health Providers will ensure that a fully costed model is developed, which incorporates all non-pay costs such as:

- Mandatory LAS training, clinical supervision and line management
- Uniforms
- Additional vehicles and equipment

Conclusions

From the above investigations, we can conclude there are several benefits from running Mental Health Joint Response Cars.

During the pilot of the MHJRC across London, it was apparent that there were savings made by the reduction in conveyances costs to the Emergency Departments and the subsequent cost of the reduced ED attendances. This was due to the presence of the MH Nurse in the car being qualified to carry out appropriate assessments and treat the patient in situ where possible. This would not have been possible if attended by BAU vehicles.

Treating the patient in situ or conveying them directly to a mental health service must create a better experience for the patient experiencing a mental health crisis, as they receive their care more quickly and in a more appropriate setting.

Finally, the MHJRC were able to redirect the flow of patients appropriately away from the ED during the COVID-19 outbreak. Except in circumstances where patients required physical health related care, the MHJRC were able to keep a very vulnerable cohort of patients away from the Emergency Departments, reducing the risk of nosocomial infection in people who may find it more of a challenge to self-isolate or adhere to social distancing measures.

Analysis to show whether patients receiving a See & Treat response from the MHJRC or BAU went on to attend an ED within 7 days of their contact with the car

Methodology

The NHS numbers were provided by LAS and pseudonymised. That data was then linked with the national Emergency Care Data Set (ECDS) and Mental Health Services Data Set (MHSDS) with the aim of understanding whether patients presented to ED within 7 days of receiving a See and Treat intervention.

Total record sample supplied for analysis for the period of January 19th to April 12th 2020.

Records supplied by LAS	Number
Total LAS Records	2011
Total LAS Records with NHS number (usable)	1590
Unusable LAS Records (No NHS No.)	421

Table 13: Record breakdown for analysis

Of the data supplied, 421 records were not usable because:

1. LAS were not able to obtain the NHS number
2. Patients had opted out of personal data use at a national level

The sample data supplied is for mental health related incidents attended by the MHJRC and the BAU control group.

Response Vehicle Type	NHS Number present	Total	Percentage of NHS Numbers
MHJRC	NHS Number	1291	90%
	No NHS Number	140	10%
MHJRC Total		**1431**	
BAU	NHS Number	299	52%
	No NHS Number	281	48%
BAU Total		**580**	
Total		**2011**	
Total usable records		**1590**	

Table 14: Number of records split between the MHJRC and BAU, showing usable and non-usable breakdown.

Table 14 shows that only 10% of the NHS numbers related to patients seen by the MHJRC were unable to be used for analysis purposes, whereas 48% of the BAU were unable to be used. As such, the total number of records used in the analysis was 1590.

Demographics

Of the 1590 patients in the usable sample, only one was not previously or currently known to MH services.

Table 15 below, shows the figures for the gender and age-band split. The total figures do not add up to 1590 as some of the patients were seen by LAS on more than one occasion during the period and so are only counted once here.

Age band breakdown by Gender

Response	Age Band	Female	Male	Unspecified	Total
MHJRC	0-18 yrs	60	39		99
	19-24 yrs	70	48		118
	25-64 yrs	454	365	3	822
	65+ yrs	53	32		85
MHJRC Total		**637**	**484**	**3**	**1124**
BAU	0-18 yrs	1			1
	19-24 yrs	12	14		26
	25-64 yrs	99	90		189
	65+ yrs	28	20	1	49
BAU Total		**140**	**124**	**1**	**265**
Total		**777**	**608**	**4**	**1389**

Table 15: Age band and gender by LAS response service.

Gender and Age Pie Charts – MHJRC and BAU data combined

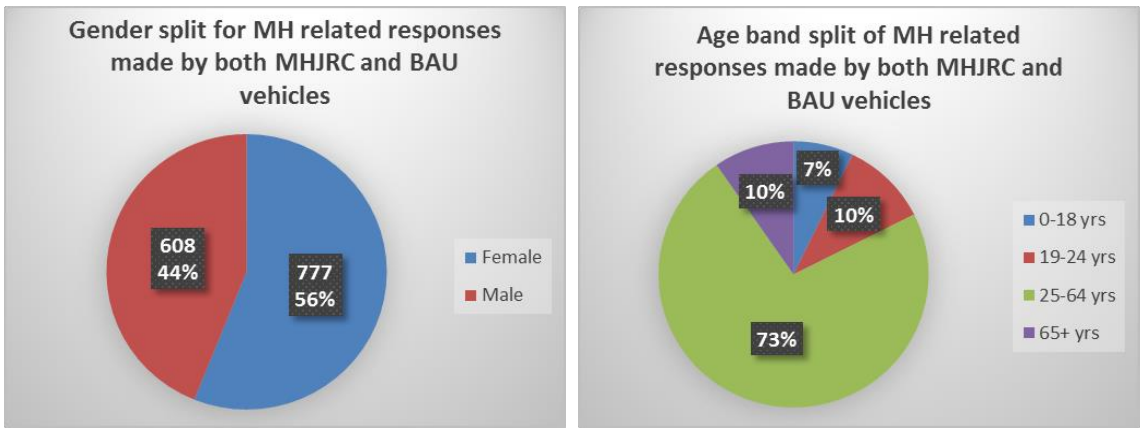


Chart 9 and 10: pie charts showing visual representation of the gender split and Age band split respectively, as per Table 15.

Ethnicity

The table below best captures the ethnicity mix based on the records from both ECDS and MHSDS datasets.

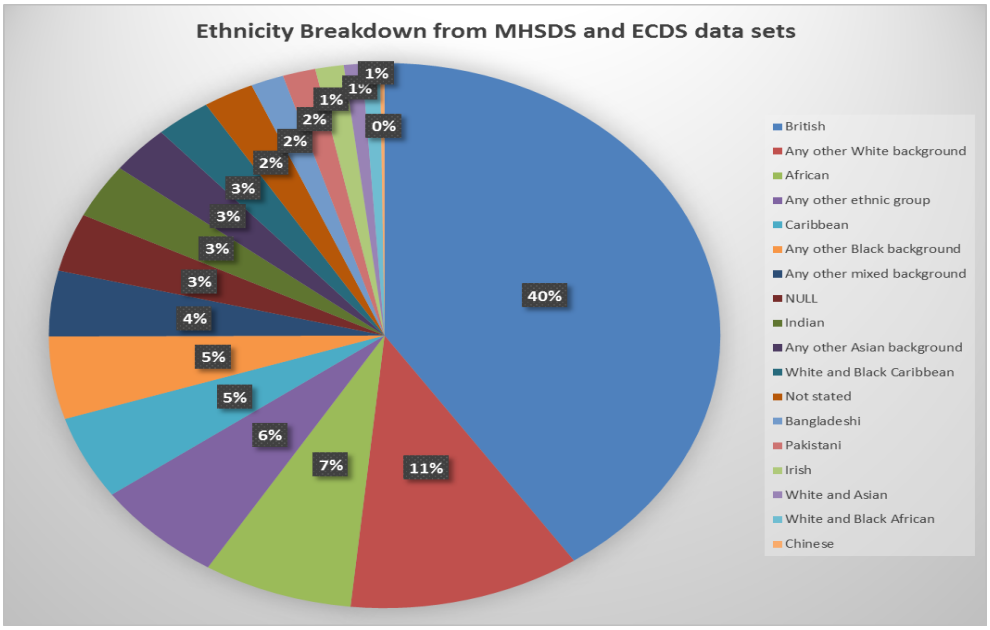


Chart 11: Ethnicity breakdown for data where stated

See and Treat Response outcome for MHJRC

The purpose of the analysis is to look at the See & Treat responses and establish whether the patients attended ED within 7 days of receiving of an intervention. The charts below show the results of linking the LAS sample data to the ECDS by pseudo NHS number, split by MHJRC and BAU.

The data for the above charts and tables is based on the 1590 usable records – however this includes See & Treat and all See & Convey incidents. For the purpose of this next section, **only 1187 records for the See & Treat activity has been used.**

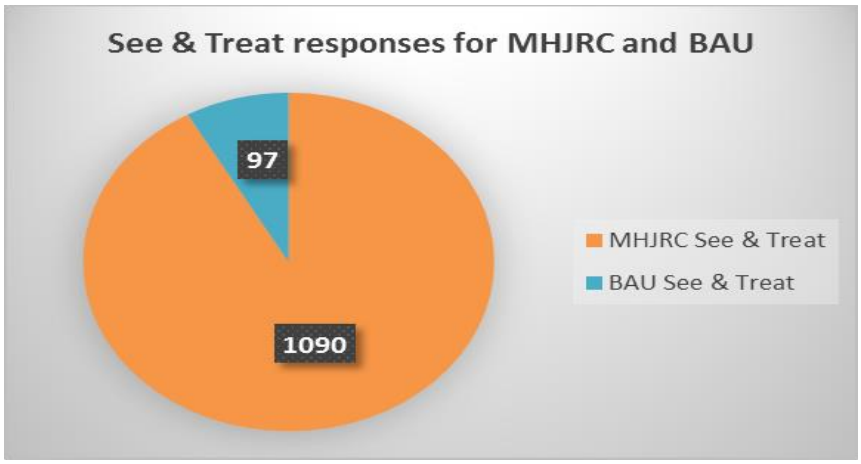


Chart 12: See & Treat responses during the pilot period split by service

Chart 12 shows the linked sample of data that had a See & Treat incident response for both MHJRC and BAU during the pilot.

Chart 13 below shows that only a small portion (4%) of patients went on to present in ED within 7 days of a See and Treat intervention.

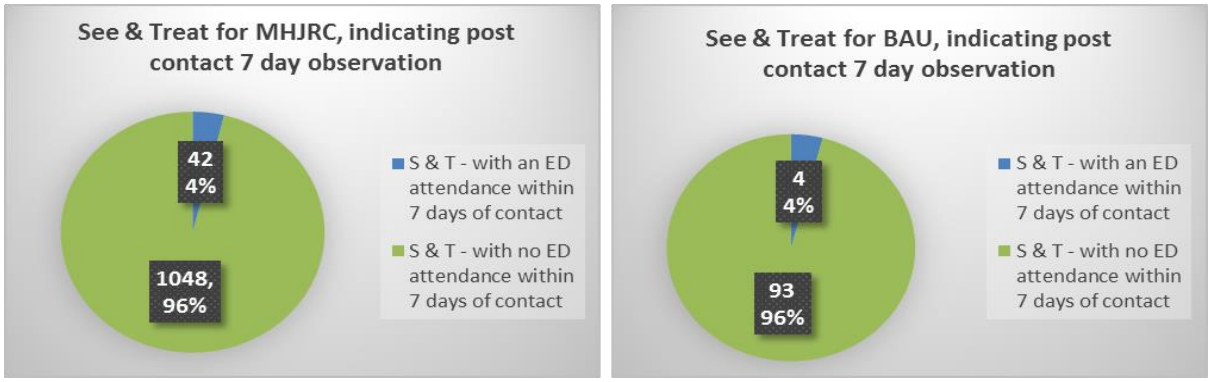


Chart 13: See & Treat – post 7 day outcome

It is to be noted that the See and Treat sample size for BAU is significantly smaller than that of MHJRC.

Summary

The majority of patients who were seen and treated, did not go on to present at an ED department within 7 days.

In light of the fact that the pilot occurred at the beginning of the COVID-19 outbreak, the above analysis further demonstrates the effectiveness of the MHJRC service in the diversion and protection of a vulnerable cohort of patients and preventing possible nosocomial contagion and subsequent transmission of the COVID-19 virus, by treating the majority of this cohort within their home environment.

6. Picker – Patient Experience Survey

Picker Institute Europe (Picker) were commissioned by Healthy London Partnership to survey peoples' experience of receiving the Mental Health Joint Response Car (MHJRC) care pathway.

Picker was commissioned to assess patient experience by conducting 50 interviews in total, split amongst multiple new IUC pathways. The allocation to the MHJRC pathway was for 10 interviews. This sample size equates to roughly 0.4% of all patients seen by the MHJRC teams during the evaluation period.

Patient experience interviews for the other services are currently on hold due to the COVID-19 Pandemic response. For the purposes of this review there was no additional patient experience data made available to compare with the LAS business as usual mental health response. Hence this section is adapted from the Picker MHJRC Summary Report (June 2020)[4].

Picker conducted ten semi-structured telephone interviews with MHJRC service users or their family members between 25 March 2020 and 7 May 2020. Most participants were recruited

[4] Picker (2020). *999/111 Integration Programme Patient Experience Evaluation.*

over the telephone after they had consented for their contact details to be passed along to Picker researchers... Feedback on patient experience of the MHJRC intervention is unfortunately very limited due to the sample size of only 10 participants. The Picker patient experience study was promoted toward the end of the MHJRC visit. People were provided with information on the patient experience study (a leaflet) during the MHJRC intervention (so during a period of crisis/mental ill-health) and asked if they would consent to be contacted by Picker. Therefore, given the nature of the MHJRC pathway and situation of the patient group at a point of crisis, providing information and/or gaining agreement to participate in the study may have been challenging. However, it should be noted that the sample interviewed was limited to 10 participants and those who took part received a £30 gift voucher.

Participant Demographics

The **10** participants ranged in age, gender and other demographics as outlined below:

Gender Male **2** Female **8**	**Region** North London **4** South London **5** Unknown **1**
Age 18-30 years **4** 41-50 years **2** 51-60 years **3** 61-70 years **1**	**Participant Type** Patient **5** Family Member **5**
Ethnicity White or White British **7** Asian or Asian British **1** Black or Black British **1** Others **1**	

Call experience

Six out of ten participants had direct experience speaking with someone from an urgent and emergency care call centre. Decisions to call 111 or the police were made when callers were not sure whether urgent medical assistance was necessary and were also influenced by the COVID-19 pandemic and a desire to avoid possible ambulance conveyance onto a hospital or to avoid burdening the ambulance system. Most callers recollected speaking to between one and three people during the call. Those that called the police were issued a mental health joint response car directly by the police and were not transferred onto another operator.

Mental Health Joint Response Car experience

Most interview participants had a positive experience with the MHJRC service. There was only one participant who reported a less satisfactory experience. Common themes arising throughout several of the interviews focused around the following areas:

Specialist skillset of MHJRC staff

Most interview participants appreciated the mixed skillset of MHJRC staff and their ability to address patients' physical and mental health needs.

> *"…the first thing they did was first of all to make sure she was in a safe space, that she was not self-harming herself or others, and then they proceeded to talk to her, and of course initially she didn't want to talk… they managed to calm her, and get her to talk a little later on, and they did the right physical checks. I thought that was very good… I thought that exemplary, that's good."* (MH28)

Participants, especially those who had been issued a more traditional paramedic team in the past, were particularly pleased with having a mental health specialist.

> *"I feel that the care that she got was superb actually. They clearly identified that obviously it was a mental health emergency, and they provided the necessary personnel to be able to deal with that, and for them to have the knowledge, and actually having a team, the usual paramedics, I'm sure, are wonderful… but having a team that's actually experienced in that, those particular symptoms, I thought was valuable really, because it meant they knew something about it, and they could properly assess what her needs were, and how she could be helped."* (MH23)

In addition, participants were pleased with the ability of MHJRC staff to de-escalate stressful situations and to create a more calming environment in which to communicate with the patient;

> *"I mean, they were really really calm, which helped, because I wasn't calm, so it was just having that calm presence and having a conversation about, sort of just talking it through"* (MH18).

Those participants who were providing care for family members or friends also felt that the team acknowledged their concerns and input:

> *"He also spoke to her about her mental health, asked her about her mental health and her thoughts and suicidal thoughts, which was very good for her. The other fellow spoke with me at length. He kind of got an understanding of the whole holistic picture, the amount of distress we were under as a family, which was really good."* (MH6)

Personalised care provided by MHJRC staff

Another common theme that arose throughout the interviews was the ability of the MHJRC staff to provide personal, yet professional, care for each patient. Participants frequently mentioned good bedside manner and feeling as though staff cared about their wellbeing:

> *"They didn't just come in quickly and leave, you know like some people can be so professional that they're quite sterile and not engaged. These people were engaged, and I think that's really important. Each person's situation is very individual to them... They had an excellent engaged manner, bedside manner, that really helps people in distress and crisis. I couldn't ask for anything more. It really helped me through a difficult time."* (MH21)

A few participants mentioned that attention to personal details helped them feel more relaxed around staff. For example, one participant mentioned how staff engaged with her cat. Similar themes arose in other interviews:

> "*The ambulance service was really nice, they were friendly. They allowed me to show them my drawings on how I was feeling, because I'm very … it's terribly difficult for me to express how I'm feeling sometimes, so I showed them my notepad with all my drawings in it, and we were making jokes and they made me feel like I was being listened to, and someone actually cared about me.*" (MH17)

Treatment within the home environment

A third major theme that arose during interviews was the convenience of being treated at home. One participant compared her experiences with being conveyed onto A&E in the past versus her more recent experience with the MHJRC:

> *"you're in a strange place in a strange room, surrounded by strangers, just paranoid, and then you've got to sit there and wait, and you just want to run away, is all you want to do, and I've done that a couple of times, and it really is awful... This system is so much better, because people who are mentally ill, you want to be in your own environment and it's not good to change out of your own environment, because they're affecting, they're doing an assessment on you. If they come and take you out of your environment to a strange place, because a lot of us have anxiety, so we don't like being moved from one place to another, it's traumatic...by the time they'd finished with me, my psychosis was really severe because I was stressed at being, having loads of people coming into my room. I had, like five people or six people came in, with the police and that, to take me to hospital the first time. That really traumatised me, so this system's brilliant. I think it's just what we need, to be honest." (MH14)*

This experience was very similar to that reported by another patient:

> *"In the past, I would go to A & E, which was always a very stressful experience, and always took much longer and much more resource than actually having that sort of, a ten-minute check-up, being calmed down in my home environment." (MH18)*

Another participant mentioned appreciating being seen at home due to the current COVID-19 pandemic and avoiding the uncertainty of catching something while in hospital.

Most participants mentioned that MHJRC staff called the patient's GP, who was then able to refer the patient onto other services such as a community mental health team. MHJRC staff also provided crisis line phone numbers and, in some instances, assisted in getting medication for the patient.

COVID-19 pandemic effects

While Picker researchers ensured that topics discussed during the interviews stayed focused on call experience, experience of the MHJRC service, and onward referral – the interviews took place at a time when London was experiencing peaks in COVID-19 cases. Therefore, some interview participants' experiences may have been influenced by perceived strains on the urgent and emergency care system. In addition, some crises may have been influenced by social isolation caused as a result of lockdown measures. It is worthwhile elucidating themes around the COVID-19 pandemic as these hold implications for the MHJRC care pathway, especially while an end date to the pandemic remains uncertain.

As mentioned previously, there was a reticence to call urgent and emergency services and some deliberation on what service to call, specifically. As one participant recalled,

> *"The only reason why I didn't call them is because, like I said, because I know they're so busy with the coronavirus and everything that's going on, I didn't want to call for that reason, but the police said to me, you need help as well, so we are going to call them" (MH19).*

Other participants were concerned that patients might be conveyed onto hospital where they could be more susceptible to catching the virus, which influenced their decisions to call the police or 111 instead of 999.

One participant mentioned that one of the ways that MHJRC staff helped her was by providing tips on how she could cope with COVID-19 since one of the major factors that led to her crisis was being isolated on her own. Another participant thought that being able to interact with a team of specialists' face to face was particularly beneficial

> *"I think especially given the current situation now, I think there was something about having actual people to talk to, not just on the phone, but I think part of what helped was just the almost positive shock of seeing an actual human being, if that makes sense?" (MH18)*

Onward referral/ follow-up service experience

While most participants had positive experiences of calling urgent/emergency services and contact with the MHJRC, experiences tended to be more mixed regarding next steps. Overall, participants felt that MHJRC staff were effective in addressing patients' urgent needs and making sure that patients were safe before leaving.

As one interview participant recalled,

> *"The paramedic and the mental health professional, they didn't do their stuff and then disappear, they basically really looked after her until she was well installed in the ambulance and looked after by the ambulance crew" (MH28).*

However, some participants were unclear about what they should do afterwards or who they should contact if they found themselves in a similar situation in the future.

Implications/recommendations

Overall, most interview participants had a positive experience with the MHJRC care pathway. As previously mentioned, participants appreciated the mixture of physical health checks combined with specialist mental health knowledge. Most participants thought that the personal, yet professional, manner of the MHJRC team was effective in resolving the immediate urgent care needs of the patients. Those patients who had mental health emergencies in the past particularly liked being treated in the home environment and viewed this as important since being in an unfamiliar environment can exacerbate symptoms and create higher anxiety levels. Face-to-face interaction with MHJRC staff was also crucial for some patients, especially those whose symptoms were made worse from social distancing measures. Finally, reassurance that 999/111 should be used if someone is experiencing a mental health crisis is warranted. As mentioned, some participants deliberated on whether

they should call 999 or 111 at all. Even after the MHJRC arrived, many participants expressed a feeling of guilt that they may have been using up ambulance time that could have been spent on someone else. Greater communication around NHS initiatives 1 to encourage people to seek the urgent and emergency care treatment they need could help.

Compliments and Complaints

In addition to the Picker patient experience report, this review looked at compliments and complaints received by LAS in relation to the MHJRC. During the period 7 compliments and complaints were received in relation to this care pathway. This is small proportion in relation to the amount of contacts the MHJRC had between January – April 2020 so is of limited analytic value. However, these compliments and complaints provide a snapshot of additional insight into patient experience of the service.

Table 16:

Source	Patient	Relative/Friend/Carer	LAS Colleague	Total
Compliment	1	1	3	5
Complaint	2	0	0	2

Table 16: Compliments and complaints received by LAS in relation to MHJRC

The compliments received from all sources noted the professionalism, support and expert guidance provided by the MHJRC clinicians. There was a sense that the response from the MHJRC improved engagement with the patient and helped ensure a more positive outcome. The 2 complaints received from patients were in relation to the attitudes of the MHJRC clinicians. Specifically, one complainant attributed their mental distress and suicidal thoughts to the current COVID-19 pandemic 'lockdown' situation. They mentioned challenges in trying to access their GP. For this patient, attending ED in order to see someone 'face to face' appeared to be an important factor – one that seems not to have been ameliorated by face to face contact with the MHJRC clinicians.

7. Staff Survey

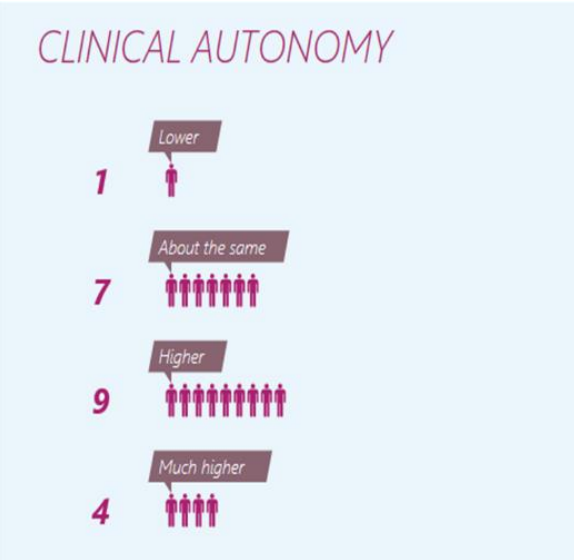
Methodology

A brief online questionnaire was devised, containing 4 core questions using a Likert type scale, 6 statements and 1 free text feedback question. The survey was sent to **26 staff** yielding a response rate of **81% (21).** The survey also sought qualitative feedback from staff[5].

12 (57%) Paramedics

9 (43%) Mental Health professionals

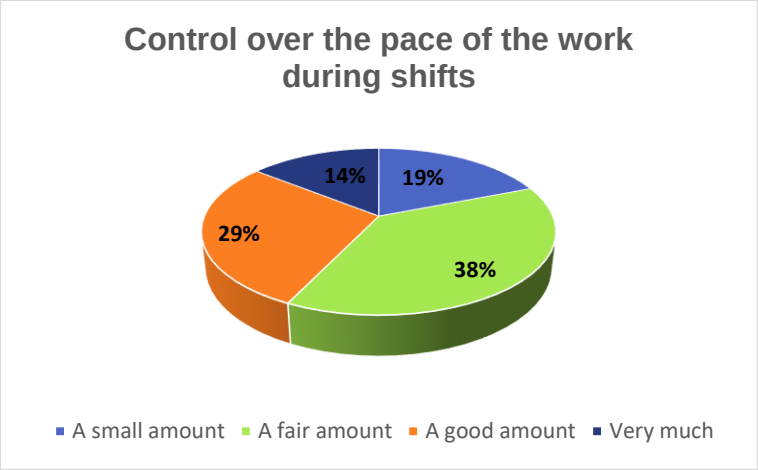
Summary of results



Professional satisfaction – 76% of respondent stated they were **"very satisfied"**.

Clinical Autonomy – comparing role with BAU role **– 62%** reported **"higher or much higher levels"** of autonomy.

5 https://forms.office.com/Pages/ResponsePage.aspx?id=kp4VA8ZyI0umSq9Q55Ctv7Qvh4xR7fxJizfcpf-0fsFUREZESUlSQVY1VkkwOU9PMFpUNlFLTE1RQi4u



Level of control – managing working day **– 42%** reported **a "good amount".**

Statement questions

Developing new skills

100% of respondents **agreed or strongly agreed** they had developed new skills.

Appropriateness of referrals

82% felt that referrals to the service were **appropriate.**
Benefits to service users - 100% of respondents **agreed or strongly agreed** that service users had benefited from accessing MHJRC staff.

Right care for patients

82% of respondents **strongly agreeing.**
Care pathways for patients more appropriate than BAU **69% strongly agree**.

Equipment/IT

28 % stated that they **did not** or were **undecided** if they had access to necessary equipment

Qualitative feedback across five areas

Job satisfaction

My secondment with the MHJRC has been the best few months of my career. It's been great to be part of such a caring a compassionate team who are so committed to patient wellbeing. I will find it very hard to go back to my core line!

This pilot lead by LAS has proved to be, on a personal and professional level, the most rewarding thing I have ever been involved in. Being able to assist people, families and carers, who come to notice via emergency services, in accessing better pathways to care, and improving their experiences of mental health services, has given me immense job satisfaction.

Learning

I am a paramedic and when I finish my secondment I know without a shadow of doubt that the skills I have learned on the MHJRC will stay with me and help me to safely assess and refer far more mental health patients avoiding ED attendances, but also I am more sure of those patients who do have to go to hospital.
It does make you think about different physical presentations that may be causing someone's MH symptoms so broadens the thought processes around symptoms

Great learning experience that all paramedics should have the opportunity to second to as my practice has improved.

Patient/family experience

I feel the joint working of the mental health nurse and the paramedic is beneficial to the patient and their family. This appears to be the least restrictive way of working with someone who is in mental health crisis both professionals can learn from each other.

Overall the MHJRC is a fantastic resource for patients dramatically reducing the needs for ED attendances and can signpost patients to the most appropriate care options at first contact. I believe we are also helping to provide intervention earlier during crisis preventing long term hospital admissions and save both large monetary costs but also personal costs for the patient.

Benefits

The addition of a registered paramedic means we can safely and appropriately leave patients at home with a level of concurrent physical illness that a mental health practitioner alone wouldn't be comfortable or qualified to decide a patient was safe to treat in the community.
I feel that this project provides a vital service for MH patients in London, providing a much less stressful experience in a tough time in their life, reducing unnecessary attendance to A&E.

Improvement

I feel that the service would be improved if some community teams/ Home treatment teams where open to direct referrals from ourselves, I feel this would enable us to safely discharge/ refer an additional patent group.
My one negative for this role comes from attending a large number of inappropriate police referrals. The police will send possible MH jobs to LAS and then send a message saying they are not attending, then on the MH car arrival we find it is not MH but something more appropriate for police to deal with.

A merged data sharing system where we can gain collateral history from multiple trusts about the wide range of patients we see in different trusts, for mental health and general medical history. Updating dispatches on the appropriate criteria to dispatch the MHJRC, and LAS frontline staff of the appropriate format in getting help or advice from mental health team. Rather than dispatching multiple resources to the same incident.

Recommendations from Staff Survey

Training

Further training of police and dispatch colleagues to improve further the levels of "appropriate" referrals.
Increase secondments of Paramedics into the role to spread the skills, knowledge and confidence that could improve the outcomes and patients experience in the BAU pathway.

Data

Improve access to systems that hold patient information both access and ability to input information.

Pathways

Increase access to range of outcomes, including direct access to Home Treatment Teams/Crisis services and referrals into other Trust services. MHJRC staff being Trust Assessors.

Overall the staff survey indicates overwhelming support for the service and staff benefited from the MHJRC pilot. The sharing of knowledge and skills and job satisfaction are key gains.

Staff report on the positive patient experience by being seen and treated in the community over transfer to an Emergency Department and the value of having a joint physical and mental health assessment. This finding mirrors the positive experience reported by patients and friends/family via the Picker interviews.

8. Findings

Patient Safety

As part of this review into the safety and efficacy of the MHJRC, serious incidents reported internally within LAS for mental health calls were reviewed. LAS incidents reported externally via STEIS during the period 13.01.20 – 26.04.20 were also reviewed.

During the evaluation period, only two serious incidents (SI's) relating to mental health were reported internally by LAS. Both related to the BAU response rather than the MHJRC intervention. There were no reported SI's for the MHJRC. LAS advise that mental health issues account for approximately 8-10% of their call volume, hence two MH related SI's during the evaluation period is not an exceptionally low number. There were 25 SI's reported externally via STEIS during the period, of which only 2 appear to be mental health related (this includes one of the internally reported incidents). Based on this limited data, the absence of any SI's relating to the MHJRC appears to suggest that this is a safe and appropriate intervention.

Limitations

A significant limitation of this review is the inability to cross reference the specific patient cohort who had contact with the MHJRC or BAU ambulance response with any associated patient safety data from their local health services. A Data Sharing Agreement would have been required between LAS, NHSE and each London MH Trust in order to obtain this information and this was not achievable within the scope of this review. Hence inferences on patient safety of the MHJRC intervention is based on LAS serious incident data and additional analyses of data pertaining to contact with other parts of the health system by the overall patient cohort.

9. Recommendations

The mental health joint response cars are far better able to treat people with mental health problems in the community and to avoid unnecessary ED attendances than a standard LAS crew. Four out of five people seen by the joint response team were seen and treated in the community, compared to two out of five under business as usual.

The combination of a skilled paramedic and mental health clinician allows a more rounded assessment of physical and mental health needs and encourages better use of mental health services available to support people in the community.

LAS call outs to people presenting with a mental health crisis result in crews seeing people with a complex mix of mental and physical health problems, often triggered by social stressors, with a significant amount of police involvement and with a range of other non-healthcare concerns present.

The staffing model of the MHJRC consists of a Paramedic and Band 7 mental health professional. There has been no opportunity to test the impact of a different staffing model and how this would impact outcomes.

Given that complexity of cases that are involved and the level of independent decision-making and often limited information that is available with regards to history and circumstance it is reasonable to assume that the enhanced skill set in the joint response cars is much better suited to this type of incident response.

The strong evidence of reduced ED attendances resulting from the joint response car model suggests that every ICS in London should fund this as an ongoing service in line with the expectations of the long-term plan.