Mental Health Joint Response Car Pilot – Evaluation Summary Report

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NHS England and NHS Improvement

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. In November 2018 LAS launched the Mental health joint response car service six-month pilot across South London. The pilot saw the pairing of a registered Mental Health Nurse alongside a paramedic in a vehicle, responding to patients who have been identified as experiencing a mental health crisis. Following on from the evaluation of the pilot, Winter Resilience Funding was allocated in 2019 to extend the pilot for a further 4 months covering the entire London Region.

In January 2020, the extended pilot was launched in which six teams of a Registered Mental Health Nurse (RMN) and a paramedic worked together to respond to calls from people experiencing a mental health crisis.

The 'mental health joint response car' pilot saw 13 mental health clinicians seconded to LAS to work alongside 22 specially trained paramedics. They ran six cars out of six bases across London from 11am to 11pm, seven days a week. The aim was to ensure patients get the right care in the right place first time.

The joint response car team is designed to use the skills of the mental health professional and paramedic to manage people safely in the community where this is appropriate. The mental health professional is able to complete a biopsychosocial assessment, formulate a risk assessment, and deliver brief psychological interventions to reduce distress. The paramedic is able to make a physical health assessment and deploy their expertise of pre-hospital care. Together, they can use their skills and knowledge to try to get the best care for the patient at the earliest point.

The pilot launched in SEL and SWL on 13 January, and in the rest of London from 3 February. The evaluation period for this report is from January to July 2020.

Key findings

Data from the period 19 January to 12 April was used to evaluate the impact of the joint response cars compared to 'business as usual' LAS crews attending incidents where mental health problems were a factor.

LAS crews operating a 'business as usual' model in this period attended 1,386 incidents where a person was presenting with a mental health problem. They took 54% of these people (812) to ED. 4% of the remaining patients were referred to a mental health pathway.

The joint response cars attended 2,036 incidents during the same period. They took 18% (402) to ED and referred 19% to mental health pathways. Job cycle time (time spent with each patient) was 98 minutes in business as usual, and 96 minutes for the joint response car.

More than **four out of five** people who were seen by the joint team of mental health professional and paramedic were seen, treated and discharged at the scene. This compares to **two out of five** people in the business as usual model.

The majority of people seen by the joint response car had a previous history of mental health problems, and 52% 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.

The people seen by the joint response car often had contact with the police (35% of cases surveyed). The clinicians also identified safeguarding concerns, underlying severe mental illness, co-morbid physical health problems, or identified problems with substance misuse.

Most patients reported a positive experience of the joint response car service, 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 staff (mental health clinicians and paramedics) was overwhelmingly positive, although this was again on a limited survey that needs to be extended. 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.

2. Background and Context

LAS responds to more than 1.9million emergency calls and attends more than 1.2million incidents every year. In 2019/20 around 168,000 calls and 105,000 incidents related to people experiencing a problem with their mental health. Paramedics receive limited formal training in caring for people with mental illness, and report lacking confidence in treating people with resulting health care needs. Mental health service pathways were often reported as being difficult to access, particularly out of hours.

In LAS' strategy for 2018-23 a series of measures were set out to improve the Service's ability to care for people experiencing a problem with their mental health. This includes demand reduction, optimising 'hear and treat' services using phone and video assessment, improving referrals to other agencies from the scene of incidents, and optimising face to face responses.

The NHS long-term plan (LTP) outlined the aim to have a programme for mental health and ambulances and stated that all STPs / ICSs were expected to invest in improving the ambulance service response to people with mental health problems. CCG baselines received funding for this purpose from 2020/21.

3. Evaluation Summary

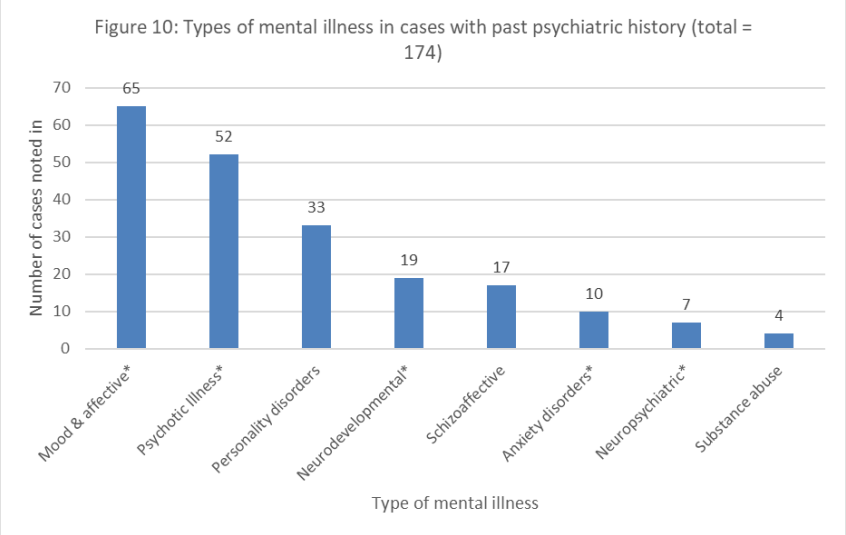
A sample of 240 patient response forms were evaluated between 13 January and 26 April (9.6% of all call outs during this period). 124 (52%) were male and 116 (48%) female, with a mean age of 40. 104 of the patients were white British, 18 were black African and 17 white other; 37 people declined to enter their ethnicity and it was not recorded in 38 cases.

For the 240 cases reviewed, 185 (77%) were treated and discharged at the scene, which is comparable to the overall six-month pilot. In 80 (43%) of these 185 cases the joint response team liaised with mental health services, with primary care or social services in 26 (14%) cases and 64 (36%) needed no further liaison. 15 (8%) declined further care.

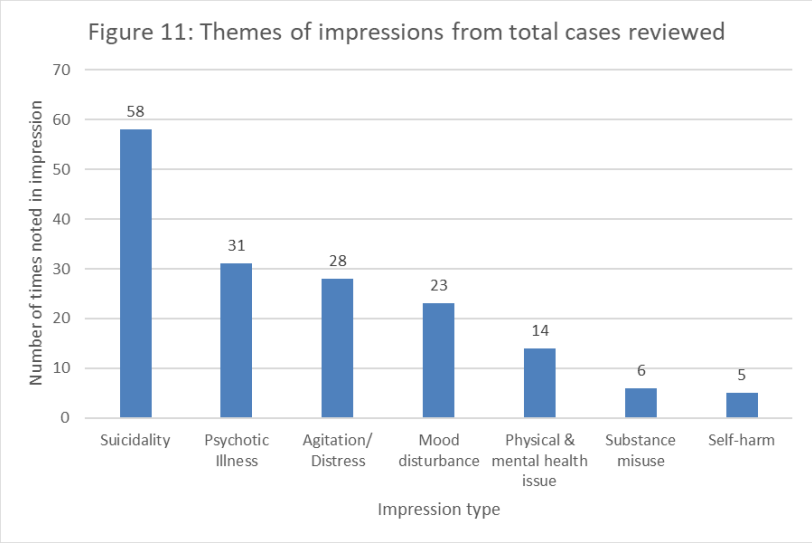
For the 55 people of the 240 who were taken elsewhere for treatment, 50 of these (90%) went to ED with the rest taken to a mental health trust service. 22 (44%) of the 50 people taken to ED were take there for a primary physical health condition which needed further treatment. Of the 240 cases reviewed, 92 (38%) were people with a history of physical health problems.

Full physical observations were carried out on 198 (83%) of the 240. 72 (30% of the total) presented as physically unwell, with a range of themes noted.

Of the 240 cases reviewed, 174 (73%) had a documented history of receiving care for mental health problems and 125 (52%) were under the current care of mental health services.



The clinicians in the joint response car noted their clinical impression of the reason for the call out. The most commonly noted themes were people with suicidal thoughts or behaviours (58), psychotic illness (31) and agitation or distress (28).



The clinicians in the joint response team assessed people for social issues, substance misuse and safeguarding concerns. Of the 240 cases reviewed, 139 (58%) were noted to have social stressors contributing to the incident. These varied widely, with common these including relationships, bereavement, housing, employment, financial problems, criminal issues, gender and sexuality, and domestic violence.

Referrals to the joint response service sometimes came via the police, and of the 249 cases reviewed 85 (35%) involved police contact.

Drugs and alcohol were noted to have been a factor of concern in 60 (25%) of the 240 cases.

Clinicians identified safeguarding concerns in 22 (9%) of cases, and safeguarding referrals are completed via LAS while on scene.

The period under review notably included the Covid-19 pandemic and lockdown. 22 (9%) of cases reviewed recorded Covid-19 as a factor of concern in the presentation. Four people (2%) had possible Covid-19 symptoms and all were taken to ED.

4. Data analysis summary

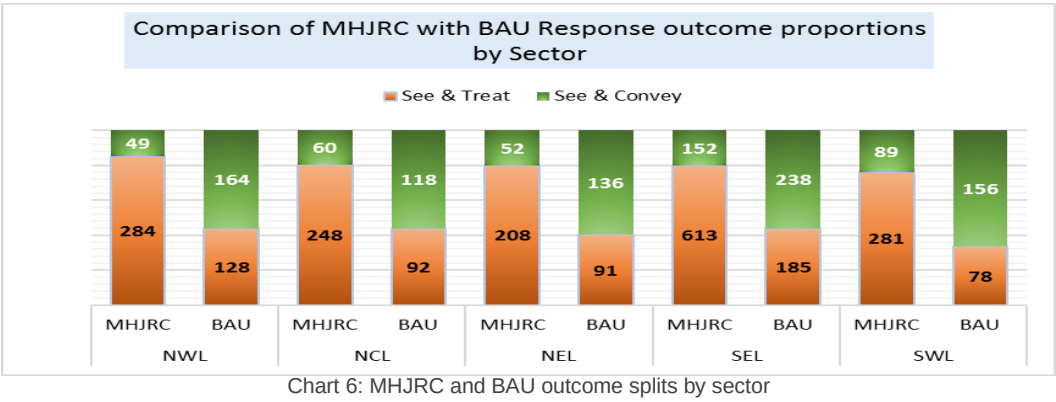


Chart 6: MHJRC and BAU outcome splits by sector

The chart above 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.
Table below shows the 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
Whole of London	100%	80%	20%	100%	41%	59%

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

The table below shows that the cost for ED attendances conveyed by MHJRCs was £71,000 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 in relation to the MHJRC.

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 Note: **not all patients were conveyed to ED**

The table 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 7 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) activity 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 total incidents 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**

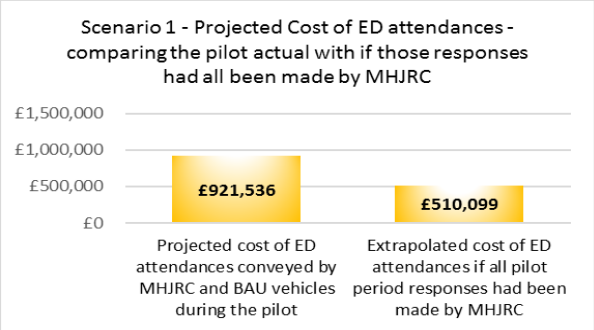
Table12: BAU and MHJRC activity re-proportioned to BAU levels, combined, projected and calculated to show the projected costs of ED attendances if the MHJRC had not been piloted. **Note: not all patients are conveyed to ED**

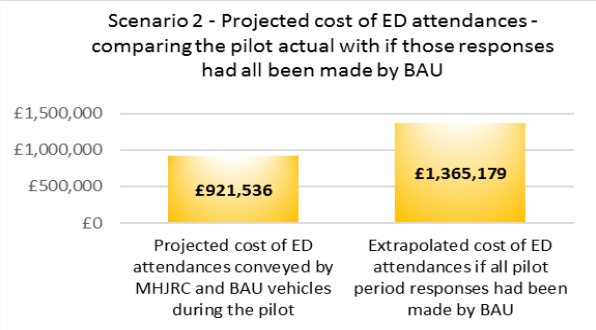
Table 12, above, shows the total mental health related incident responses for See & Convey and See & Convey to ED, with MHJRC activity re-apportioned to match BAU activity, extrapolated to show a full year effect. BAU conveyed 59%. This indicates that the total projected cost of ED

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 (table 8 & 9) 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.

Scenario 1 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.

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

Summary

We can conclude there are several benefits to having a Mental Health Joint Response Cars service. The two modelling assumptions suggest potential savings in terms of activity conveyances and associated ED costs

Treating the patient in situ or conveying them directly to a mental health service creates a better experience for patients and their family/carer, 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 patients who may find it more of a challenge to self-isolate or adhere to social distancing measures

Did patients who received a See & Treat response go on to attend an ED within 7 days of their contact with MHJRC or BAU?

Methodology

NHS numbers were provided by LAS and pseudonymised to allow for the analysis of See and Treat incidences made by the MHJRC and BAU. The data was 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.

The chart 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.

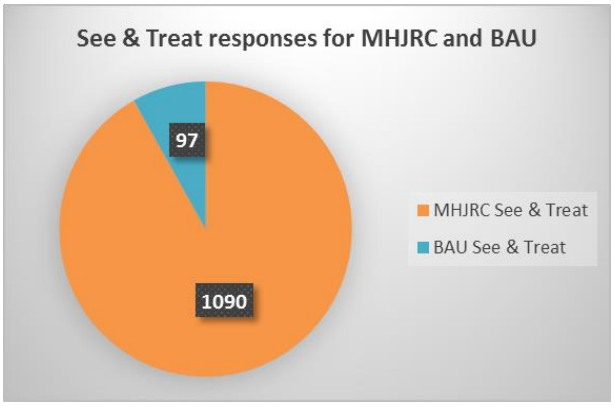


Chart 12: Total See & Treat responses from the sample size where NHS numbers were available

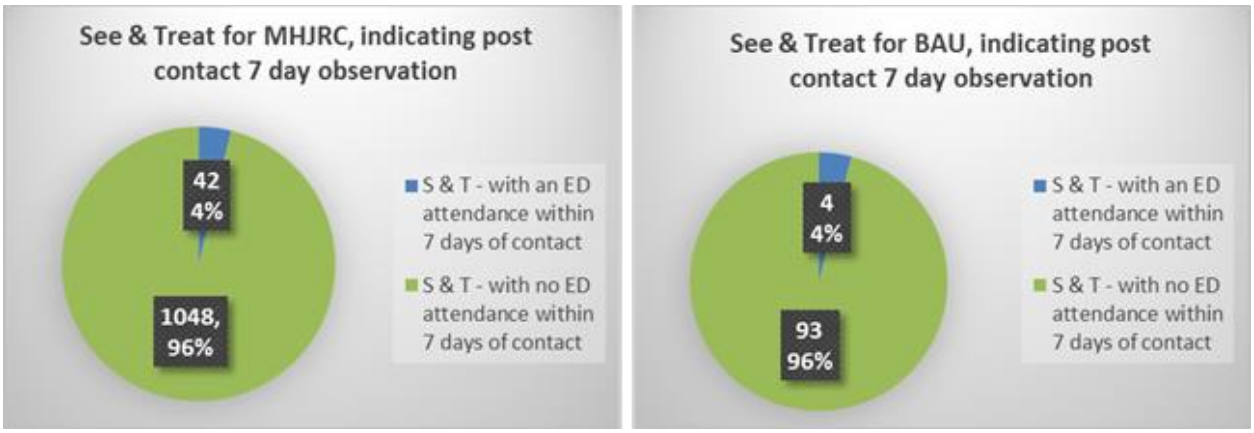


Chart 13: See & Treat outcomes – presentations to ED within 7 days for both services.

Summary

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

5. Conclusion and 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 enhanced skill set in the joint response cars is much better suited to this type of incident response.

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.

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.

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.