



Yorkshire Ambulance Service **NHS**  
NHS Trust



# Service evaluation of a triage pilot intervention for Ambulance Service patients with mental health problems

**Rachel O'Hara, Andy Irving, Maxine Johnson**

University of Sheffield

In collaboration with

**Angela Harris**

Yorkshire Ambulance Service

**June 2016**

## **CLAHRC Yorkshire and Humber**

This report presents independent research by the National Institute for Health Research Collaboration for Leadership in Applied Health Research and Care Yorkshire and Humber (NIHR CLAHRC YH). The views and opinions expressed are those of the authors, and not necessarily those of the NHS, the NIHR or the Department of Health.

[www.clahrc-yh.nihr.ac.uk](http://www.clahrc-yh.nihr.ac.uk)

## **ACKNOWLEDGEMENTS**

The authors would like to thank the staff who participated in this evaluation and Kieran Baker, Yorkshire Ambulance Service, for providing the quantitative data. Thanks also to Suzanne Mason and Colin O'Keefe, CLAHRC Yorkshire & Humber Avoidable Admissions and Attendances theme, and Leeds Research Capability Funding for supporting this evaluation.

# Contents

<b>Executive Summary</b> .....	<b>4</b>
<b>1 Introduction</b> .....	<b>6</b>
<b>2 Method</b> .....	<b>7</b>
2.1 Qualitative evaluation .....	7
2.1.1 Evaluation design.....	7
2.1.2 Recruitment and sampling .....	7
2.1.3 Data Analysis .....	8
2.2 Quantitative evaluation.....	8
2.2.1 Data Analysis .....	9
2.3 Research ethics and governance.....	9
<b>3 Findings</b> .....	<b>9</b>
3.1 Qualitative evaluation .....	9
3.1.1 Perceived need for specialist mental health triage.....	9
3.1.2 Initial implementation.....	10
3.1.3 Positive perceptions .....	12
3.1.4 Negative perceptions .....	15
3.1.5 Interface with other initiatives.....	17
3.1.6 Ongoing development and challenges.....	19
3.2 Illustrative cases of mental health nurse activity.....	21
Case 1: Mental health knowledge, skills, and communication .....	21
Case 2: Reducing unnecessary conveyance to ED.....	21
Case 3: Supporting complex mental capacity judgements .....	22
Case 4: Supporting the management of frequent callers .....	22
3.3 Quantitative evaluation.....	23
3.3.1 Service responses for calls triaged by mental health nurses .....	23
3.3.2 Service responses for mental health nurse triage by AMPDs category .....	25
3.3.3 Service responses for AMPDS card 23 and 25 calls by type of triage .....	27
3.3.4 Ambulance service responses before and after mental health nurse triage.....	28
<b>4 Discussion</b> .....	<b>30</b>
4.1 Qualitative findings .....	30
4.2 Quantitative findings.....	32
4.3 Limitations of the evaluation .....	33
4.4 Further evaluation and research.....	34
<b>5 Conclusion</b> .....	<b>35</b>
<b>6 References</b> .....	<b>36</b>
<b>7 APPENDICES</b> .....	<b>37</b>
Appendix 1: Interview topic guide .....	37
Appendix 2: Information Sheet .....	38
Appendix 3: Consent form.....	39
Appendix 4: AMPDS card categories for calls triaged by mental health nurses .....	40
Appendix 5: Outcomes relating to MH triage nurse activity: AMPDS card 23 and 25.....	41
Appendix 6: Data for calls before and after mental health nurse triage: card 23 and card 25 .....	42
Appendix 7: Conveyance before and after mental health nurse triage: card 23 and card 25.....	44
Appendix 8: Perceptions of mental health triage organised by staff role .....	45

## List of tables

Table 1: Details of the staff interviewed .....	8
Table 2: Data relating to MH triage nurse activity: All calls triaged.....	23
Table 3: Mean ambulance response rates before and after mental health nurse triage .....	29
Table 4: Main themes identified by interviews.....	30
Table 5: Outcomes related to calls triaged by MHN, AMPDS card 23 only.....	41
Table 6: Outcomes related to calls triaged by MHN, AMPDS card 25 only.....	41
Table 7: Outcomes related to calls triaged by MHN, 'other' cards (excluding card 23 and 25) .....	41
Table 8: Data for response to all calls with AMPDS card category 23 (April 2014 - December 2015)....	42
Table 9: Data for response to all calls with AMPDS card category 25 (April 2014 - December 2015)....	43

## List of figures

Figure 1: Types of mental health related calls and response options.....	11
Figure 2: Call from patient experiencing mental health problems - typical patient flow.....	11
Figure 3: Ambulance dispatch for all calls triaged by mental health nurses.....	24
Figure 4: 'Hear and treat' responses to all calls triaged by mental health nurses.....	24
Figure 5: Conveyance rate for triaged calls that resulted in an ambulance response .....	25
Figure 6: Conveyance rate for all calls triaged by mental health nurses .....	25
Figure 7: Comparison of Ambulance response rates for calls by AMPDS card category .....	26
Figure 8: Comparison of conveyance rates for calls receiving an ambulance response by AMPDS card category.....	26
Figure 9: Comparison of conveyance rates for all triaged calls by AMPDS card category.....	26
Figure 10: Comparison of Ambulance response rates for AMPDS card 23 and 25 calls .....	27
Figure 11: Comparison of conveyance rates for AMPDS card 23 and 25 calls receiving an ambulance response .....	27
Figure 12: Comparison of conveyance rates for AMPDS card 23 and 25 calls.....	28
Figure 13: Run chart for calls receiving an ambulance response: AMPDS cards 23 and 25 .....	29
Figure 14: Run chart for calls conveyed following ambulance response: AMPDS cards 23 and 25 .....	44
Figure 15: Run chart for total calls resulting in conveyance: AMPDS cards 23 and 25.....	44

## Executive Summary

### Aim

The aim of this evaluation was to explore the impact, views and experiences of implementing an on-going initiative in Yorkshire Ambulance Service NHS Trust, utilising specialist triage by mental health nurses in the Emergency Operations Centre (EOC).

### Objectives

Specific objectives were:

1. To gain insights into staff perceptions and experiences of specialist triage in relation to its implementation and impact on the delivery of care for patients with mental health problems.
2. To explore the impact of mental health nurse triage on ambulance service responses, in particular the impact of hear-and-treat on reducing ambulance dispatch.

### Method

An exploratory mixed methods evaluation involved semi-structured qualitative interviews with a range of staff involved in developing and delivering the mental health nurse triage initiative. Analysis of computer aided dispatch (CAD) data examined service responses for patients receiving specialist triage by mental health nurses.

### Key Findings

- Key drivers for the introduction of specialist triage by mental health nurses in EOC were identified as managing the increased demand relating to mental health problems and a lack of alternative care options other than conveyance to emergency departments.
- Initial implementation was conducted quite rapidly and the approach is still evolving but the systems in place to ensure the safety of patient care appear to have been effective in identifying potential problems (e.g. insufficient attention to physical health assessment).
- The speed of implementation appears to have been challenging and despite efforts to promote the initiative amongst staff, communication did not seem to keep pace with developments and appeared to be a source of frustration for staff.
- Staff felt that experiences of ambulance service care for patients, relatives and carers would be improved due to the availability of specialist expertise in managing mental health patients and in communicating with external services (e.g. crisis teams). However, the experiences of patients, relatives and carers were not specifically explored in this evaluation.
- Staff involved in the frequent caller programme acknowledged the role that the nurses play in helping to manage patients with complex mental health needs.
- The perceived effectiveness of the mental health nurse triage scheme is attributed to the nurses' established contacts and their ability to communicate inter-professionally with staff in mental health services.
- Staff reported enhanced awareness of mental health issues, as well as improved working relationships and morale amongst those directly involved in managing patient calls.

- The majority of the 3983 calls triaged by the mental health nurses (April - December 2015) were from Advanced Medical Priority Dispatch System (AMPDS) card categories 23 (overdose/poisoning) and 25 (psychiatric/ suicide).
- As the number of calls triaged increased over the nine month period, the proportion of card 23 and 25 calls decreased, with more calls originating from across 22 'other' AMPDS card categories.
- Analysis of available computer aided dispatch (CAD) data indicates that rates for (a) ambulance dispatch and (b) total cases conveyed were lower for calls triaged by the mental health nurses.
- For cases where an ambulance was dispatched, the rate of conveyance for calls triaged by the mental health nurses was higher than for calls not receiving specialist triage.

## 1 Introduction

Available evidence highlights the need for a greater understanding of the extent and nature of demand for emergency care by patients with mental health problems, including how this demand is currently being managed. Addressing this need is vital to support improvements in the delivery of care for this patient population. It is difficult to currently understand the extent of pre-hospital emergency care use by mental health patients as ambulance patients are generally categorised on the main physical cause of the emergency call and therefore a proportion of these patients will have an underlying mental health condition. However, available evidence indicates that approximately 6% of ambulance service calls are coded as mental health related, rising to 10% when those categorised according to a physical problem are included [1, 2].

There is evidence that experience of Emergency Department (ED) care for some mental health patients is poorer than that for other patients, with disproportionately longer waiting times and negative experiences for mental health patients [3]. A recent Care Quality Commission (CQC) report exploring lived experiences of people during a mental health crisis highlights “variation and inconsistency in the quality of care received” [4, p6]. The CQC report shows that 42% of respondents felt they had not received “the right response” to help resolve their mental health crisis [4, p7].

While the ED may be the appropriate destination for some patients with mental health related problems, it is likely that many would benefit from alternative care pathways. Ambulance services do operate patient pathways for patients with specific condition or presentations such as older fallers and COPD, to ensure more appropriate care closer to home and timelier referral to appropriate professional care [5]. However, lack of access to alternative services or community resources has been identified as a key reason that patients are often conveyed to ED when this might not be considered the most suitable option [6]. Alternative pathways of care for patients with mental health problems were identified as particularly problematic due to limited and inconsistent alternative pathways, particularly ‘out of hours’ [6].

In mid-December 2014 Yorkshire Ambulance Service (YAS) employed mental health nurses to support front-line clinicians in the Emergency Operations Centre (EOC) for various shift patterns over the Christmas period to “better manage” demand and “improve patient experience and outcomes” for patients with mental health issues [7, p2]. The nurses were funded initially by YAS and subsequently by winter funds from Barnsley CCG. It was concluded that the presence of mental health nurses in the EOC resulted in a lower conveyance rate and continuation of this approach was recommended to permit more evidence to be collated [7]. Further funding was secured from Barnsley CCG to implement mental health nurse triage in the EOC on an ongoing basis from April 2015 with a view to the possibility of this provision forming part of the core YAS contract in future.

At the same time researchers from the University of Sheffield were funded via the CLAHRC Yorkshire & Humber Avoidable Admissions and Attendances (AAAs) theme and Leeds Research Capability Funds to explore pre-hospital care for patients in the Y&H region presenting to Yorkshire Ambulance Service with mental health related problems. This work was being conducted collaboratively with YAS and included: preliminary analysis of computer aided dispatch (CAD) data and patient report forms, stakeholder interviews and focus group, and a scoping review of literature. It was agreed to incorporate a small scale pilot evaluation of the mental health nurse triage intervention as part of this work. The aim of this pilot evaluation was explore the impact, views and experiences of implementing an on-going initiative in YAS, utilising specialist triage by mental health nurses in the EOC.

Specific objectives were:

1. To gain insights into staff perceptions and experiences of specialist triage in relation to its implementation and impact on the delivery of care for patients with mental health problems.
2. To explore the impact of mental health nurse triage on ambulance service responses, in particular the impact of hear-and-treat on reducing ambulance dispatch.

This preliminary evaluation was opportunistic in nature but permitted the capture of a contemporaneous record of the implementation of mental health triage and any lessons learned. The evaluation comprised qualitative and quantitative data.

Section 2 of this report details the methodology employed in carrying out the work. Section 3 presents the findings from the quantitative and qualitative parts of the study. The findings are discussed in Section 4.

## **2 Method**

### **2.1 Qualitative evaluation**

#### ***2.1.1 Evaluation design***

To explore staff views and experiences of the implementation of mental health triage, a qualitative methodology was considered most appropriate, which entailed semi structured qualitative interviews.

An interview schedule was developed based upon the aims and objectives of the evaluation, a stakeholder topic guide developed to explore pre-hospital care for patients with mental health problems, and discussion between the researchers. The interview process was undertaken iteratively and flexibly suitable to the role of the interviewee. Analysis of initial interviews was undertaken to identify emergent themes and subsequent refinement of the interview schedule was undertaken as appropriate. The broad generic interview topic guide is included in Appendix 1.

#### ***2.1.2 Recruitment and sampling***

Sampling of patients was undertaken purposively, to gain representation from a range of staff that have some connection with the mental health triage intervention. The nurse manager distributed the information sheet (Appendix 2) to potential participants. Those interested in taking part were subsequently contacted by a researcher (AI) to confirm whether they were willing to participate and to arrange a convenient date and time to be interviewed.

Following an initial familiarisation visit in June 2015 to observe the EOC and how the mental health nurse triage operates, a total of 12 staff interviews were conducted by AI between July and November 2015. Interviews were conducted in a private room at Yorkshire Ambulance Service Headquarters by AI and lasted between 30-45 minutes. Table 1 provides details of the staff interviewed.



**Table 1: Details of the staff interviewed**

Job title	Staff interviewed	Main role and responsibilities
<b>Paramedic</b>	2	Single or double crew responders (cars, motorcycles, ambulance, air ambulance). Patient assessment, triage and treatment, advanced life support, manual defibrillation and ECG recognition, cannulation, IV medicines.
<b>Emergency medical dispatcher</b>	3	999 call handling, record and log essential patient information, pass information to dispatchers and/or refer to clinical advisors or mental health nurses.
<b>Clinical Advisors</b>		Usually based in the 'Clinical Hub' of the EOC or control room. Use decision support and triage software to undertake clinical assessment by telephone. Negotiate appropriate treatment pathways. Provide remote clinical advice to ambulance clinicians and control room staff.
<b>Managers</b>	4	Staff based within the EOC with some degree of oversight and responsibility for the work of e.g. the clinical hub.
<b>Mental health nurses</b>	3	Based in the EOC. Use decision support and triage software to undertake mental health triage assessment by telephone. Provide clinical advice and onward referral as needed. Also provide remote clinical advice to ambulance clinicians and to control room staff.

### 2.1.3 Data Analysis

All interviews were audio recorded with the interviewee’s consent (Appendix 3) and were subsequently fully transcribed and anonymised where necessary. Nvivo qualitative data analysis software (version 11) [8] was used for data management and coding of transcripts. Qualitative data analysis entailed an initial process of open coding by one researcher (AI) to initial themes and descriptive categories, such as perceptions of the need for specialist triage and initial experiences of the service and how it was implemented. This involved transcripts being read and re-read and compared using a process of constant comparison, to identify links between codes and interviewees. Preliminary review and discussion of the transcripts and coding by the project team (AI, RO, MJ) resulted in a broad chronological framework to inform further coding of themes and sub-themes.

## 2.2 Quantitative evaluation

YAS computer aided dispatch (CAD) data was provided in Excel format for the period April 2014 to December 2015. The raw data were extracted from the CAD database by YAS Business Intelligence during January and February 2016 and did not undergo data cleaning. The data were provided as an aggregated monthly output (total numbers for calls and responses) and no individual level patient data was accessed by the University of Sheffield researchers.

The CAD data identified the monthly number of calls triaged by the mental health nurses from April to December 2015 and service responses for those calls (e.g. ‘hear and treat’; ambulance dispatched; conveyance to hospital). The dataset included information on all YAS calls during this period and the two Advanced Medical Priority Dispatch System (AMPDS) card categories considered most likely to identify mental health issues; categories 23 (overdose/poisoning) and 25 (psychiatric/ suicide). These two categories account for approximately 4% of all emergency calls to YAS. The dataset also included calls and responses for the AMPDS categories 23 and 25 for several months before and after the introduction of mental health triage on an ongoing basis (April 2014 – December 2015).

### **2.2.1 Data Analysis**

Analysis of data in Excel entailed calculating the monthly proportions for service responses (e.g. ambulance dispatched and conveyance) in relation to calls triaged by the mental health nurses as well as all YAS calls. Similar analysis was conducted to compare responses for patients with mental health problems before and after the implementation of mental health triage (April 2014 – December 2015), focussing on AMPDS card categories 23 (overdose/poisoning) and 25 (psychiatric/ suicide).

Further analysis was conducted using IBM SPSS statistical analysis software [9] to test whether there was a significant difference in the mean rates for ambulance dispatch and conveyance rates before and after the introduction of mental health nurse triage.

### **2.3 Research ethics and governance**

As the work conducted was for service evaluation purposes neither NHS nor University of Sheffield ethical approval was required. Letters of access were provided by YAS for the University of Sheffield researchers involved in data collection.

## **3 Findings**

### **3.1 Qualitative evaluation**

Interviews revealed a range of staff views and experiences in relation to the implementation of mental health triage, which included perceptions of the need for specific intervention in the management of patients with mental health problems as well as factors influencing the development of the mental health triage initiative. Perceptions of the initiative were on the whole positive, with praise for the service and perceived patient benefits. Negative comments related more to concerns over the implementation and views on how it could be improved. These views and experiences of the service will now be explored in more detail, together with a description of a number of specific emergent themes from the interviews and related more sub-themes. The main themes addressed below are: the perceived need for specialist mental health triage; perceptions of initial implementation; positive and negative perceptions of mental health triage; views on the interface with other initiatives and views regarding ongoing development and challenges.

#### **3.1.1 Perceived need for specialist mental health triage**

##### **3.1.1.1 Increased demand**

In December 2014 Yorkshire Ambulance Service identified a significant increase in service demand (999 calls), particularly calls relating to mental health problems. This was identified as having an impact on organisational capacity to meet performance indicators including the eight-minute response time target for life threatening emergencies. In addition, emergency medical dispatchers (EMD) reported that they felt they had no other patient management option for mental health related calls other than to send ambulances, usually under “category green 2” (lights and sirens, 30 mins), which did not require an ambulance resource.

*“so suppose there is ten [calls] on the stack, and there’s nine we can do something with and one mental health patient, then you know, you do feel under pressure as who’s going to take that call, because nobody really knows what to do for the patient and we’re going to have to send on it [ambulance]”  
(EMD/Clinical Advisor)*

### **3.1.1.2 Mental health knowledge and awareness**

All the front-line staff said that limited knowledge and awareness of mental health issues amongst staff and lack of training may mean that patients are not receiving optimal care.

*“We felt helpless because we didn’t get any particular training on mental health patients. And you do have to stay on the phone with them, especially if they are suicidal [...] Trying to sound confident and helpful but sometimes making it worse.” (EMD/ Clinical Advisor)*

*“Traditionally mental health patients on the phone, there’s that (sigh...) oh it’s another suicide call...there was just that feeling in the room.” (Manager)*

Non-mental health staff within the Emergency Operations Centre (EOC), as well as paramedics ‘on the road’, appeared to be conscious of the impact on resources when managing often complex and time consuming cases. Staff expressed a genuine fear regarding the potential to mishandle calls from patients experiencing a mental health crisis. This fear was partially attributed to reports of complaints raised by service-users about communication with mental health patients.

Concern that patient care for this population could be improved, combined with prior experience of the lead nurse for urgent care in managing mental health patients was a key factor in driving the requests for funding from the local Clinical Commissioning Group (CCG) .

### **3.1.1.3 Lack of alternative care options**

A significant deficiency in availability of and access to alternative care pathways was identified by all interviewees. Patients with mental health problems were often conveyed to EDs solely due to the lack of alternative safe places for care, with very limited or no access during out-of-hours, weekends and bank holidays. Such conveyance decisions were taken in the knowledge that EDs are often not the most appropriate care setting. Some staff perceived an inequity in being able to provide more appropriate responses for patients with other conditions but being unable to offer the same quality and efficiency of care to patients experiencing a mental health problem. For example, care for falls was regarded as operating more effectively and efficiently via defined care pathways.

*“We just managed... we didn’t do justice to the mental health patients because our pathways were so limited” (EMD/ Clinical Advisor)*

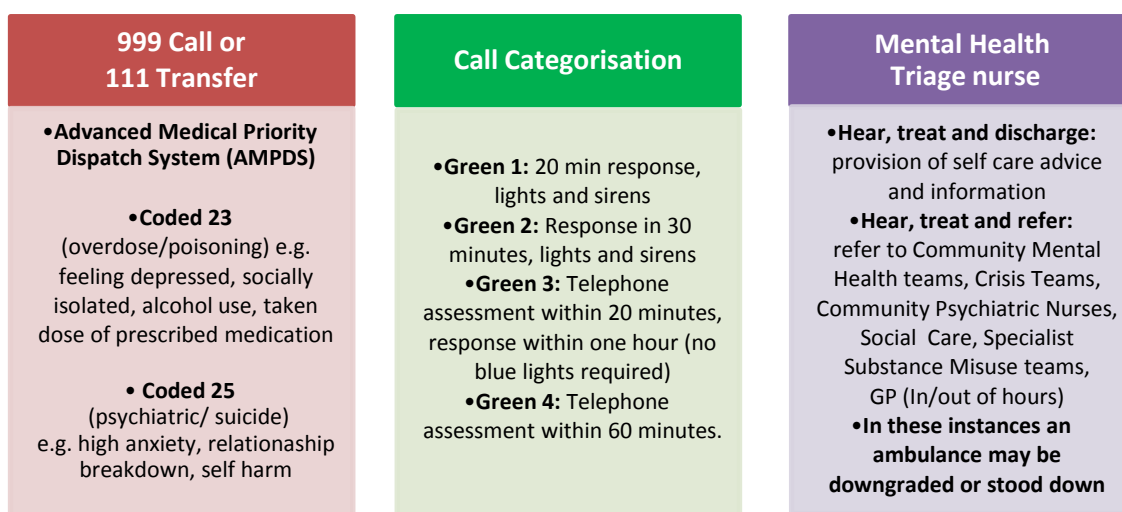
## **3.1.2 Initial implementation**

Mental health nurse triage was introduced by YAS as a reactive service to manage demand and implementation commenced very quickly after approval of funding. This entailed the rapid development of key safety, governance and audit documents prior to staff taking up post. Initially, agency nurses were recruited to work within the Clinical Hub of the EOC. Staff identified several key issues in relation to the development and implementation of the intervention around staff training, governance and safety.

### **3.1.2.1 Staff training**

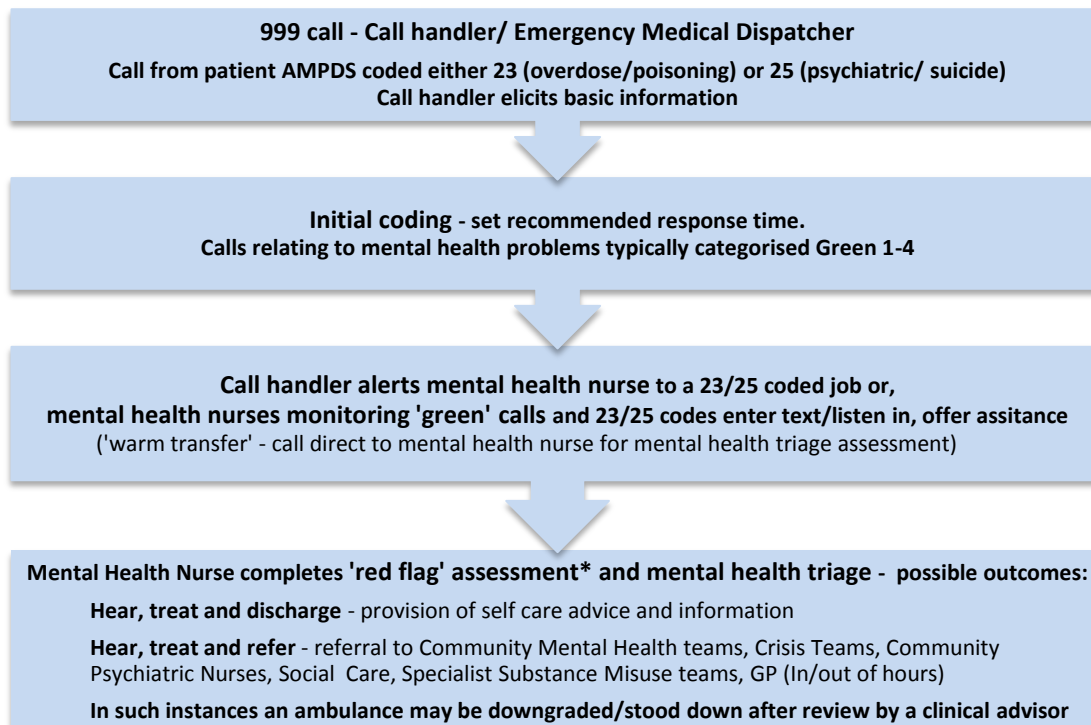
An induction and training package was developed in the first week along with a triage tool for the mental health nurses to use. Initial training of mental health nurses in the EOC included the use of the computer aided dispatch (CAD), ALERT C3 telephone systems as well as the use of a mental health triage tool derived from the Manchester Triage System [10].

Figure 1 illustrates the types of calls classified as mental health related according to AMPDS and response options. Calls categorised as the most serious and requiring urgent response e.g. Red 1 = 8 mins response (respiratory/cardiac arrest) Red 2 = 8 mins (all other life threatening emergencies) are deemed not suitable for mental health triage assessment.



**Figure 1: Types of mental health related calls and response options**

Figure 2 illustrates a typical patient pathway in response to emergency calls related to mental health problems. The following example serves only as an illustration and does not represent an exhaustive list of responses and activities undertaken by staff managing patients with mental health problems.



\*'red flag' assessment - routine triage questions that must be prioritised to identify time-critical emergencies (e.g. breathing problems, chest pain)

**Figure 2: Call from patient experiencing mental health problems - typical patient flow.**

### **3.1.2.2 Governance and safety**

In order to ensure the safety of patients, an audit tool was implemented to monitor performance, including the accuracy and completeness of call records and the appropriateness of action taken. Establishing and maintaining good quality care was also regarded by interviewees as extremely important in relation to protecting professional registration, given that nurses are accountable for their clinical decisions.

The initial phase of implementation was intended to promote an understanding of the role of the mental health nurses, what they are able to do and how they can be used as a resource for both EOC staff managing calls from patients with mental health problems and for paramedic crews managing patients on scene. In the context of a typically fast paced and intense working environment, operational staff expressed both enthusiasm and concern as they were learning about the evolving intervention on a daily basis.

*"I wouldn't say it's been unorganized pilot, but I think we've got better as we've gone along with it, and we're learning stuff from it on a daily basis, even now" (Manager)*

The audit process did reveal some issues regarding compliance with 'red flag' assessment. The first two agency nurses to join YAS were instrumental in helping to develop and improve systems and processes to safely manage mental health triage calls, for example to ensure that 'red flag' clinical assessments can form part of the initial conversation with patients. Towards the end of the period of conducting the qualitative interviews, YAS was progressing towards recruiting full time mental health trained staff into substantive roles within the organisation, whilst retaining the services of the agency staff who have been able to use their experiences to train and support all other members of staff within the EOC.

### **3.1.3 Positive perceptions**

Staff identified perceived benefits of specialist triage in relation to a number of areas. The introduction of mental health nurses in the EOC was regarded as having a positive impact in on patient care, training and knowledge sharing, internal working relationships, and external working relationships.

#### **3.1.3.1 Perceived impact on patient care**

Staff interviewed felt that due to the mental health nurses' specialist training and knowledge they are able to assess and support mental health patients in a way that non-specialist staff could not.

*"...the mental health nurses would do a lot of self-care, whereas before, we wouldn't dare do it, talking the patients down, where we weren't trained to do that." (EMD/Clinical Advisor)*

*"...they [mental health nurses] know how to speak to them [patients] in their way; I don't know how to explain it" (Manager)*

*"They [patients] just have a chat with them [mental health nurses] and feel a lot better. Because they know what to say to them, they know how to approach them. Maybe talk about their meds or different programmes that they're under" (EMD/ Clinical Advisor)*

The mental health nurses are considered experts and viewed as being able to communicate in a more appropriate manner with patients presenting with mental health problems. They were regarded as more knowledgeable in relation to what mental health conditions entail and therefore able to ask more relevant questions and talk about symptoms more meaningfully. First impressions of staff in relation to the intervention indicated that the triage nurses are increasingly managing patient's issues

over the phone, providing simple advice and support, thereby reducing unnecessary and potentially detrimental conveyances to ED. In crisis or overdose situations mental health nurses were considered more knowledgeable about toxic doses of licit and illicit drugs, which places them in a better position to identify the immediacy of the danger to patients, property or others on scene.

Ambulance service staff often interact with the patients' family and carers. Staff reported feeling happier that the mental health nurses are able to offer enhanced care and support to family members as well as patients.

*"They've [family/carers] just got that help and sympathy at the end of the phone that they weren't expecting to get sometimes. You can tell with the relatives that they are so pleased that someone has listened and someone knows" (EMD/ Clinical Advisor)*

The significance of supporting families and carers, and the potential importance this may have in helping to assess and care for the patient was highlighted by one of the paramedics interviewed:

*"If you can't see the patient, you have to ask so many more questions... the relatives are your eyes" (Paramedic)*

### **3.1.3.2 Training and knowledge sharing**

Knowledge and skills were regarded as important issues in terms of confidence and competence to manage calls from patients experiencing mental health problems. As a potential ancillary benefit it was felt that mental health nurses could share some of their skills with the wider EOC staff workforce to enable them to better manage calls.

*"We have a lot to learn about positively risk assessing these patients and I hope that they will impart their skills onto the hub on this aspect" (Manager)*

Mental health nurses had contributed to training their EOC colleagues in mental health first aid and in explaining what their role entails. Some mental health nurses also provided more informal 'training' by encouraging colleagues to listen in on calls to hear how they speak with patients and apply their learning to future calls.

*"Some listen to how we manage the call. So that next time they know" (Mental Health Nurse)*

Some expressed hope that the concepts and skills required to conduct mental health triage effectively may be de-mystified and shared so that they can be incorporated into the general call handlers skill set.

*"...something paramedics could be trained up to do on the road. Potentially any of the triage desk could do a mental health triage too. Particularly useful at the peak times when only one mental health nurse on and too many calls to handle" (Paramedic)*

However, there were mixed views regarding these forms of training, as non-mental health nurse staff reported feeling that mental health triage requires a specialist with formal training and is not the domain of the general ambulance service staff.

*"We only had limited training there too and I think you do need to be a specialist in that area to do the right thing by that patient" (Manager)*

As one staff member noted *"this mental health thing is a new concept for some people within the organisation"* (Mental Health Nurse).

### **3.1.3.3 Perceived impact on internal working relationships**

Staff expressed frustration at being unable to better manage patients presenting with mental health problems. The apparent impact of the introduction of mental health nurses was twofold: firstly, to reduce anxiety for staff managing calls due to the availability of staff with specialist (mental health) expertise, and secondly, it enhanced the feeling that YAS was offering a better service to these patients. Staff identified the beneficial impact of the intervention also in terms of improvements in general workforce morale.

*"It just boosts morale, not having those mental health patients that are such a drain" (EMD/ Clinical Advisor)*

*"I do think morale is a lot better. You should see when they walk into the EOC" (Manager)*

*"It's a relief when they [staff] see us" (Mental Health Nurse)*

*"I didn't expect it to be right away, but right away staff said 'when are the mental health nurses coming in again'. There was a real buzz in the room" (Manager)*

The current practice of Emergency Medical Dispatchers (EMDs) is to seek advice directly from the mental health nurses located in the clinical hub. This involves walking across the EOC to speak to the nurses face to face. This mechanism was attributed with having improved contact between EMDs, clinical advisors and mental health nurses, resulting in perceived improvements in general working relationships. Such improvements are in the context of an over-arching meta-narrative of "what tends to go on around here" which staff identified as historically consisting of a perceived culture of "us and them" between EMDs and clinical hub staff.

*"Because there has been more interaction between them and the mental health nurses in the hub it has also improved the relationship between the EMDs and clinical advisors in the hub" (Manager)*

### **3.1.3.4 Perceived impact on external working relationships**

Staff interviewed felt that the mental health nurses were able to signpost and refer patients to a range of appropriate care options because they have more experience and knowledge of mental health services and can utilise their existing network of contacts and relationships to facilitate access to these care pathways.

*"That's another thing they bring to the EOC, they know what's available for their patients in various areas. So they can tap into a lot more services than we could. And talk directly to the patient's CPN [community psychiatric nurse] etc." (EMD/ Clinical Advisor)*

*"Having a mental health nurse be able to speak to the police so they understood the process improved the outcome for the patient" (Manager)*

One of the managers commented on their observation that crisis teams were more willing to accept referrals from mental health nurses and mental health nurses can refer directly to crisis teams, which eliminates the need for a GP referral.

*"They [crisis teams] didn't always take the referrals from us because we were unsure in telling them what the patient actually wanted, with the crisis team intervention. Whereas with the mental health nurse they tell the crisis team what the patient needs, they are more willing to accept the referral because a mental health professional has done the assessment and know that their service is required" (Manager)*

*"The positive is that I can ring the crisis team and advise them that I have assessed this patient. We are speaking the same sort of language, so our arguments are constructive" (Mental Health Nurse)*



### **3.1.4 Negative perceptions**

Negative comments from front-line staff tended to focus on issues connected with how the mental triage initiative was implemented, specifically communication about the triage and the integration of the mental health nurse into ambulance service working practices.

#### **3.1.4.1 Communication**

It appears that initial efforts to promote the initiative were made by internal staff training events, email, intranet, EOC information boards and one-to-one information sharing. With staff required to keep abreast of a high volume of information, ongoing efforts need to ensure good level of organisational awareness and understanding of the initiative. Some EOC staff interviewed identified issues in the way the mental health nurses initiative was communicated across the organisation.

*“We’ve not been told a great deal as EMDs. We’ve just been told there are mental health nurses in the room and if there is a mental health call and they’re available then they will take it from you. But I think there are certain criteria where they can’t take the call; we’ve not been officially told” (EMD/Clinical Advisor)*

A small number of interviewees reported an apparent lack of communication about the mental health nurse’s service availability and remit.

*“Lack of communication between the departments and management has been absolutely appalling, we don’t know what calls they can take, there’s been no official paperwork coming out and we don’t really know what they do apart from take calls from us” (EMD/ Clinical Advisor)*

Frustration was expressed regarding the uncertainty around the nurse’s availability and shift patterns as well as what precisely they could and couldn’t do. The mental health nurses were not available 24 hours, seven days a week and there was variability in the days and time of day that they were on duty. This appeared to be a particular concern for paramedics who valued the availability of the support when alternative care options are not available.

*“The frustrating thing is when you need it [mental health triage] and it’s not there” (Paramedic)*

*“Mental health problems happen 24 hrs a day seven days a week. It’s either all or nothing for me. During the day you’ve got lots of clinical support staff around where you can get lots of ideas from whereas on the night you have less clinical support and most mental health services are shut” (Paramedic)*

One of the managers commented that 24 hour, seven days a week cover may not be practical and could have undesirable consequences.

*“We don’t necessarily target that the mental health nurses take all the calls from this group because that isn’t practical right now. Because we don’t have 24/7 cover and we don’t want to de-skill [other clinicians]” (Manager)*

#### **3.1.4.2 Working practices**

Non-mental health staff identified adapting to ambulance service systems and priorities as a concern. In the process of receiving a call from a patient with mental health problems the EMD repeats an initial ‘red flag’ assessment of signs or symptoms identified as triggers for conditions requiring treatment or assessment in an emergency room and therefore requiring an immediate response. For example, such an assessment would include whether or not the patient is conscious and breathing. Once this is completed a call will be given a prioritisation category and managed accordingly (see



Figures 1 and 2). Calls not regarded as immediately life threatening may be transferred directly 'hot transfer' to a mental health nurse or assigned for a nurse to call the patient back within a specified time frame. Mental health nurses must undertake the 'red flag' assessment at the beginning of each call to rule out any immediate risk to life. Regular auditing of mental health calls allowed the Audit Manager to assess if 'red flag' questions had been asked, recorded and responded to in an appropriate manner. In the first 6 months of the intervention one of the first mental health nurses was found to be outside of the compliance target (100%) for this requirement and, as a result, ceased employment.

*"It was difficult to get the mental health nurses to appreciate that we are an emergency service, and to rule out the life threatening conditions [red flags] before they go into their assessment" (Manager)*

Whilst all staff expressed an appreciation for the work carried out by the mental health triage nurses, some interviewees regarded some of the initial working practices as disorganised, for example, receiving the details of mental health calls from call handlers written on pieces of paper. Staff acknowledged that in the early stages of the intervention processes were "a little loose" but that this was a calculated 'risk' to meet significant operational demands at the time. Staff leading the intervention reported that they were focussed on rapid implementation and essential safety and governance in order to address the immediate need to provide better care to patients with mental health problems and to counter the risk to life of not having the available resources to respond appropriately to life threatening calls.

Managers recognised that the rapid implementation of the intervention created a steep learning curve for all staff involved. In the very first weeks of the intervention, whilst training induction, triage tools, recording documents and audit tools were being developed and put in place, some managers voiced their concerns about safety in the early stages of implementation.

*"From a safety point of view it made me feel a little nervous to start with" (Manager)*

Scope for more clarity around roles and expectations was commented on by mental health nurses.

*"There are still certain things that we are not clear about, certain things that we need to be trained on. Upgrading the jobs, the levels, understanding the different codes" (Mental Health Nurse)*

Mental health nurses also identified a need for more training in relation to performing their core function of managing calls from mental health patients.

*"I am hoping that they will give us a structured learning tool. Perhaps they will help us to understand exactly what is expected of us" (mental health nurse)*

Nurses reported an apparent tension between usual mental health 'therapeutic' care and delivering fast paced ambulance service emergency care over the telephone. The mental health nurse's usual ways of working with patients experiencing a mental health crisis would be to focus the initial conversation on developing a 'therapeutic alliance'. However, mental health nurses interviewed felt that repetition of the red flag assessment may impact negatively on the patient-clinician relationship.

Initial protocols around the nature of calls appropriate for mental health triage ruled out patients who were perceived to be intoxicated through alcohol or drugs. EMDs, clinical advisors and mental health nurses reported that they appreciate that patients with mental health problems also may present with concomitant alcohol or drug misuse issues. However, there appeared to be some inconsistency and conflict around how to manage patients with a mental health problem who were also perceived to be intoxicated (through alcohol or other substances).

*“We’ve not been officially told, but if they [patient] have had a drink, I think, if they’re listening in and see that the patient has said they have had a drink. Then they [mental health nurses] deem that call unsuitable. But we see that most people who are depressed have had drink so it’s a bit of a no win situation really” (EMD/Clinical Advisor)*

Some mental health nurses reported preferring to work through the mental health assessment despite a patient being ‘having consumed alcohol’ so long as a patient was responsive and coherent. Asking direct and systematic questions about drink or drug use was perceived as potentially damaging to the initial conversation. Mental health nurses described ways they could obtain the necessary information about levels and type of substance misuse, in a naturalistic and non-confrontational manner.

Some interviewees gave examples which point to the inherent difficulties and differences in working with patients face-to-face (see) or over the telephone (hear).

*“It would have been easy to take him into hospital: To let the hospital try to resolve the issue. But the hospital can’t see the house and we can. It’s hard to describe it. There’s nothing better than the right people seeing the situation first hand. A lot of the mental health workers worked face to face and it’s difficult to adapt from that to over the telephone. So you have to ask the patient for information that you would usually see straight away” (Paramedic)*

*“It is more difficult when we are not on the scene, but our colleagues need to believe we are experts in our area” (Mental Health Nurse)*

Trust is an integral part of any working relationship. Ambulance service staff attending to a patient on scene must feel they can rely on the expert advice of mental health nurses, and that this will improve outcomes for the patient. One interviewee expressed some concern that if non-mental health staff cannot speak to a mental health nurse when they need to, or even if they do the outcome for the patient remains the same, the trust in this working relationship may be eroded.

*“They need to work. Otherwise frontline staff may become disillusioned with new initiatives which may not work, or are short lived” (Paramedic)*

### **3.1.5 Interface with other initiatives**

The interface between the mental health triage initiative and particularly relevant established initiatives, including the frequent callers programme and the police paramedic programme were explored.

#### **3.1.5.1 Frequent callers programme**

The frequent caller care package is triggered if a patient calls five times or more in one month or more than 12 times in a three month period. Calls predominantly relate to the following issues: (i) social problems, (ii) substance misuse, (iii) falls and (iv) mental health problems. The frequent caller care package comprises a three stage model of care.

##### **Stage one**

- Establish contact with patient to establish the cause for repeat calls
- Agreement – letter confirming plan for access to suitable primary care
- Care plan (calls flagged – care plan accessible)
- Monitor and review

### **Stage two** (if increased calls or additional needs identified)

- Patient contact and multi-disciplinary team assembled for face to face meeting
- Action planning with patient to address identified care and support needs
- Care plan updated (calls flagged – care plan accessible)
- Monitor and review

### **Stage three** (if increased calls or failure to engage)

- Multidisciplinary team (MDT) decision A) automatic transfer of calls to Clinical Hub (no dispatch)
- MDT decision B) the calling behaviour is anti-social and not health related.  
Basis to proceed down a legal route: two stages of warnings and/or apply an Acceptable Behaviour Contract (ABC)

YAS has reported an increase in demand for calls from patients with mental health problems, which now represent approximately 50% of the total frequent caller caseload. Whilst better falls pathways have improved the care for this patient population, there appears to have been less progress made in the development of alternative care pathways for patients with mental health problems.

*“If you don’t take them to the right place the first time they will ring back and ring back until, so there’s a knock on effect with the call takers quadrupling the workload for not doing the right triage at the beginning” (Manager)*

Mental health nurses are alerted to the status of a patient as a frequent caller and can access care plans and work with frequent caller team members to review and update on patients. Frequent caller team members are encouraged to discuss “difficult cases” with the mental health nurses for feedback and input into care plans. It was suggested that this also functions as a mechanism for informal shared learning and peer-to-peer support.

#### **3.1.5.2 Police paramedic programme**

The Police Paramedic Car (POLMED) is a co-responder partnership between West Yorkshire Police and Yorkshire Ambulance Service. The scheme was set up in the Leeds District in early 2013 to address the need for police support for ambulance service staff in situations where violent behaviour presents a significant risk to the ambulance crew, the general public and the patient themselves. The scheme comprises two police officers and a paramedic operating from a Rapid Response Vehicle (RRV), on Friday and Saturday nights and on specific occasions e.g. public holidays.

Staff who were aware of the scheme reported that POLMED was effective in avoiding delays and inefficient use of resources, for example, where police may have to wait with a patient for minor injuries to be treated or, where ambulance crews may have to wait at an ‘unsafe’ scene for police support before being able to attend to the patient.

Non-mental health staff commented that, although the police paramedic team and mental health nurses were undoubtedly a valuable resource, certain systemic limitations still exist.

*“It seems they are as restricted as we are. They explore the same options from in here as we do on the road, referring into local mental health service. And if they just aren’t there or aren’t available at that time, then we are not standing to gain too much from that. But as a service, it’s good for advice but I think the outcomes are often going to end up the same. What they are managing to do is triage the calls that we aren’t required to go out to in the first place” (Paramedic)*

Staff acknowledged that police officers and paramedics who operate POLMED are well motivated but still have limited training in managing patients with mental health problems.

*“Unfortunately the police also think we can deal with that but it is sadly also lacking in our training. we do just have to refer it on because we don’t know what we are dealing with” (Paramedic)*

### **3.1.6 Ongoing development and challenges**

#### **3.1.6.1 Communication**

Managers appeared to be aware of staff perceptions of the intervention, negative as well as positive, having met with key staff involved to explore ways to improve the service. The initial implementation of the intervention was identified as something that should be tightened.

*“That’s what came up, how higgledy-piggledy the way that they got the calls [is], but we needed something to be safe as well so having this list” (Manager)*

More formal ways of communicating and documenting EOC mental health nurse referrals has been developed.

*“We need to get something in black and white around how the EMDs alert the mental health nurses. Making sure they are aware on when, so we need to do some work on that” (Manager)*

#### **3.1.6.2 Working processes**

Modifications have been made to the way mental health nurses handle calls to accommodate the way mental health nurses manage the initial important stage of the patient interaction.

*“Asking direct questions caused a bit of conflict to start with so we’ve changed the way they ask the questions” (Manager)*

Patient and practitioner safety, supported by accurate record keeping was regarded as essential regardless of the approach taken.

*“Instead of asking directly they could ask around the patient’s mental health history and current issue and pick up if they have had any alcohol. As long as they have written in their clinical notes a rationale as to why they haven’t asked a specific question then that’s fine” (Manager)*

In addition to the core tasks of the mental health nurse, interviewees working with the Clinical Hub commented that it would be useful for mental health nurses to be fully trained on the Manchester Triage System (MTS) in order to manage patients with concomitant mental and physical health problems.

*“Say a serious haemorrhage came up, instead of having to pass that call along, they could deal with that themselves” (EMD/ Clinical advisor)*

However, one interviewee felt that broadening the scope of the mental health nurses work could have potentially negative consequences.

*“It’s more effective to wait for that call to come in. They are more effective in what they can do with the call... it’s better that than them missing a few whilst on medical calls” (Paramedic)*

The availability of mental health triage is a potential source of tension between front-line staff and managers as views differ regarding the need for the mental health nurses to be operational 24 hours a day, seven days a week.

### **3.1.6.3 Mental health training for staff**

Managerial staff interviewed recognised the pressure that operational demands place on ensuring the most effective use of staff resources. Several staff reported that the mental health nurses may be able to optimise their time by developing and delivering formal and informal training to EOC colleagues around mental health topics. Interviewees identified particular training needs around the Mental Health Act (1983). Frontline staff (including those working in the EOC) reported that they feel they are not adequately trained to manage patients with mental health problems or the complexities of making judgements around mental capacity.

*“we’re not qualified enough to talk to anyone on those types of levels, or offer them advice, get them in touch with the crisis team, we could only get them down to ED and leave them there” (EMD/ Clinical Advisor)*

More widespread mental health training was advocated as potentially beneficial for staff well-being in terms of raising overall awareness, confidence and competence in managing patients with mental health problems. Also, training could help in reducing stigma around talking about mental health issues in general.

### **3.1.6.4 Interface with internal initiatives**

Staff felt there is greater scope for closer working between the mental health nurses and the Frequent Caller team.

*“I’d like them to get more involved and take over care of the frequent caller calls, because a lot of these have mental health problems” (Manager)*

*“certainly in terms of assisting with the more complex cases, even support to attend the Multi-disciplinary Team (MDT) meetings” (Manager)*

### **3.1.6.5 Working with external services**

YAS work with a wide range of health and social care providers, as well as with police and voluntary sector organisations in order to deliver effective patient care. Several of the staff interviewed viewed these external agencies as having both a positive and negative influence on the quality of care they were able to provide to patients.

*“Particularly with police. Sometimes it appears as if we are competing, sometimes as if we are not having the same goal, we are coming from two different worlds” (Mental Health Nurse)*

*“police are very much risk aware. They have had it drilled into them that they cannot leave these patients at home and have a duty of care” (Paramedic)*

*“The problem arises when we discuss these patients with the crisis teams who seem to come to completely different conclusions to us as to whether the patient has capacity. Whether they do or don’t need to go to ED” (Mental Health Nurse)*

Varying levels of risk tolerance and differing performance targets and priorities may explain some of the challenges in working effectively with external agencies. Most of the staff interviewed recognised that YAS must find ways to work alongside other health and social care professionals to provide integrated, patient focussed care.

*“The negatives may be... like with any service, some things are out of our hands. We know what the patient needs, this and this and this, but you are not able to provide that service. You are depending on someone else” (Mental Health Nurse)*

Improving the interface with external organisations was also identified as key to future development of the mental health triage nurse role.

*“The plan is to get them in, build those relationships with the acute trusts, rotating them into working in crisis teams, then rotating their crisis team nurses into us which is a workforce development plan for the future” (Manager)*

### **3.2 Illustrative cases of mental health nurse activity**

The following three cases are intended to illustrate specific experiences in relation to mental health nurse intervention based on staff accounts.

#### ***Case 1: Mental health knowledge, skills, and communication***

One of the mental health nurses recounted the case of a patient, experiencing a drug induced psychosis and relationship breakdown, threatening to kill themselves in the house. The mental health knowledge, skills of the triage nurse in communication with the patient and crisis team potentially avoids escalation of crisis and ensures appropriate care.

*“The crew was at the scene but stood off, waiting for the police. Before the police arrived I phoned and spoke to the patient. I picked up the job. He was aggravated and angry. We have a protocol to follow – a triage process, I clear all the red flags, overdoses and self-harm. I make them aware that we want to help them. I build trust and speak to him about his personal circumstances, his family etc. I put these things aside and use them bit by bit to emphasise that I also have feelings and I have empathy. I developed rapport to the point where the patient said, ok I need help now. I’ll put the razor blade aside. I can listen to him follow my instructions to put the razor blades away. We develop some trust and let them know that the crew is waiting outside. Meanwhile I am typing and telling the crew what I am doing so they know what the situation is. I speak to them briefly to give them the summary and then I leave it to them...In this case by the time the police arrived the patient was calm. In some cases you know the patient has a history with the police. They don’t want to see the police that would aggravate them. In this case I was able to de-escalate the situation before the police arrived...We took that person to ED and we phoned ahead to the crisis team to let them know this person is coming to be prepared. And I give them a history so they are prepared for him.”*

#### ***Case 2: Reducing unnecessary conveyance to ED***

This following case was recounted by a manager and demonstrates how involvement of the mental health nurse and other specialist ambulance service staff facilitated the delivery of care at home.

*“There was one incident actually, and it was a self-harmer, and he had some superficial cuts, but the mental health nurse came to speak to me about an Emergency Care Practitioner [ECP] to go out to the patient’s home to suture. We have them [ECPs] in certain areas. Paramedics with more skills so they can catheterize and suture and they can prescribe minor antibiotics etc. And they [mental health nurse] had signposted to the crisis team who had agreed to see the patient, and we had an ECP who could suture his wounds so he didn’t need to go to ED at all. So we were able to manage his mental health problem and medical need in one.”*

### ***Case 3: Supporting complex mental capacity judgements***

Several interviewees highlighted the complexities involved in making decisions around mental capacity as a good example of where inter-agency working can be particularly challenging. One of the mental health nurses recounted the following case of a 16 year old boy who was threatening to kill himself at home. Having a mental health nurse assess the situation re-assured the crew on scene that they were doing the right thing in staying with the patient. The social worker left when the ambulance crew took responsibility for the patient and there was nothing further she could do.

*“The crew were outside with a social worker and couldn’t get access to the property. After 4 hours on scene the crew thought to give me a call to see if I could speak to him [patient] to get him to come out. The police had been out but said there is nothing they can do as he is in his own home, he appears calm and isn’t threatening anyone else. So the police left...The patient needs to go to a place of safety. Plus he is 16 – he is a minor. The outcome was the social worker left. The crew was left with the patient. But I did my job. I let them know what the plan should be.”*

### ***Case 4: Supporting the management of frequent callers***

The following example was recounted by a manager, highlighting the contribution of the mental health nurse in helping to manage patients on the ‘frequent caller’ case load.

*“We find with one man that if a certain mental health nurse is on they’ll [nurse] say send him to me. At first they refuse to speak to him [mental health nurse] because he [patient] doesn’t get his own way with him because he knows how to handle him. This has noticeably cut down on his [patient] calls, because they [nurse] know how to speak to them in their way, I don’t know how to explain it. Whereas we would go through our flowchart asking, do you have this, do you have that, they may answer ‘yes’ to one thing, they [nurse] tend to ask it in a different way so that they can’t over exaggerate their symptoms. And because they may understand better what mental health problems they [patients] have, they can target the questions more to that specific problem.*

*It’s cut down on this particular patient’s calls because he doesn’t like speaking to this mental health nurse, not because he doesn’t like them, but because he is able to help them with what they are suffering with right now, and tell them what they need to be doing right now, rather than ringing back for an ambulance, or funnelling them down the right pathway but because they seem to understand their condition better they have a better knack of doing it. The consistency has helped.”*

### 3.3 Quantitative evaluation

This section summarises the activity of mental health triage nurses from the time the intervention started in April 2015 to December 2015. Details of patient management in relation to ambulance service responses are also presented.

#### 3.3.1 Service responses for calls triaged by mental health nurses

Table 2 presents data relating to mental health triage nurse activity across all calls triaged during this nine month period and addresses the following measures of activity:

1. Response rate = number of proportion of ambulance responses conveyed / total calls triaged
2. 'Hear and Treat' rate = no ambulance response (refer or discharge) / total calls triaged
3. Conveyance rate = conveyed incidents / ambulance responses
4. Total conveyance = conveyed incidents / total calls triaged

'Conveyance' in the CAD system refers to incidents (cases) that received an ambulance response, and the resource has a recorded 'arrived at a destination' timestamp.

Table 2 shows an overall increase in the number of calls triaged per month from 183 in April to 758 in December. 'Hear and treat' responses are essentially the calls that did not result in an ambulance response and the pattern of activity will mirror that for ambulance responses (i.e. a decrease in the 'hear and treat' rate as the ambulance response rate increases). Not all calls triaged by the mental health nurses were AMPDS card 23 and 25. A list of AMPDS card categories for calls not classified as 23 or 25 is provided in Appendix 4. From the data available it was not possible to provide the exact number of calls for each card category. Table 2 shows a reduction in the proportion of card 23 and 25 calls triaged over time. The reason for this reduction is not clear.

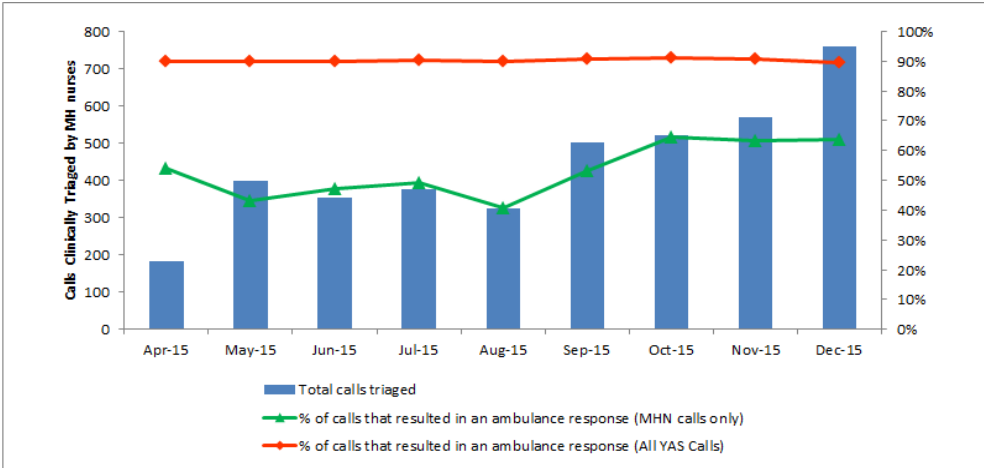
**Table 2: Data relating to MH triage nurse activity: All calls triaged**

Month	Total Calls Triaged	Response Rate <sup>1</sup> (Response N)	Hear & Treat rate <sup>2</sup> (H&T N)	Conveyance Rate <sup>3</sup> (Conveyed N)	Total Conveyance <sup>4</sup> (Conveyed N)	AMPDS card 23 & 25
<b>Apr 2015</b>	183	54.1% (99)	45.9% (84)	83.8% (83)	45.4% (83)	72.1% (132)
<b>May 2015</b>	398	43.2% (172)	56.8% (226)	86.0% (148)	37.2% (148)	70.6% (281)
<b>June 2015</b>	353	47.0% (166)	53.0% (187)	81.3% (135)	38.2% (135)	70.8% (250)
<b>July 2015</b>	375	49.1% (184)	50.9% (191)	87.5% (161)	42.9% (161)	70.9% (266)
<b>Aug 2015</b>	325	40.9% (133)	59.1% (192)	86.5% (115)	35.4% (115)	65.8% (214)
<b>Sept 2015</b>	501	53.1% (266)	46.9% (235)	86.5% (230)	45.9% (230)	59.9% (300)
<b>Oct 2015</b>	520	64.4% (335)	35.6% (185)	81.5% (273)	52.5% (273)	56.9% (296)
<b>Nov 2015</b>	570	63.2% (360)	36.8% (210)	80.8% (291)	51.1% (291)	56.3% (321)
<b>Dec 2015</b>	758	63.7% (483)	36.3% (275)	88.0% (425)	56.1% (425)	48.4% (367)

Figure 3 illustrates the variation over time in calls handled and the proportion of calls resulting in an ambulance response. The proportion receiving a vehicle response appears to be higher in the latter months as the overall number of calls handled increases. The reason for this increase is unclear.



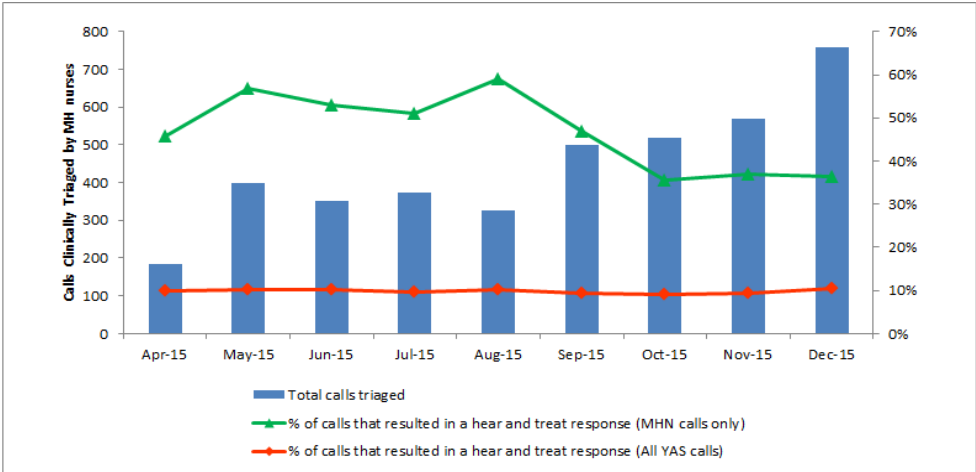
Figure 3 also shows the proportion of all YAS calls that resulted in an ambulance response during the same period of time, which remains at a fairly consistent level of around 90% of calls receiving and ambulance response.



**Figure 3: Ambulance dispatch for all calls triaged by mental health nurses**

Figure 4 illustrates the variation over time in calls receiving a ‘hear and treat’ response. As these are the calls that did not result in an ambulance response, the pattern over time mirrors that of Figure 3 and shows a decrease in ‘hear and treat’ response in the latter months. As noted above the precise reason for this is not clear, however, It may be that accessing other services (e.g. crisis teams, GPs) becomes more challenging as the numbers increase. Alternatively, the increased proportion of triaged calls in AMPDS categories other than 23 and 25 may represent calls where a primary physical health problem is considered to merit clinical assessment at-scene.

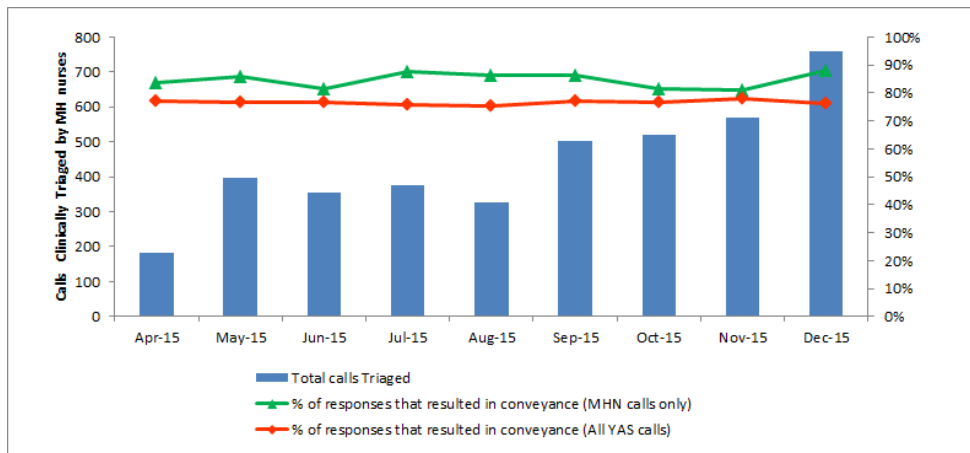
The ‘hear and treat’ rate for all YAS calls remains consistent at around 10%. As the ‘hear and treat’ rate is reflected in the response rate further coverage of the quantitative data will only focus on response rate as it is the reduction in ambulance dispatch that is of particular interest to YAS.



**Figure 4: ‘Hear and treat’ responses to all calls triaged by mental health nurses**

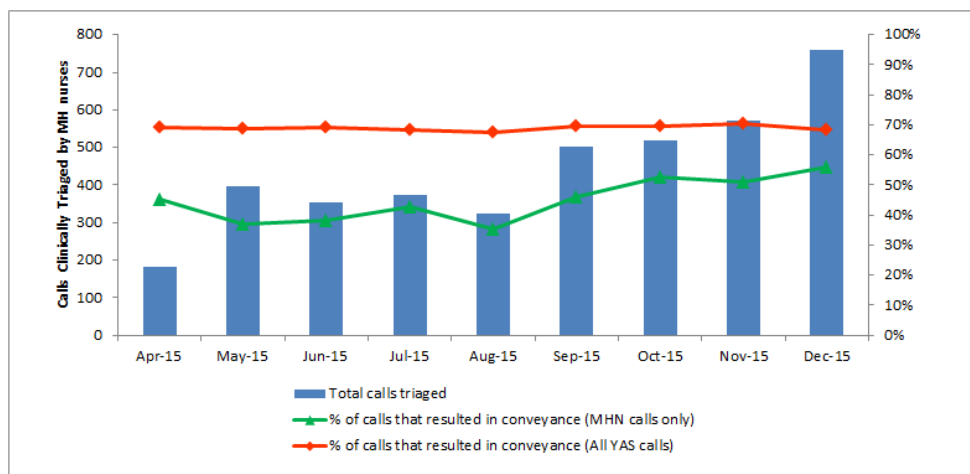
Figure 5 shows the rate of conveyance for calls triaged by mental health nurses that received an ambulance response. The conveyance rate for these calls is marginally higher than the rate of

conveyance for all YAS calls and may indicate that mental health nurses are making accurate triage decisions and ambulances are being dispatched when there is a clear need for conveyance. It may also be the case that 'see and treat' options as alternatives to conveyance are more limited for these patients.



**Figure 5: Conveyance rate for triaged calls that resulted in an ambulance response**

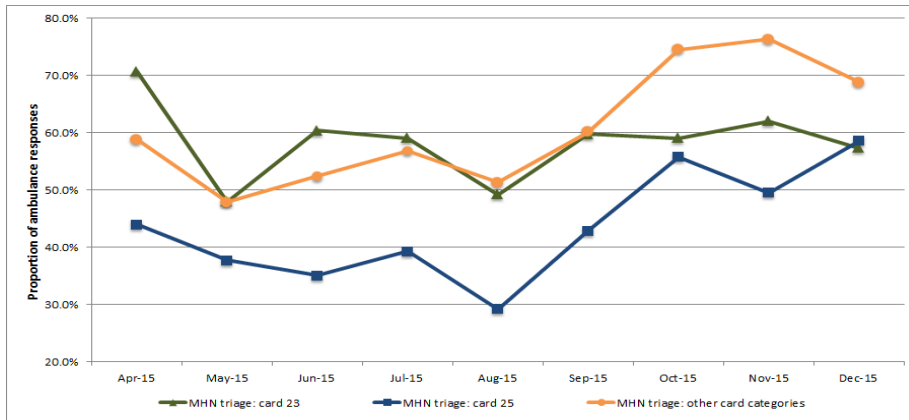
Figure 6 shows the total conveyance rate for calls triaged by the mental health nurses. The proportion of calls resulting in conveyance appears to increase as the overall number of calls handled increases. The proportion of all YAS calls that resulted in conveyance during this time period remains at a consistently higher level.



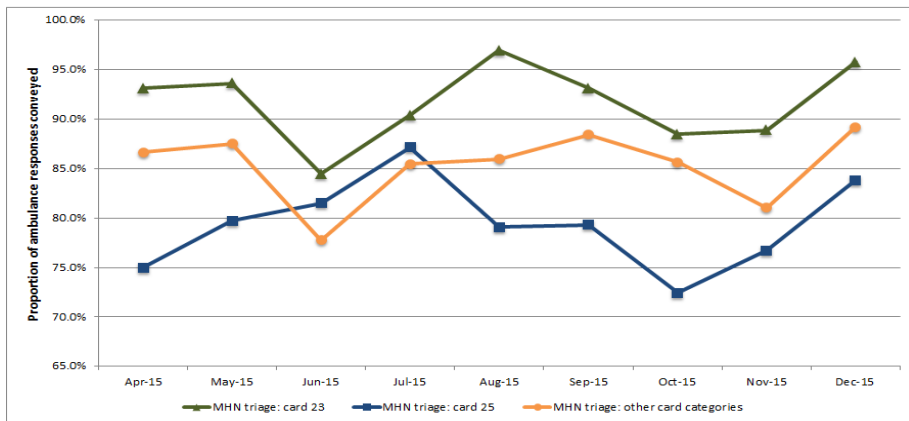
**Figure 6: Conveyance rate for all calls triaged by mental health nurses**

### 3.3.2 Service responses for mental health nurse triage by AMPDS category

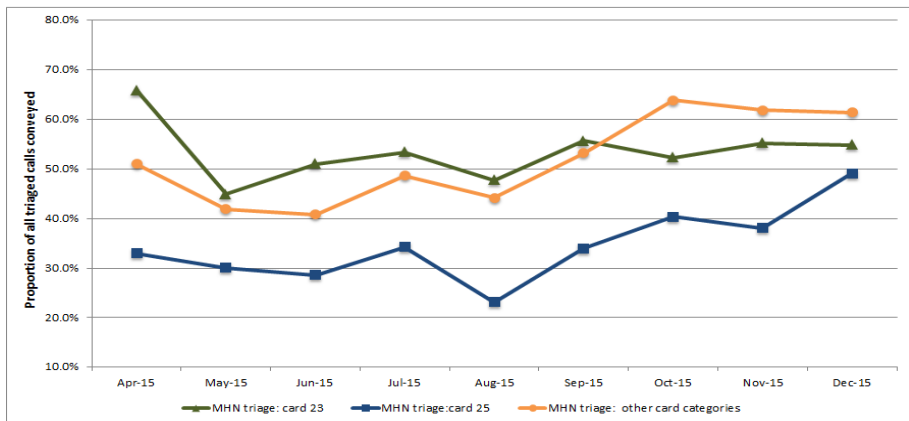
Monthly response outcome data for card 23, card 25 and 'other' card categories are provided in Appendix 5 (Tables, 5, 6 and 7). This data is presented in the following three line charts (Figures 7, 8 and 9) that illustrate the variation over time in three specific outcomes for calls triaged by mental health triage nurses during their first nine months in the EOC: ambulance response; conveyance rate for calls that resulted in an ambulance response; and conveyance rate for all triaged calls. Each chart compares response outcomes for calls in AMPDS card categories 23 (overdose/poisoning) and 25 (psychiatric/ suicide) as well as calls in 'other' AMPDS card categories across the nine month period.



**Figure 7: Comparison of Ambulance response rates for calls by AMPDS card category**



**Figure 8: Comparison of conveyance rates for calls receiving an ambulance response by AMPDS card category**



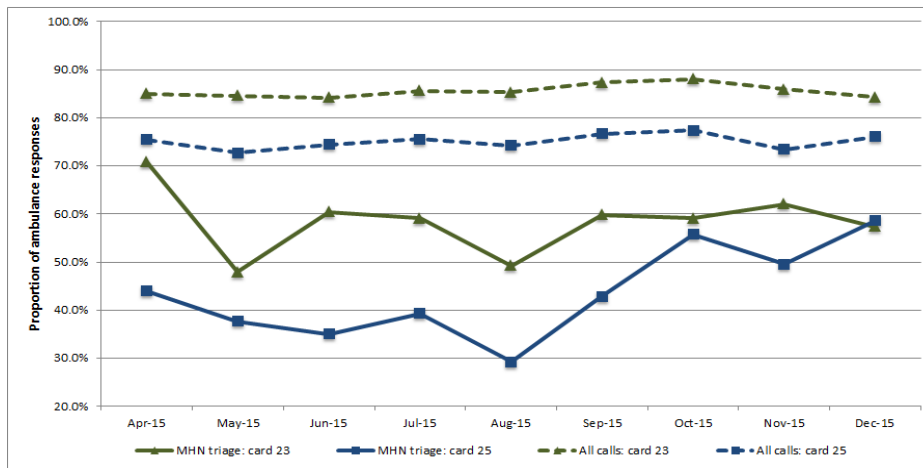
**Figure 9: Comparison of conveyance rates for all triaged calls by AMPDS card category**

These three charts illustrate the variation according to different AMPDS categories. They show the increase in ambulance responses (Figure 7) and overall conveyance rate (Figure 9) for calls in the AMPDS card 25 and 'other' cards. From October to December 2015 the response rate and overall conveyance rate is higher for calls in 'other' card categories compared to card 23 and 25. Figure 8 shows that card 23 calls receiving an ambulance response have a consistently higher conveyance rate than 'other' calls. This may reflect the nature of the conditions that this category relates to – overdose/poisoning, for which ED attendance is likely to be appropriate for assessment or treatment.

### 3.3.3 Service responses for AMPDS card 23 and 25 calls by type of triage

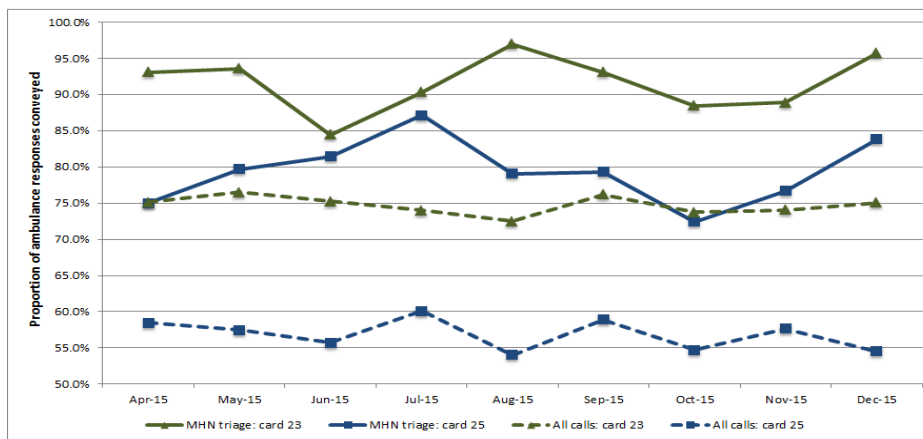
The following three line charts (Figures 10, 11 and 12) provide a comparison of service responses for all AMPDS card 23 and 25 calls that were triaged by mental health nurses in the EOC and those that were not (April - December 2015). The proportion of card 23 calls triaged ranged between 3% and 8% each month. The proportion of card 25 calls triaged ranged between 7% and 20% each month.

Figure 10 shows a consistently lower rate of ambulance dispatch for card 23 and 25 calls triaged by the mental health nurses.



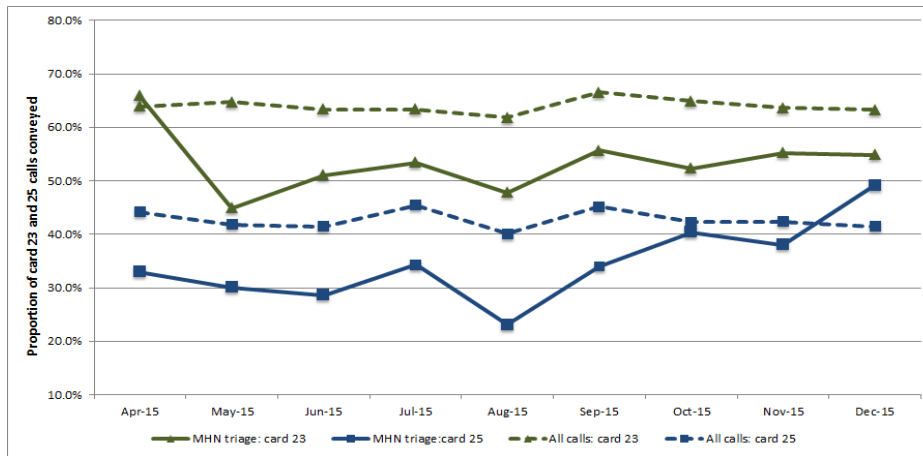
**Figure 10: Comparison of Ambulance response rates for AMPDS card 23 and 25 calls**

Figure 11 shows a higher rate of conveyance where an ambulance was dispatched for card 23 and 25 calls triaged by the mental health nurses relative to all calls in the same AMPDS car categories. The card 23 calls receiving mental health triage had the highest rate of conveyance.



**Figure 11: Comparison of conveyance rates for AMPDS card 23 and 25 calls receiving an ambulance response**

Figure 12 shows that the total conveyance rate for all card 23 calls (including those triaged by the mental health nurses) is consistently higher. The total conveyance rate for card 23 and 25 calls triaged by the mental health nurses is higher than for calls not receiving specialist triage.



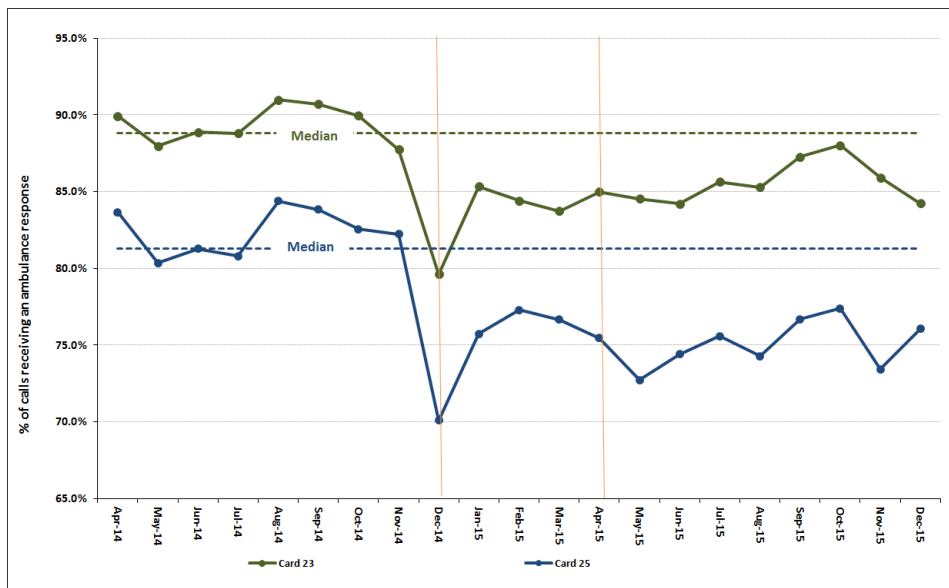
**Figure 12: Comparison of conveyance rates for AMPDS card 23 and 25 calls**

A caveat regarding the comparison between the mental health triage calls and all card 23 and 25 calls should be noted. As we had no further details on the nature of these calls, we are making the assumption that they are comparable. It has not been possible to identify or exclude any calls that may have been eligible for mental health triage.

### 3.3.4 Ambulance service responses before and after mental health nurse triage

This section will present data for calls before and after mental health nurse triage in relation to card 23 and card 25. The 'other' AMPDS card calls are not included in this analysis because it is not possible to match this set of calls with data from before the intervention as there are too many card categories for any meaningful analysis. Coverage will focus on the specific objective of assessing the impact of mental health triage in delivering hear-and-treat responses that will reduce ambulance dispatch. Monthly response outcome data for card 23 and 25 are provided in Appendix 6 (Tables, 8 and 9).

Figure 13 provides a graphical illustration of response outcome data over time in order to assess the impact of mental health nurse triage in the EOC. The first vertical line indicates when mental health triage nurses were first employed in the EOC (December 214) and the second vertical line indicates the start of the ongoing mental health triage (April 2015). Whilst run charts are a valuable way of assessing change for service improvement, they should be treated with a degree of caution here as the proportion of calls triaged represents a relatively small proportion of the overall number of card 23 and 25 calls (see section 3.3.3). Figure 13 shows the monthly variation in calls receiving an ambulance response for AMPDS card categories 23 and 25. This data suggests that a change towards a reduction in ambulance dispatch rates for both these card categories started to occur from December 2014 and a lower rate of dispatch (below the baseline median) has been maintained through most of 2015.



**Figure 13: Run chart for calls receiving an ambulance response: AMPDS cards 23 and 25**

Run charts illustrating calls conveyed following an ambulance response (Figure 14) and total calls resulting in conveyance (Figure 15) for AMPDS cards 23 and 25 are provided in Appendix 7.

Table 3 reports analysis to compare the mean proportions for ambulance dispatch eleven months before and nine after mental health nurse triage. The Independent t-test was used to assess whether there has been a statistically significant reduction in the rate of ambulance dispatch. December 2014 was excluded from the analysis as mental health nurses were employed for some of this month. For card 23 calls there was no significant difference in mean response rates before and after. For card 25 calls there was a significant reduction in mean ambulance dispatch in the period after mental health nurse triage (mean difference = 5.69%;  $p < 0.01$ ). As noted above the use of total card 23 and card 35 calls for before and after analysis should be regarded with a degree of caution as the proportion of calls triaged represents a relatively small proportion of all card 23 and 25 calls.

**Table 3: Mean ambulance response rates before and after mental health nurse triage**

	Before mental health triage (n = 11 months)	After mental health triage (n = 9 months)
<b>Ambulance Response: Card 23</b>		
Mean (SD)	88.04% (2.52%)	85.57% (1.33%)
(95% CI for mean)	86.35% to 89.73%	84.55% to 86.59%
Mean difference (95% CI)	2.47% (0.51% to 4.43%)	
Significance = $p < 0.01$	P = 0.02	
<b>Ambulance Response: Card 25</b>		
Mean (SD)	80.80% (3.01%)	75.11% (1.52%)
(95% CI for mean)	78.78% to 82.83%	73.94% to 76.28%
Mean difference (95% CI)	5.69% (3.36% to 8.02%)*	
Significance = $p < 0.01$	p = 0.00	

## 4 Discussion

### 4.1 Qualitative findings

The findings from this evaluation provide insight into the initial implementation of specialist mental health triage in the YAS EOC. The main themes identified from the twelve staff interviews are summarised in Table 4. Appendix 8 provides a summary of perceptions of the mental health triage intervention organized by staff role to show areas of consistency and divergence across the various staff roles interviewed.

**Table 4: Main themes identified by interviews**

Main theme	Sub-themes
<b>Perceived need for specialist mental health triage</b>	Increased demand, mental health knowledge and awareness, lack of alternative care options
<b>Perceptions of initial implementation</b>	Staff training, governance and safety
<b>Positive perceptions of mental health triage</b>	Patient care, training and knowledge sharing, internal working relationships, external working relationships
<b>Negative perceptions of mental health triage</b>	Communication, working practices
<b>Views on the interface with other initiatives</b>	Frequent callers programme, police paramedic programme
<b>Views regarding ongoing development and challenges</b>	Communication, working practices, mental health training for staff, interface with other initiatives, working with external services

Key drivers for the introduction of specialist triage by mental health nurses in EOC were identified: managing the increased demand relating to mental health problems, within the context of limited staff knowledge and awareness of mental health issues; a lack of alternative care options for patients with mental health problems other than conveyance to emergency departments. These drivers are consistent with available evidence in relation to the emergency care and mental health [6].

The initial implementation of the intervention was conducted quite rapidly following approval of funding. The initial focus appears to have been directed at ensuring that mental health nurses were operational as soon as possible, addressing essential training governance and safety issues. Systems in place to ensure the safety of patient care appear to have been effective in identifying potential problems around lack of required attention to physical health assessment. Other aspects of the service have evolved over the period of this evaluation, including efforts to improve the system of referral and information transfer between call handlers, EMDs and mental health nurses. Efforts to recruit mental health nurses as substantive ambulance service staff were also underway towards the end of the evaluation period.

The speed of implementation appears to have been challenging for all staff connected with the initiative and despite efforts to promote the initiative amongst staff; this communication did not seem to keep pace with the rapidly evolving mental health triage intervention, which appeared to be a source of frustration for staff. However, a number of perceived benefits of this new service have been identified by staff including improved experiences of ambulance service care for patients, relatives and carers due to the specialist expertise in managing mental health patients and in communicating with

external services (e.g. crisis teams) to seek the most appropriate care. Enhanced awareness of mental health issues was reported amongst staff through formal training and informal knowledge sharing. Also, improved working relationships were reported amongst ambulance service staff involved in managing patients with mental health problems. The perceived effectiveness of the mental health nurse triage scheme is attributed to the nurse's established contacts and their ability to communicate inter-professionally with staff in mental health services. Mental health nurses are also more likely to secure onward referrals as receiving services are reassured that an appropriate assessment has been carried out.

Managerial staff raised some initial concerns around the integration of mental health staff into ways of working within the time critical prioritisation of an urgent and emergency care service. Establishing robust safety and appropriate governance processes around the work of the mental health nurses was regarded as important to ensure the safety and wellbeing of patients and the professional 'safety' and integrity of mental health nurses themselves.

Mental health nurses reported enjoying their role within the call centre environment and the different challenges this entails in comparison to face to face community based mental health work. Mental health nurses typically speak to patients categorised into the lower priority (Green 1-4) call category. Most of these calls may relate to common mental health problems such as depression or anxiety. Calls relating to more severe, complex illnesses associated with an immediate risk to life would be triaged as Red 1 or 2 calls and as such not be managed by mental health nurses. There is a risk of skill degradation if mental health nurses do not have the opportunity to utilize and develop their skills in relation to severe and complex mental health illnesses. Decisions around workforce development take into consideration the need for staff to maintain and improve current skill levels whilst balancing resource constraints and operational demands. Planned workforce skills development programmes would allow mental health nurses to rotate within current roles, to continue clinical practice within local mental health NHS trusts and for community practitioners also to experience working in the emergency pre-hospital care setting. This would both allow mental health nurses the opportunity to utilize their skills and experience of severe and complex mental health illnesses as well as enhance links and communication with local mental health providers.

This evaluation highlights the challenges the ambulance services face in creating an appropriate skill mix within the staff team in order to effectively and efficiently meet the needs of patients. Mental health nurses were optimistic that they had an important role to play in training and sharing knowledge in order to improve the way all ambulance staff colleagues could care for patients with mental health problems. Managerial staff also reported that, through informal and formal training delivered with or by mental health nurses, it is hoped the general workforce will become more confident in managing these patients.

In addition to the planned and desired improvements in patient care, we found the implementation of mental health nurses in the EOC appeared to have had a number of other unanticipated and welcomed consequences. All EOC staff referred to a perceived improvement in internal working relationships, with better communication between EMDs, clinical advisors and mental health staff, giving a boost to overall staff morale. Promoting a cohesive and pleasant team-working environment ultimately enhances staff job satisfaction and may help address wider organisational issues around staff retention.

Findings from this evaluation highlight the role that mental health nurses may have in enhancing other programmes including the management of 'frequent callers'. Staff involved in the frequent caller



programme recognised the role that the nurses play in helping to manage patients with complex mental health needs, particularly out-of-hours when the frequent caller team is not operational. In addition, staff expressed a desire for the mental health nurses to become further integrated into the work of the frequent caller team going forward. This could be around input into a patient's care plan or being part of a multi-disciplinary team approach to help support a patient. This could also strengthen the interface and relationships with linked service providers in support of heart-and-treat.

Partnerships between the Police and Ambulance services such as the POLMED initiative described highlight recognition by other services of the need to work collaboratively and pragmatically to meet the needs of patients experiencing mental health crises. In the example of 'case 1' (p21), the mental health nurse felt the alternative scenario would have been one where *"the police would have restrained him and dragged him out and taken him in"*. Staff involved in the POLMED initiative acknowledge that the police also lack the training around managing members of the public with mental health problems and at times feel ill equipped to help. Although not explored in the interviews, we were informed that the mental health nurse initiative was influenced by early conversations with West Yorkshire Police. The nurses could be accessed by police officers on scene as appropriate to provide advice and support on how best to manage individuals experiencing a mental health crisis and minimise potential exacerbation.

Examples such as 'case 1' highlight the potential role of mental health triage nurses in enhancing links and communication with external agencies such as the Police for the benefit of staff and patients. 'Blue light' collaborations such as this represent a way to enable closer working between emergency services in line with an increasing emphasis in the NHS on delivering savings through efficient use of staff and organisational resources. The current evaluation focusses on the experience of implementing this initiative from the perspective of one NHS Ambulance Service Trust. Further work could explore how police and other emergency services perceive the mental health triage intervention.

All staff interviewed felt that due to a range of factors patients/service-users with mental health problems are receiving better care as a result of input from the mental health nurses. Commenting on their experience of managing ambulance service calls, mental health nurses felt they had been able to use their skills and experience to directly help patients, provide effective support to EOC and staff on the road indirectly enhancing a patient's experience of the care they receive. Although not detailed within the interview findings, recruitment, training and retention of mental health nurse staff were identified as challenging.

## **4.2 Quantitative findings**

Between April and December 2015 the mental health nurses triaged a total of 3983 calls. In the first four months, the majority (>70%) of calls were from AMPDs card categories 23 (overdose/poisoning) and 25 (psychiatric/ suicide). Although the number of calls triaged increased over the nine month period, the proportion of card 23 and 25 calls decreased steadily to 48% of calls in December 2015, with the majority of triaged calls originating from 22 'other' AMPDS card categories. Ambulance dispatch and overall conveyance rate is considerably lower for calls triaged by mental health nurses compared to all YAS calls but it seems noteworthy that as the number of calls triaged increases and the case-mix becomes more varied (as indicated by the variety of AMPDS card categories), the rates of ambulance dispatch and total conveyance increase slightly.

When comparing mental health triage outcomes by card 23, 25 and 'other' cards over the nine month intervention period, a degree of variation is apparent. The increased rate of ambulance dispatch and overall conveyance from September 2015 is noted above in relation to all triaged calls but appears to be more notable for card 25 calls and 'other' card calls. Card 23 calls receiving an ambulance response have a consistently higher conveyance rate when compared to card 25 and 'other' card calls, which is perhaps not surprising, given the nature of the condition that it relates to – overdose/poisoning. It may be worth considering the merit and feasibility of identifying more specific criteria for calls likely to benefit most from mental health nurse triage.

Comparison of service responses for all AMPDS card 23 and 25 calls that were triaged by mental health nurses in the EOC and those that were not (April - December 2015) indicates that rates for ambulance dispatch and total cases conveyed were lower for calls triaged by the mental health nurses. For cases where an ambulance was dispatched, the rate of conveyance for calls triaged by the mental health nurses was higher than for calls not receiving specialist triage, which arguably could indicate appropriate dispatch decisions. In this analysis we are making the assumption that the mental health triage calls and all card 23 and 25 calls are comparable but we have been unable to verify this.

The findings address the key objective of the quantitative evaluation, to explore the impact of hear-and-treat by mental health nurses on reducing ambulance dispatch. Recognizing the limitations of the data analysis as identified, mental health triage appears to be effective in reducing ambulance dispatch for card 23 and 25 calls.

Establishing baseline data to compare outcomes before and after the introduction of mental health triage was problematic. Cards 23 and 25 data were selected to generate a baseline median for comparison with data following the implementation of mental health triage. However, service outcomes for triaged calls represent a relatively small proportion of card 23 and 25 calls; making it difficult to robustly determine change over time. The same limitation applies to the analysis of mean proportions for service outcomes before and after. The run chart illustrating change over time does appear to identify change, including a downward trend in the proportion of ambulance dispatch, particularly for card 25 calls. Likewise, the comparison of mean ambulance dispatch rates before and after shows a significant difference for card 25 calls, which might suggest greater potential for 'hear and treat' (reduced ambulance dispatch) with patients in the card 25 call category (psychiatric/suicide).

Further evaluation of mental health triage could explore the narrative detail on the patient report forms (PRFs) to understand why these calls were triaged by the mental health nurses. This could also provide a basis for exploring explicit and implicit criteria for mental health triage to inform possible improvement.

### **4.3 Limitations of the evaluation**

The primary purpose of this small scale service evaluation was to capture the operation of the mental health triage nurse intervention whilst in the early phase of implementation. Given the opportunistic and pragmatic approach adopted there are a number of limitations to acknowledge. The qualitative evaluation was limited to a self-selected sample of interviewees and is not representative of all the possible views of YAS staff. This notwithstanding, concordance within and between interviewee role groups on some of the key issues provides a degree of confidence that they may be shared more generally by colleagues in similar roles.

A number of limitations have been identified in sections 3.3 and 4.2 in relation to the data available for the quantitative evaluation, for example, the difficulty in identifying change over time. The quantitative data was collected retrospectively from routine organisational (CAD) data rather than data collection specifically designed to address the evaluation objectives. It may have been informative to explore staff interpretations of the variations identified in this data but this was not possible within the timescale of the work.

The quality and safety of care delivered by the mental health nurses was not specifically examined in this evaluation, including details of the actual outcomes for patients receiving a 'hear and treat' response.

The current evaluation focusses on understanding the process and impact of the mental health triage nurse intervention from the perspective of YAS staff members. Despite attempts to recruit service-users we were unsuccessful and were therefore unable to explore their experiences of this service.

#### **4.4 Further evaluation and research**

Issues in relation to the process of implementing mental health triage in the EOC and its impact have been explored in this pilot service evaluation. Apparent benefits have been identified from the qualitative and quantitative evaluation. However, this should be considered a preliminary evaluation and the mental health triage initiative is still evolving. Therefore, further evaluation and research could explore the effectiveness of the intervention in more detail, its sustainability over time, whether there is scope for a more targeted approach to identifying patients and the cost-benefits associated with the initiative. A review of patient report forms could address quality and safety of care delivered and to some extent provide more specific detail on outcomes for patients receiving a 'hear and treat' response. Feedback from other services involved in the care of ambulance service patients with mental health problems (GP, crisis care, EDs) could inform further evaluation and development of the approach.

It is vital that future evaluation and research explores service-users experiences of mental health nurse triage when accessing the Ambulance Service. It could also be informative to explore how input from the mental health nurses may be experienced by family members and carers, as this was identified by EMDs and clinical advisors as a key benefit. We were informed that more recent engagement by YAS with the Positive Practice Mental Health Collaborative is intended to support improved service-user feedback and input on service improvement.

## 5 Conclusion

The aim of this pilot evaluation was to explore the impact, views and experiences of implementing an ongoing initiative in YAS, utilising specialist triage by mental health nurses in the YAS EOC. The qualitative findings provide insights into staff perceptions and experiences of specialist triage in relation to its implementation and impact on the delivery of care for patients with mental health problems.

Quantitative analysis of routine CAD data provides some insight into the activity of the mental health triage nurses and apparent impact in relation to ambulance service responses for patients with mental health problems, in particular the impact of hear-and-treat on reducing ambulance dispatch.

A strength of this evaluation was the ability to capture a reasonably contemporaneous account of its implementation and development to support learning from this experience. The qualitative findings highlight the time and effort needed to fully implement this approach, which is still evolving.

Preliminary impressions of the intervention derived from this evaluation indicate that the triage nurses are increasingly managing patient's issues over the phone to deliver 'hear and treat responses', thereby reducing unnecessary ambulance dispatch and conveyance to ED. Specialist mental health triage appears to deliver benefits from a patient and organisational perspective. These include improved responses that meet the needs of ambulance service patients with a mental health problem, reduced usage of ambulance resources and reduced conveyance to ED where not wholly appropriate.

Further evaluation and research is needed to examine this intervention in more detail, including service user experiences and cost-benefits of implementing a mental health triage nurse intervention. Improvement initiatives that can have impact on service delivery need to be supported by a detailed understanding of the issues and challenges underpinning service development and be evidence based. Information from this pilot evaluation and any subsequent evaluation or research can contribute to an evidence base to inform decisions regarding the implementation of this approach in other ambulance services.

## 6 References

1. NHS Confederation. Getting to a good place: partnership working for mental health patients. NHS Confederation Briefing 191. NHS Confederation; 2009.
2. Morisson-Rees S, Whitfield R, Evans S, Snooks H, Huxley P, John A, et al. Investigating the volume of mental health emergency calls in the Welsh Ambulance Service Trust (WAST) and developing a pre-hospital mental health model of care for application and testing. *Emerg Med J*. 2015;32(5):e3-.
3. Academy of Medical Royal Colleges. Managing Urgent Mental Health Needs in the Acute Trust: a guide by practitioners for managers and commissioners in England and Wales. London: Academy of Medical Royal Colleges; 2008.
4. Care Quality Commission. Right here, right now – help, care and support during a mental health crisis. Care Quality Commission; 2015.
5. Snooks H, Anthony R, Chatters R, Cheung WY, Dale J, Donohoe R, et al. Support and assessment for fall emergency referrals (SAFER 2) research protocol: cluster randomised trial of the clinical and cost effectiveness of new protocols for emergency ambulance paramedics to assess and refer to appropriate community-based care. *BMJ open*. 2012 Jan 1;2(6):e002169.
6. O’Hara R, Johnson M, Hirst E, Weyman A, Shaw D, Mortimer P, et al. A qualitative study of decision-making and safety in ambulance service transitions. *Health Serv Deliv Res* 2014;2(56).
7. Harris A and Marshall M. Mental Health support in EOC – post Christmas period review. Report to Yorkshire Ambulance Service NHS Trust Executive Group; January 2015.
8. NVivo qualitative data analysis software; QSR International Pty Ltd. Version 11; 2015.
9. IBM. SPSS statistics for Windows, Version 21.0. Armonk, NY: IBM; 2012.
10. Mackway-Jones K. Emergency triage: Manchester Triage Group. London: BMJ Publishing Group; 1997.

## 7 APPENDICES

### Appendix 1: Interview topic guide



Yorkshire Ambulance Service   
NHS Trust

#### EOC mental health triage project evaluation Topic guide (GENERIC)

##### Introduction

The aim of the project is to examine existing pre-hospital emergency care for patients with mental health problems and identify potential areas for service improvement research. This work is being carried out jointly by staff at the University of Sheffield and Yorkshire Ambulance Service. It is funded by the National Institute for Health Research (NIHR) via the Yorkshire and Humber Collaboration for Leadership in Applied Health Research and Care (CLAHRC). As part of this project we are asking key service delivery stakeholders (e.g. ambulance service personnel including; EMDs, Paramedics, Clinical Advisors, Mental health nurses) to take part in interviews to help us understand existing service provision for Ambulance Service patients with mental health problems. You are being invited to take part because it is considered that you could provide us with relevant information.

1. What is your understanding of the current EOC mental health triage project?
  - a. How did you find out about it?
  - b. How was the current initiative received? By you and your colleagues?
2. Can you say a little about your role(s)?
  - a. Length of time in the role?
  - b. Who do you work with to manage the care of mental health patients?
  - c. How does your role fit with within the current system of caring for mental health patients?
3. What is your previous experience (prior to EOC MH project) of managing the care of mental health patients?
  - a. Particular aspects of demand
  - b. Particular patients presenting
  - c. Particular concerns (safety, quality, dignity)
4. What is your current experience (with MH nurse present in EOC) of managing the care of mental health patients?
  - a. Integrated working with other services (name)
  - b. Particular concerns (safety, quality, dignity)
5. What works well in terms of managing patients with mental health problems?
  - a. Maintaining patient confidentiality, could you describe a specific example of where this current system has worked well?
  - b. What factors helped/hindered?
6. What does NOT work as well in terms of managing patients with mental health problems?
  - a. Maintaining patient confidentiality, could you describe a specific example of where this current system has not worked well?
  - b. What factors helped/hindered?
7. What refinements/solutions are needed to improve the care for patients with mental health problems?
  - a. What resources/funds/assistance do you require to develop this initiative?
  - b. What do you think would be the best way to evidence the impact of this project?
8. Is there anything else you would like to add?
9. Is there anyone else that we should talk to?

##### Management/Strategic interviewee addendum \*USE instead of Q1.

- What was the background and rationale for the project?
- What were the initial reactions (colleagues) at the development and the implementation phase?
- How has the project evolved?



## Appendix 2: Information Sheet



Yorkshire Ambulance Service   
NHS Trust



### **Information Sheet: Service delivery stakeholder**

You are being invited to contribute to a project examining a new intervention being developed in pre-hospital emergency care for Ambulance Service patients with mental health problems. Before you decide it is important for you to understand why this work is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. We are happy to provide more information if anything is not clear.

#### **1. What is the purpose of the project?**

The aim of the project is to assess the strengths and weaknesses of implementing a mental health nurse triage system in the Emergency Operations Centre (EOC) as a resource for managing patients with mental health problems. This work is being carried out jointly by staff at the University of Sheffield and Yorkshire Ambulance Service.

As part of this project we are asking key service delivery stakeholders (e.g. ambulance service managers, EOC staff, mental health triage nurses and paramedics) to take part in interviews to help us understand how the mental health triage nurse intervention impacts upon service delivery and professional roles compared to "usual" service provision. You are being invited to take part because it is considered that you could provide us with relevant information.

#### **2. Do I have to take part?**

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. You are free to withdraw at any time.

#### **3. What will happen if I take part?**

A researcher will contact you to arrange an interview, either by telephone or face-to-face. This is expected to take no longer than one hour but could be much shorter. The interviewer will ask about your role, aspects of the mental health triage nurse intervention that work well, what could be improved, any concerns you have about new or "usual" care and any challenges in delivering or accessing the intervention.

With your permission, we will audio-record the interview. The recording will be used to make written notes and then destroyed.

#### **4. What will happen to the information that I provide?**

Information from the interviews will improve our understanding of how implementation of this new service affects care for patients with mental health problems.

Your name will not be linked with the information you provide. However, as the interviews will involve a relatively small number of key stakeholders we cannot guarantee confidentiality or anonymity.

As researchers we will follow ethical and legal practice to manage all information. Personal information will be stored separately and destroyed at the end of the overall project (31/10/15) unless you agree to being contacted in connection with follow-on work. An anonymised copy of your information may be stored (securely) for up to 7 years.

#### **5. Who to contact?**

If you are interested in taking part or would like more information about this project please contact the project researcher, Andy Irving by telephone (0114 2224292) or email ([a.d.irving@sheffield.ac.uk](mailto:a.d.irving@sheffield.ac.uk))

We don't expect there to be any problems, but if there are, we will deal with these promptly. If you have any concerns about the project or any aspect of the way you have been approached or treated during the course of the project, please contact the project manager [or project lead where appropriate]:

Dr Rachel O'Hara (tel: 0114 222 0680; email: [r.ohara@sheffield.ac.uk](mailto:r.ohara@sheffield.ac.uk))

School of Health and Related Research (SchARR), University of Sheffield, Regent Court, Sheffield, S1 4DA

### Appendix 3: Consent form



Yorkshire Ambulance Service **NHS**  
NHS Trust



Participant Identification Number:

### Consent Form: Service delivery stakeholder

Title of Study: **Service evaluation of a triage intervention for Ambulance Service patients with mental health problems**

Name of Lead Researcher: **Dr Rachel O'Hara**

Please initial boxes

- 1. I confirm that I have read and understand the information sheet dated 30<sup>th</sup> June 2015 explaining the above project and I have had the opportunity to ask questions.
- 2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without there being any negative consequences. In addition, should I not wish to answer any particular question or questions, I am free to decline.
- 3. I understand that due to the small number of key stakeholders being interviewed, confidentiality or anonymity is not guaranteed.
- 4. I give permission for this interview to be audio-recorded.
- 5. I agree to take part in the above project.

\_\_\_\_\_  
Name of Participant                      Date                      Signature

\_\_\_\_\_  
Name of person taking consent      Date                      Signature

*To be signed and dated in presence of the participant*

Copies: 1 copy for participant, 1 for researcher



#### Appendix 4: AMPDS card categories for calls triaged by mental health nurses

Card number
1
2
4
5
6
7
8
9
10
11
12
13
17
18
19
21
23
25
26
27
29
30
31
35

## Appendix 5: Outcomes relating to MH triage nurse activity: AMPDS card 23 and 25

**Table 5: Outcomes related to calls triaged by MHN, AMPDS card 23 only**

Month	Triaged calls card 23	Response Rate (Response N)	Hear & Treat Rate (H&T N)	Conveyance Rate (Conveyed N)	Conveyed Cases (Conveyed N)
Apr 2015	41	70.7% (29)	29.3% (12)	93.1% (27)	65.9% (27)
May 2015	98	48.0% (47)	52.0% (51)	93.6% (44)	44.9% (44)
June 2015	96	60.4% (58)	39.6% (38)	84.5% (44)	51.0% (44)
July 2015	88	59.1% (52)	40.9% (36)	90.4% (47)	53.4% (47)
Aug 2015	67	49.3% (33)	50.7% (34)	97.0% (32)	47.8% (32)
Sept 2015	97	59.8% (58)	40.2% (39)	93.1% (54)	55.7% (54)
Oct 2015	88	59.1% (52)	40.9% (36)	88.5% (46)	52.3% (46)
Nov 2015	87	62.1% (54)	37.9% (33)	88.9% (48)	55.2% (48)
Dec 2015	82	57.3% (47)	42.7% (35)	95.7% (45)	54.9% (45)

**Table 6: Outcomes related to calls triaged by MHN, AMPDS card 25 only**

Month	Triaged calls card 25	Response Rate (Response N)	Hear & Treat Rate (H&T N)	Conveyance Rate (Conveyed N)	Conveyed Cases (Conveyed N)
Apr 2015	91	44.0% (40)	56.0% (51)	75.0% (30)	33.0% (30)
May 2015	183	37.7% (69)	62.3% (114)	79.7% (55)	30.1% (55)
June 2015	154	35.1% (54)	64.9% (100)	81.5% (44)	28.6% (44)
July 2015	178	39.3% (70)	60.7% (108)	87.1% (61)	34.3% (61)
Aug 2015	147	29.3% (43)	70.7% (104)	79.1% (34)	23.1% (34)
Sept 2015	203	42.9% (87)	57.1% (116)	79.3% (69)	34.0% (69)
Oct 2015	208	55.8% (116)	44.2% (92)	72.4% (84)	40.4% (84)
Nov 2015	234	49.6% (116)	50.4% (118)	76.7% (89)	38.0% (89)
Dec 2015	285	58.6% (167)	41.4% (118)	83.8% (140)	49.1% (140)

**Table 7: Outcomes related to calls triaged by MHN, 'other' cards (excluding card 23 and 25)**

Month	Triaged calls 'other' cards	Response Rate (Response N)	Hear & Treat Rate (H&T N)	Conveyance Rate (Conveyed N)	Conveyed Cases
Apr 2015	51	58.8% (30)	41.2% (21)	86.7% (26)	51.0% (26)
May 2015	117	47.9% (56)	52.1% (61)	87.5% (49)	41.9% (49)
June 2015	103	52.4% (54)	47.6% (49)	77.8% (42)	40.8% (42)
July 2015	109	56.9% (62)	43.1% (47)	85.5% (53)	48.6% (53)
Aug 2015	111	51.4% (57)	48.6% (54)	86.0% (49)	44.1% (49)
Sept 2015	201	60.2% (121)	39.8% (80)	88.4% (107)	53.2% (107)
Oct 2015	224	74.6% (167)	25.4% (57)	85.6% (143)	63.8% (143)
Nov 2015	249	76.3% (190)	23.7% (59)	81.1% (154)	61.8% (154)
Dec 2015	391	68.8% (269)	31.2% (122)	89.2% (240)	61.4% (240)

## Appendix 6: Data for calls before and after mental health nurse triage: card 23 and card 25

*Table 8: Data for response to all calls with AMPDS card category 23 (April 2014 - December 2015)*

Month	Calls	% of all calls	Distinct Responses	Conveyed	Response Rate	Conveyance Rate	Conveyed Cases
Apr-14	1132	1.8%	1018	791	89.9%	77.7%	69.9%
May-14	1197	1.8%	1053	823	88.0%	78.2%	68.8%
Jun-14	1222	2.0%	1086	844	88.9%	77.7%	69.1%
Jul-14	1206	1.9%	1071	810	88.8%	75.6%	67.2%
Aug-14	1197	2.0%	1089	834	91.0%	76.6%	69.7%
Sep-14	1163	1.9%	1055	789	90.7%	74.8%	67.8%
Oct-14	1186	1.8%	1067	785	90.0%	73.6%	66.2%
Nov-14	1217	1.9%	1068	805	87.8%	75.4%	66.1%
Dec-14	1089	1.5%	867	644	79.6%	74.3%	59.1%
Jan-15	1106	1.7%	944	726	85.4%	76.9%	65.6%
Feb-15	1059	1.9%	894	676	84.4%	75.6%	63.8%
Mar-15	1149	1.8%	962	739	83.7%	76.8%	64.3%
Apr-15	1240	2.0%	1054	792	85.0%	75.1%	63.9%
May-15	1209	1.9%	1022	782	84.5%	76.5%	64.7%
Jun-15	1191	1.9%	1003	755	84.2%	75.3%	63.4%
Jul-15	1351	2.1%	1157	856	85.6%	74.0%	63.4%
Aug-15	1346	2.1%	1148	832	85.3%	72.5%	61.8%
Sep-15	1250	2.0%	1091	831	87.3%	76.2%	66.5%
Oct-15	1228	1.9%	1081	797	88.0%	73.7%	64.9%
Nov-15	1207	1.9%	1037	768	85.9%	74.1%	63.6%
Dec-15	1104	1.6%	930	698	84.2%	75.1%	63.2%

**Table 9: Data for response to all calls with AMPDS card category 25 (April 2014 - December 2015)**

Month	Calls	% of all calls	Distinct Responses	Conveyed	Response Rate	Conveyance Rate	Conveyed Cases
Apr-14	1273	2.1%	1065	652	83.7%	61.2%	51.2%
May-14	1313	2.0%	1055	616	80.4%	58.4%	46.9%
Jun-14	1346	2.2%	1094	640	81.3%	58.5%	47.5%
Jul-14	1375	2.1%	1111	698	80.8%	62.8%	50.8%
Aug-14	1307	2.1%	1103	688	84.4%	62.4%	52.6%
Sep-14	1348	2.2%	1130	728	83.8%	64.4%	54.0%
Oct-14	1302	2.0%	1075	620	82.6%	57.7%	47.6%
Nov-14	1402	2.2%	1153	711	82.2%	61.7%	50.7%
Dec-14	1207	1.7%	846	493	70.1%	58.3%	40.8%
Jan-15	1146	1.8%	868	515	75.7%	59.3%	44.9%
Feb-15	1176	2.1%	909	528	77.3%	58.1%	44.9%
Mar-15	1281	2.0%	982	607	76.7%	61.8%	47.4%
Apr-15	1280	2.1%	966	565	75.5%	58.5%	44.1%
May-15	1247	2.0%	907	521	72.7%	57.4%	41.8%
Jun-15	1317	2.1%	980	546	74.4%	55.7%	41.5%
Jul-15	1429	2.2%	1080	649	75.6%	60.1%	45.4%
Aug-15	1403	2.2%	1042	563	74.3%	54.0%	40.1%
Sep-15	1162	1.9%	891	525	76.7%	58.9%	45.2%
Oct-15	1189	1.9%	920	503	77.4%	54.7%	42.3%
Nov-15	1403	2.2%	1030	594	73.4%	57.7%	42.3%
Dec-15	1391	2.0%	1058	577	76.1%	54.5%	41.5%

## Appendix 7: Conveyance before and after mental health nurse triage: card 23 and card 25

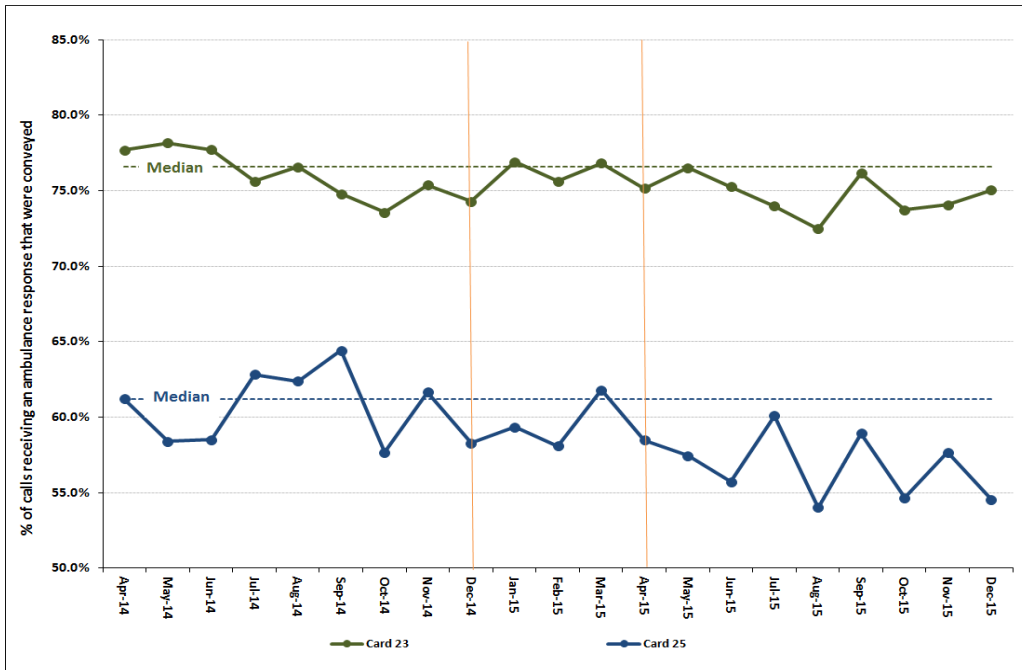


Figure 14: Run chart for calls conveyed following ambulance response: AMPDS cards 23 and 25

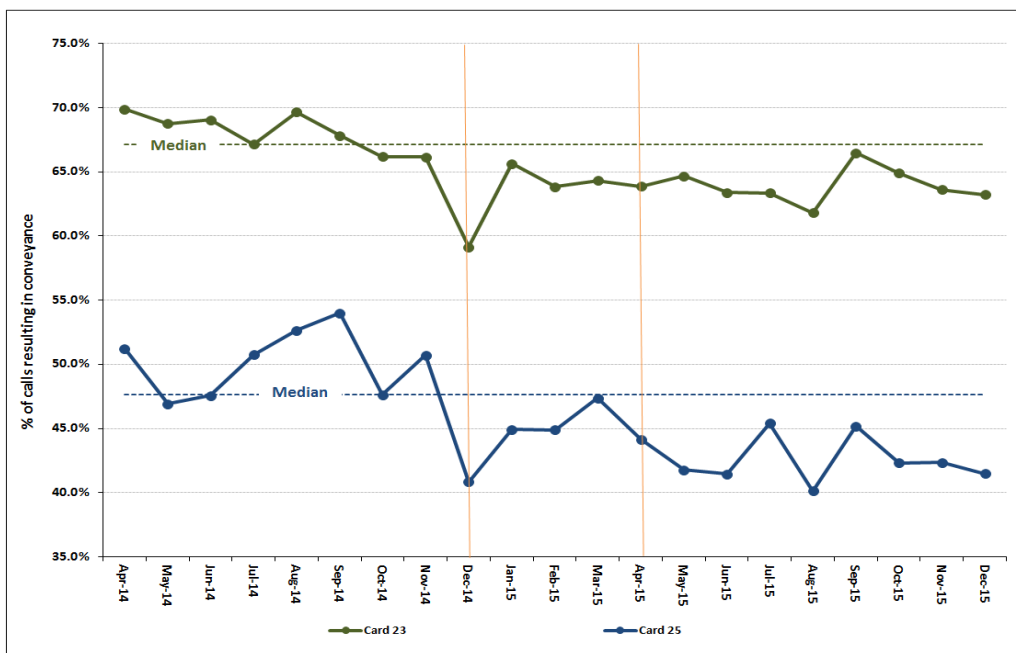


Figure 15: Run chart for total calls resulting in conveyance: AMPDS cards 23 and 25

## Appendix 8: Perceptions of mental health triage organised by staff role

Interviewee role	Positive	Negative
<b>Paramedic</b>	<ul style="list-style-type: none"> <li>+ Initial specialist triage</li> <li>+ Feeling better supported on-scene. Advice and guidance</li> <li>+ Support for on-scene management of patients</li> <li>+ Better working with external services</li> </ul>	<ul style="list-style-type: none"> <li>- Telephone limitation, i.e. lacking benefit of physical presence in patient environment</li> <li>- Not available 24/7</li> </ul>
<b>Emergency medical dispatcher/ Clinical Advisors</b>	<ul style="list-style-type: none"> <li>+ Specialist knowledge/experience resulting in better self-care advice</li> <li>+ Improved communication and referral to external services</li> <li>+ Improved support and communication with family/carers</li> <li>+ Relief from difficult calls</li> <li>+ Improved EOC staff communication and morale</li> <li>+ Feeling supported by specialists</li> </ul>	<ul style="list-style-type: none"> <li>- Clarity around mental health nurse remit and call management processes.</li> <li>- Clarity around process in relation to management of intoxicated patients.</li> <li>- Not available 24/7</li> <li>- Not trained on full triage assessment therefore unable to manage all calls.</li> </ul>
<b>Managers</b>	<ul style="list-style-type: none"> <li>+ Impact on EOC staff morale</li> <li>+ Improved interaction between EMDs and clinical hub.</li> <li>+ Improved/ sensitive patient communication</li> <li>+ Learn from positive risk assessing</li> <li>+ Improved resource use and organisational performance</li> <li>+ Improved inter-service working and referral success.</li> </ul>	<ul style="list-style-type: none"> <li>- Loose initial processes</li> <li>- Integrating mental health nurse practice into emergency care setting and requirements</li> <li>- Don't want to de-skill other clinicians</li> <li>- Staff recruitment and retention</li> </ul>
<b>Mental health nurses</b>	<ul style="list-style-type: none"> <li>+ Internal staff relationships</li> <li>+ Improved staff peer-to-peer training and support</li> <li>+ Relieve stress of difficult calls from EOC colleagues</li> <li>+ Mobilise existing contacts and networks to improve inter-agency working.</li> <li>+ Improved patient care out of ED where appropriate.</li> <li>+ Improved communication with, and referral to other services e.g. crisis team</li> </ul>	<ul style="list-style-type: none"> <li>- Further role clarity and training desired</li> <li>- Need for further training</li> <li>- Lack of discretion to upgrade/downgrade calls</li> <li>- Limited by reliance on external services who are unable to meet patient's care needs.</li> </ul>