

# NISCHR INVENT Scheme

Development of a pre-hospital mental health model-of-care for application and testing in the Support and Assessment for Emergency Referral (SAFER 4) trial

Final Report 31<sup>st</sup> July 2013

NHS Institution: Welsh Ambulance Services NHS Trust

Lead Applicant: Richard Whitfield

Signature:



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Final Report July 2013

Prepared by the Project Research Team based at  
Swansea University  
INVENT Reference Number:004/12



# Research Team

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## Introduction

This INVENT study is a preparatory step for a trial of a mental health protocol for use by paramedics in the care of 999 patients. The aim of the trial will be to evaluate the protocol as a health technology, and to determine whether it results in more patients being safely referred early to community mental health teams and fewer patients being conveyed to ED. Potential patient benefits include more appropriate, timely mental health care with better prospects for recovery and less risk of deteriorating mental health and wellbeing.

**Overall aim:** The collation of detailed service data required to produce the SAFER4 technology and a trial funding application

### **Objectives:**

- To produce mapping of locale specific community mental health provision in the three selected ambulance trust areas
- To develop and define the SAFER 4 model-of-care
- To assess the need for a mental health model of care by conducting a detailed investigation of the type and volume of mental health 999 calls in one of the selected ambulance trusts.
- To make data comparisons and estimate the volume of demand in two other ambulance trust areas

**Outputs: 1)** Definition of SAFER 4 mental health protocol and model-of-care for testing in trial and 2) the submission of the SAFER 4 HTA funding application

## Methods

We examined call and service data for 999 callers with mental health problems in each of the three ambulance trusts involved in the development of the SAFER 4 trial, namely the Welsh Ambulance Services NHS Trust (WAST), South East Coast Ambulance NHS Foundation Trust (SECAMB) and the East of England Ambulance Service NHS Trust (EEAST).

**To produce mapping data:** We telephoned all statutory mental health services for current levels and type of service provision, organised all data according to referral criteria and identified commonalities. For each area we produced a map of the community mental health pathways of care.

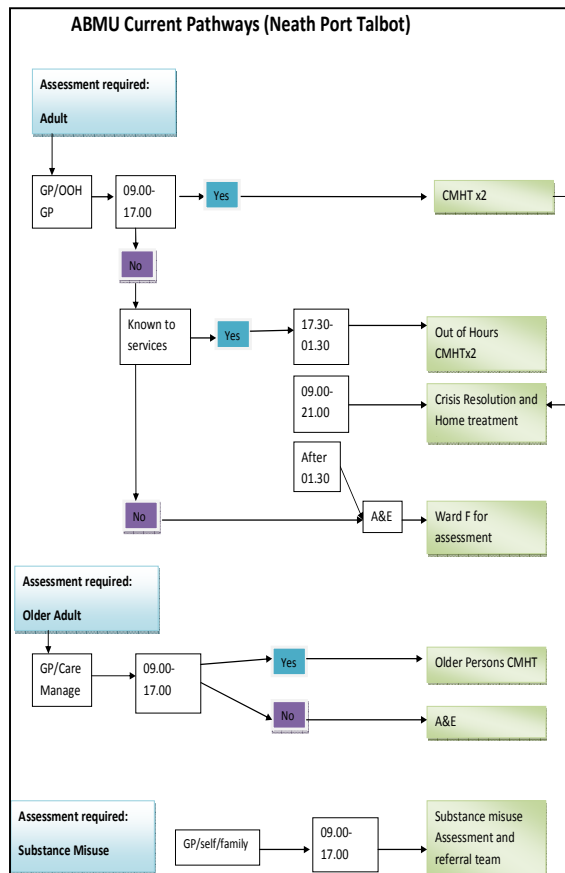
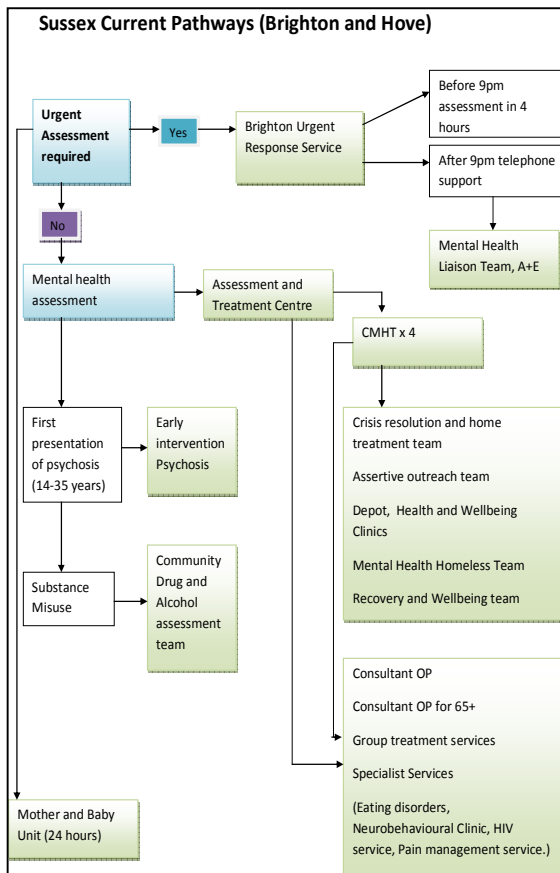
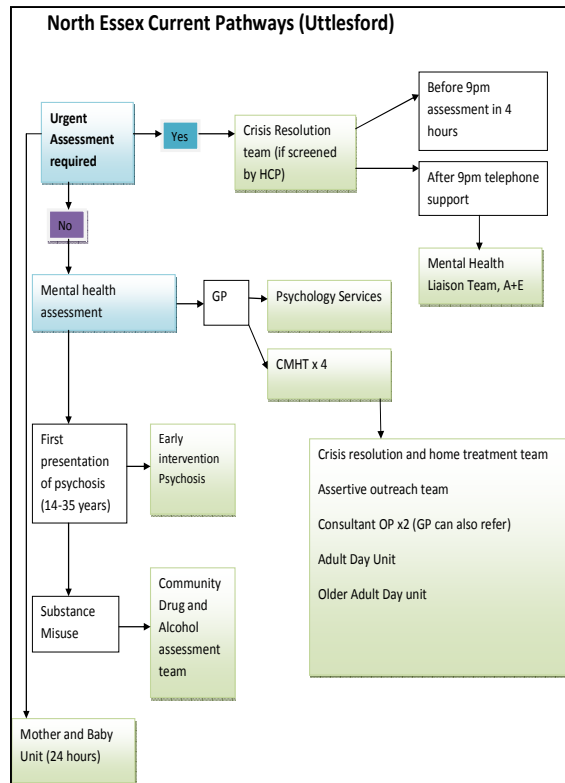
**To develop and define the protocol and model of care:** We formed a panel of experts to examine the results of the service mapping exercise. We identified the critical factors to be addressed and devised a draft generic model of care based upon an ideal model to support paramedics alongside incorporating the pragmatics of the availability of services in the ambulance trust areas. We circulated our draft to a wider panel of experts and, based upon their consensus, defined the model of care to proceed to testing within the SAFER 4 trial.

**Type and volume of 999 mental health calls:** In WAST we examined data completed by paramedics (Patient Clinical Records – PCRs) for the month of April 2012. We analysed the narrative section of PCRs on two samples from WAST: all PCRs recorded with a mental health condition code ('P': Psychiatric and 'D': Deliberate self harm) at scene and a random sample of all PCRs for the month. We coded the narrative based upon International Classification of Diseases version 10 codes. We also examined routinely collected data (AMPDS- Advanced Medical Priority Dispatch System codes) available for the same time period for the two other ambulance trusts areas. We performed frequencies and conducted all analysis on SPSS v20.

# Summary of Results

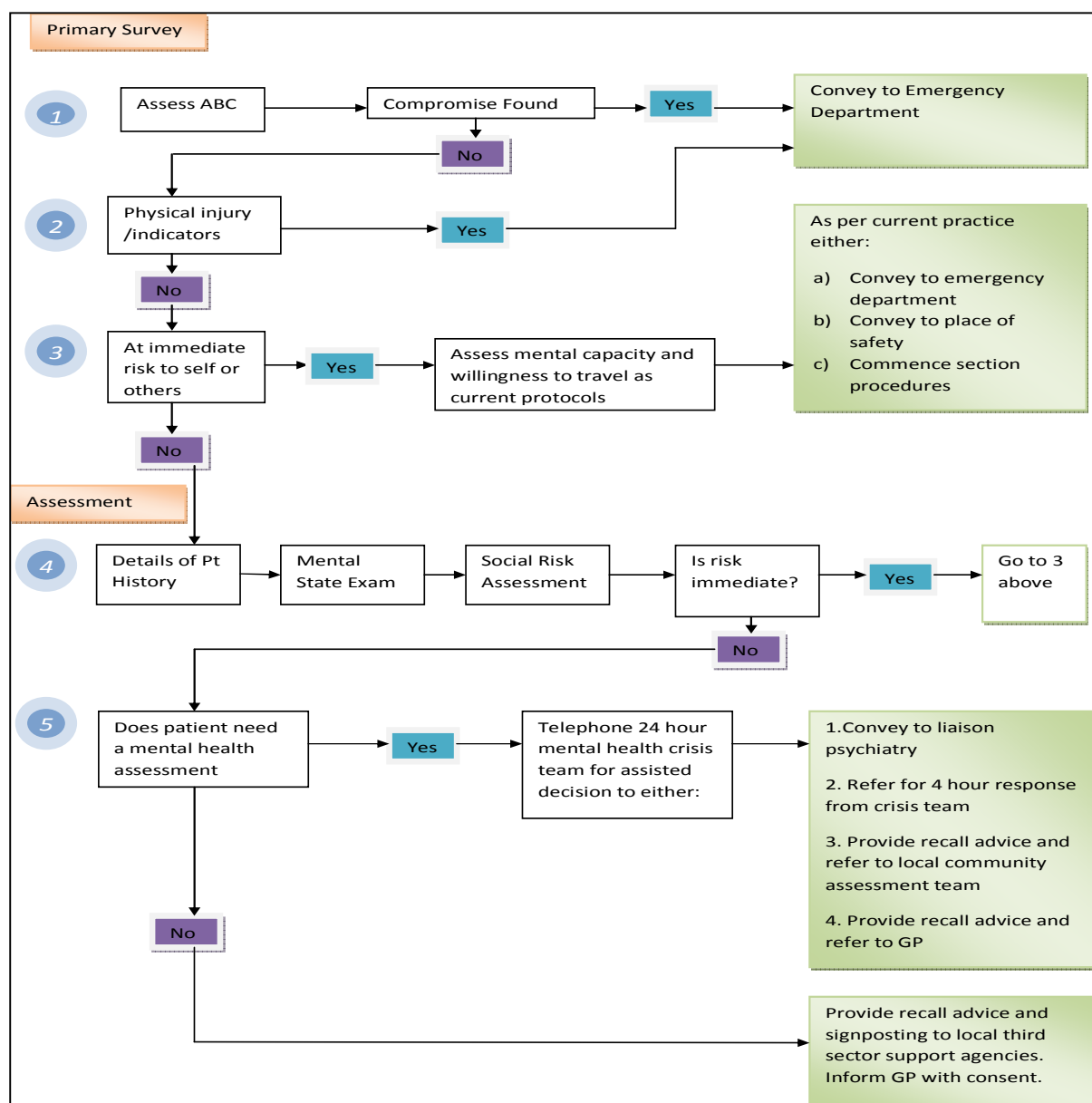
## Service Mapping

Each of the three ambulance trusts are large and are coterminous with several NHS Trust catchment areas. We produced mapping information by catchment area of statutory mental health service provision for each of the Ambulance Trusts and, as there were numerous areas with similar cover of provision, we present one example of service mapping for each of the Ambulance Trusts.



## Model of Care

Having examined the results of the locale specific mapping and identified the critical factors, the panel reached a consensus of design for the model of care. This model is proposed for application and testing in the SAFER 4 trial.



## Type of mental health related calls in WAST

We analysed the narrative of all PCRs for adult callers with a condition code of P or D (n=1642) for WAST in April 2012. Fifty three per cent of calls (n= 625) reviewed as involving mental health problems related to self harm. The conveyance rate for self harm was high, over 95%, including when the paramedic recorded that the patient stated there was no suicidal intent. The other types of mental health call also had a high conveyance rate, with over 90% for suicidal ideation, threat of self harm, psychosis symptoms, substance misuse, depression and dementia or confusion; and over 80% for, behavioural or emotional symptoms. The one type of emergency mental health call with a lower conveyance rate was anxiety at 61.6%. We also noted that approximately one third of all callers had also consumed alcohol.

### **Estimate of volume of mental health related 999 calls**

In April 2012 in WAST there was a total of 28,328 calls. The total number of PCRs with an on scene condition code of P or D was 1642 (5.8% of all calls). Our analysis of a random sample of all PCRs from adults for WAST (n=1557) found 10.7% (164) with a narrative relating to mental health problems. We examined this subset and found that approximately 37% were dispatched with a mental health code allocated by the call taker (AMPDS 23: Overdose/Poisoning or 25: Psychiatric/Abnormal behaviour/Suicide attempt), the remainder either had a missing (23%) or other code (40%). Our results show that both the condition code at scene and AMPDS codes are likely to underestimate the volume of mental health calls in Wales (WAST). Based upon our findings we estimate that volume to be approximately 2974 calls per month.

Based on the available information, the rate of dispatch by AMPDS code 23 and 25 was 3.6% and 4.2% in the two areas in England and 5.2% in WAST. The numbers of emergency mental health calls is a minimum of 827 per month in Essex and 2908 per month in EEAST. If using the results from WAST to make an approximate estimate of the volume of calls, these figures are likely to increase, and possibly nearly double.

### **SAFER4 Proposal**

The INVENT research team worked together with the Wales Ambulance Service and two services in England in a research development group (RDG) to provide data and establish a feasibility trial of the protocol developed in the INVENT study. The RDG completed a proposal for SAFER 4 Mental Health which was submitted to the NIHR HTA in June 2013, with a short listing outcome expected in August.

### **Ongoing work**

We will conduct the SAFER4 Mental Health trial (subject to funding) to introduce the mental health protocol and model of care, a clinical support intervention (plus training) for paramedics, and measurement of process and patient outcomes, operational performance and cost effectiveness. This will allow us to assess benefits relating to use of NHS ambulance and acute Trust resources, avoidance of EDs when unnecessary, service user health, quality of life and satisfaction, associated reductions in emergency admissions and repeat calls to 999 ambulance services, and ultimately reduced NHS and overall care costs.

### **Pending publications**

We have produced a publication plan for a peer review publication and intend to submit a paper to the British Journal of Psychiatry discussing the frequency and types of emergency 999 mental health callers; and the model of care for trial by paramedics in order to improve links between pre hospital emergency care and the mental health care system. We also intend to disseminate this work by presenting at all appropriate conferences. International conferences will be included, with particular reference to Australia as this work will be of relevance to their pre hospital emergency care system.