

Bridging the quality chasm in emergency mental healthcare, with
access to the mental health EPR in the emergency department

Louise Prendergast

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Declaration

I declare that the work described in this dissertation is, except where otherwise stated, entirely my own work and has not been submitted as an exercise for a degree at this or any other university.

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July 17th 2018

For Ruby and Max

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I find it hard to know where to begin. So many people have helped me achieve completion of this study.

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Summary

Background: The Mental Health Information System (MHIS) was implemented on June 29th 2016 for liaison psychiatry staff access in the Emergency Department (ED) of an urban university tertiary referral hospital. This ED sees in excess of 55,000 patients a year and approx. 4% are mental health related cases. The MHIS is a mental health electronic patient record (EPR) system, which holds the entire primary mental health record, for a cohort (approx. 30%) of patients who present to this ED for emergency psychiatric services annually. The mental health records for the rest of those presenting are paper based files, which would be unavailable in the ED setting.

Objectives: The primary objective of this research is to investigate if access to the mental health EPR at point of care in the ED, presents opportunities for more personalised, patient centred quality care

The researcher also sought to validate anecdotal reports around the efficiencies afforded to clinicians, patients, and service.

Design & Measures: A mixed methods study, cross sectional in design, and based on data relating to referrals to the liaison psychiatry services within the ED setting. The qualitative aspect of this study involves interviews with liaison psychiatry staff to gain an understanding of their experience working with both cohorts of patients, and the difference access to MHIS makes to their work processes. Datasets for both cohorts were also analysed to see if any measurable impact on various milestones, such as assessment duration, length of stay, and also the decision to admit, were observed.

Results: It was agreed that an MHIS EPR offered many opportunities for enhanced service delivery. More quality time with the patient, improved patient provider relationships and less restricted more personalised planning were reported. The quantitative study also showed a significant reduction in psychiatric admission when an EPR was available with significant efficiencies in follow up administrative procedures also observed.

Conclusion: Yes opportunities for a more personalised and patient centred care and enhanced service provision are presented by access to the mental health EPR at point of care in the ED

Abbreviations

Abbreviation	Detail
DSH	Deliberate Self Harm
ED	Emergency Department
EHR	Electronic Health Record
EMR	Electronic Medical Record
EPR	Electronic Patient Record
LOS	Length of Stay
MDT	Multidisciplinary Team
MHIS	Mental Health Information System
NCP	National Clinical Programme
OPD	Out Patient Department
OS	Original Site
PAD	Psychiatric Advanced Directive
PAS	Patient Administration System
PES	Psychiatric Emergency Services
VFC	Vision For Change
VPN	Virtual Private Network

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1 Introduction

This chapter will present the reader with the motivation behind this research project. It will provide them with a brief history of the mental health information system in question (MHIS) and the background to the project to implement the MHIS in the study site. The research question which underpins this project and the methods of investigation applied will also be introduced, along with a brief overview of the dissertation in general.

1.1. Background and Motivation

In 2006 the expert group on mental health in Ireland lobbied for the implementation of an Electronic Patient Record (EPR) in Vision for Change (VFC) (2006). The group declared that a comprehensive, integrated IT system was a key requirement for modern mental healthcare service delivery. They stated that the system must be designed specifically to collect, collate and distribute the information required in the various locations where mental health services are provided. The expert group reviewed their policy document 10 years later and found that little or no progress had been made in this regard. Though there is a national strategy to deliver an Electronic Shared Care record (HSE, 2015), to date (June 2018) there is still no mental health electronic patient record system available to mental health services nationally in Ireland.

Throughout the literature, much of the research into EPRs and electronic medical records (EMRs) and electronic health records (EHRs) is heavily focused on the financial costs of implementation or the work practice change management aspect (Clarke et al., 2015). Little is available with regard to the opportunities for efficiencies offered by EPRs or their advantages with regard to personalised, patient centred care over paper records, especially in mental health which has lagged behind in EPR adoption for many years (Tsai and Bond, 2008, Knickman et al., 2016, Kokkonen et al., 2013).

Furthermore, research into the specific area of the impact mental health EPRs make to service delivery in psychiatric services and in particularly in an ED setting, is limited and almost non-existent. Much of the focus in literature is around attitudes of staff and educational requirements /gaps (Letvak and Rhew, 2015)

In the relatively few studies sourced by the researcher which focused on advantages, it was reported that similar to EPRs of any discipline, access to the mental health EPR delivers many advantages over their paper counterparts, such as providing rapid access to notes at the point of care (Somers, 2014, HSE, 2012a, Tsai and Bond, 2008). Notes in the EPR are more legible and often more accurate (Peterson and Wickeham, 2011, Tsai and Bond, 2008). They are organised in a coherent manner so that information is easily retrieved, which is important in case of mental health emergency. The time and effort utilised to decipher handwritten notes and the associated risks of misinterpretation would further support the rationale for implementation of a mental health EPR (Somers, 2014, Xiao and Acosta, 2016, Houston, 2010, Hripcsak et al., 2007, Tsai and Bond, 2008).

In their (2008) study of medication documentation in EPRs and paper charts across three community mental health centres that had recently implemented EPRs, Tsai and Bond found that medication history in the EPRs were more complete and significantly faster to retrieve information from. The authors reported these findings as significant in relation to mental health, where a history of medications chronological the treatment pathway for patients and is a crucial support in making treatment decisions. They assert that prescribers need to know what medications a patient is taking and why.

Further to this, it is often the case in mental health, that multiple charts are located in various geographical sites such as inpatient units, community clinics and day hospitals (HSE, 2006, Somers, 2014, SSVMS, 2015) which reinforces the argument that access to the EPR improves efficiency and reduces risk (Dawdy et al., 1997, Greene, 2013b, Peterson and Wickeham, 2011, Houston, 2010).

1.1.1 The MHIS

The MHIS has been designed in house, by the ICT department of a leading mental health service in Dublin, Ireland. For the purpose of this dissertation this service will be referred to as the “Original Site” (OS). From its inception in 1995, MHIS has grown from a basic Patient Administration System (PAS) to a comprehensive clinical information system, supporting clinical and administrative functions, for the entire child, adolescent and adult mental health services in both the community and inpatient hospital settings of the OS. The MHIS is the primary clinical record for all patients attending these services.

The system was born out of recognition that the multidisciplinary and multi-location aspects of mental healthcare service delivery, make it vital that the patient record follows the patient, and is available at the point of care for all clinicians in all locations, often simultaneously, which is impossible to achieve with a paper chart. Throughout its lifetime, design of the MHIS has been clinically led, incorporating recommendations from the Mental Health Commission and other regulatory bodies.

One of the OS services is a community based adult mental health service, serving a population of over 175,000. Out of hours emergency support for patients attending this service is provided by the liaison psychiatry team in the emergency department of a leading academic teaching general hospital, which is the study site.

1.1.2 The Study Site

The study site is the emergency department (ED) of an urban university tertiary referral hospital, seeing in excess of 55,000 patients a year. Approximately 3-4% of overall attendances involve mental health presentations. This emergency department is the out of hour's regional acute assessment route for a number of different catchment areas; one of those is the OS with approximately 350 individual presentations annually.

1.1.3 National Clinical Program for Deliberate Self Harm (DSH)

In 2014 The National Clinical Programme (NCP) for the assessment and management of patients presenting to the emergency department following deliberate self-harm was first introduced to the ED setting. One of the aims of this programme is to ensure that all patients who present to the ED following self-harm or suicidal ideation will receive

a prompt biopsychosocial assessment, which for the purposes of this paper will be referred to as a psychiatric assessment. All patients should also receive an emergency care plan before leaving the ED.

Under this programme all patients including those seen out of hours should receive a follow up phone call from a clinical nurse specialist within 24 hours of ED discharge to offer support, etc. Bridging strategies including further phone calls should be employed until such time as the patient has been confirmed as having attended a follow up outpatient department (OPD) appointment (HSE, 2017).

1.1.4 Project to Implement MHIS in ED (Study Site)

As the MHIS was designed and developed to support in-house service delivery needs of the OS, originally only the staff of the OS could access the MHIS. The OS offers various mental healthcare services across multiple sites and MHIS is used in all of these sites, one being a community based adult mental health service serving a population of over 175,000 in the Dublin South East area. Out of hours emergency support for patients attending this service, is provided by the liaison psychiatry team in the emergency department of the study site. It is important to note that the study site is a completely separate and independent entity to the OS.

Historically when patients of the OS presented to the study site for emergency treatment, the staff in the ED of the study site would have no details of their past psychiatric history, medication history etc. They would therefore try to contact the on-call doctor of the OS (who may not know the patient) for a synopsis of the patient's psychiatric history, medication details and current multidisciplinary team (MDT) care

plan etc., which the on-call doctor obtained from a brief review of the patient's EPR. This could be quite a lengthy process, which is not helpful to patient or clinician in emergency situations. However it was still more favourable than calling the doctor on call for patients for whom no EPR was available, since if they had no prior knowledge of the patient, they had no electronic record available to review and therefore were not in a position to offer any history at all, as charts were most probably locked in a medical records office unavailable outside normal business hours 9-5.

Both the OS and the study site felt the risk to patients and staff would be greatly reduced, and patient experience and outcomes enhanced, if access to the electronic patient record (EPR) for patients of the OS be made available to the liaison psychiatry staff in the study site at point of care in ED, and in the liaison psychiatry office, to support follow up care. The risks referred to included;

- Prescribing risks
- Patient safety
- Safety of staff
- Unnecessary admission to acute ward (risk management)

On June 29th 2016 the MHIS was implemented in the study site, ED and liaison psychiatry offices. This was quite a significant undertaking in Irish health care service delivery, as it was two completely separate healthcare providers undertaking to share access to patient's electronic patient records. Certainly in Irish mental health care it was an innovation.

Thereafter, for OS patients who present to the study site, liaison psychiatry staff can access the patient's complete mental health record (EPR). This means their full medication history, and diagnosis, the full patient history and background information from other providers and family (collateral), all clinical notes from the outpatient MDT team, the most recent care plan and care plan history, details of outpatient attendances, inpatient episodes and clinical notes etc. are available. Liaison Psychiatry staff also have access to the secure messaging system, within the MHIS to message the patient's consultant and indeed entire treating team in the community. The patient's community based team can likewise make contact with the liaison service to follow up on a patient or seek further detail of their presentation to ED. Basically a swift and secure channel of communication was introduced between the two services.

1.2 Developing the research question

In 2001 the Institute of Medicine launched its landmark report "Crossing the Quality Chasm: A New Health System for the 21st Century (Institute of Medicine, 2001). This report has been regarded as a transformative document for healthcare service delivery. Key terms such as, "evidence-based," "patient-centred," and "transparent" which are now part of the everyday healthcare lexicon were introduced in this report. In 2006 the IOM reviewed this chasm research to see if the same quality dimensions applied to mental healthcare service delivery; they found that indeed yes, they did apply (IOM, 2006).

The six dimensions of quality healthcare as determined by the IOM are safe, effective, timely, patient-centred, efficient, and equitable.

These are the same terms that are used widely to promote the implementation and use of electronic records in healthcare internationally and by the Irish health service (Institute of Medicine, 2001, HSE, 2015, HSE, 2006, Ser et al., 2014, IOM, 2006).

During and since the implementation of the MHIS into the study site the principal researcher overheard various anecdotal comments from stakeholders supporting these points of view, and wondered if analysis of data would validate these perceptions.

The MHIS holds the mental health electronic patient records (EPRs) for a specific cohort of patients attending the study site, and the rest of the presenting patients do not have a mental health EPR available for consultation. The researcher felt this provided a unique opportunity to investigate if analysis of the measurable data relating to LOS, duration of assessment and follow up, coupled with thematic analysis of the honest experience of front line staff, would advocate that yes indeed access to the EPR at point of care, did deliver enhanced opportunities for patient centred care and efficiencies in care and service delivery.

Therefore the following primary research question was developed;

“Does consulting the mental health EPR afford Liaison Psychiatry staff an opportunity to offer more personalised, patient centred, quality of care, to those presenting to ED?”

As metrics such as personalised and patient centred are hard to quantify and as the literature review will show that patients equate efficiencies of care which (can be measured) with quality, the researcher felt a supporting question must also be addressed;

“Does consulting the mental health EPR afford Liaison Psychiatry staff enhanced opportunities for efficiencies in care and service delivery?”

1.3 The Purpose of the study

The primary aim of this study is to explore in the form of interview with front liaison psychiatry staff, the differences in their approach to care and follow up for those presenting to ED, with and without an EPR available for consultation. It is hoped to reveal that yes indeed access to the EPR affords staff an opportunity to provide a more individualised, patient centred, plan of care, which research says leads to improved outcomes for all patients (Bergen et al., 2010, Institute of Medicine, 2001, IOM, 2006).

Furthermore, analysis of available quantitative data will be undertaken to see if findings support the perception that access to the mental health EPR at the point of care, promotes a more timely transition through the ED, and more efficient follow up services for patients.

Dissertation outline

The research presented in this dissertation is broken up into 7 chapters; a brief outline of the content of each is detailed hereunder;

Chapter 1: Presents the research question and the background to the study

Chapter 2: Details the review of literature regarding use of EPRs in Mental Healthcare

Chapter 3: The research methodology for both quantitative and qualitative aspects of the study is described in this chapter.

Chapter 4: Provides analysis and evaluation of the qualitative and quantitative data.

Chapter 5: Discusses the findings of the three elements of the study

Chapter 6: Concludes the paper with analysis of the study limitations, a synopsis of the findings, and the opportunities for further research.

2 Literature Review

2.1 Introduction

Throughout the literature terms such as psychiatric emergency, behavioural emergency, and mental health emergency are all used interchangeably to mean patient presentations to the ED with symptoms such as self-harm, suicidal ideation or attempt, anxiety, depression, psychotic episode etc. (White, 2010). These interchangeable terms extended the scope of literature reviewed, a task which was further complicated by the interchangeable use of the terms EHR, EPR, and EMR to mean an electronic file of a patient's (mental) health history, and the various terms used to describe the emergency department, such as ED, ER, and PES (psychiatric emergency services) (López-Robledo et al.). The numerous ways to refer to a psychiatric assessment, such as psychological assessment, psychiatric assessment, and in more recent times psychosocial, and biopsychosocial assessment, added further to the complexity of the review. For the purpose of this paper the terms ED, EPR, psychiatric emergency and psychiatric assessment will be the standard terms used for these four factors respectively.

The methodology for this literature review was as follows. The National Library of Medicine (NCBI / PubMed) and PsycInfo (American Psychological Association) and Trinity College Dublin Library, were searched using combinations of the following search terms: "Access to" "Behavioural Health", "Chart" "collateral", "ED", "efficiencies", "EHR", "Emergency Department", "EMR" "EPR", "ER", "implementation", "information", "mental health", "patient centred", "patient

history”, “psychiatric”, “quality of care” “record” “risk”. Additional articles were identified in references in relevant papers and book chapters, as well as government and health service reports both national and international. Corresponding authors were contacted on Research Gate to request copies of specific papers identified in the search. Access to some restricted articles was possible at the original site hospital library.

Literature searches relating to mental health EPRs at point of care in the ED, and indeed just mental health patient records or charts at point of care in the ED, returned little or no results with regard to research into their implementation or efficiencies derived from them. As will be elaborated further in section 2.9 the fact that mental health is a late adopter of EPRs may be a good reason for this.

One clear and resounding message from almost every paper reviewed in relation to mental health presentations in ED, was the enormous impact this patient population has on the ED environment, resources, and length of stay for patients of all medical issues. This issue is covered in section 2.2.

Deliberate Self Harm (DSH) was identified across the board as being the presenting complaint which impacts most on ED resources. With the huge international focus on the prevalence of DSH and suicide ideation and completion worldwide, it was unsurprising that there was a vast literature return relating to this topic, and the specific issues it presents in ED. The topic of access to mental health records for the ED care of this population is the focus of section 2.3.

Arising from this investigation, the importance of a psychiatric assessment, and the availability of a patient's psychiatric history and collateral information to support that assessment, emerged as significant in the management of psychiatric emergencies and best outcomes for these patients presenting to ED, and also impacting on repeat presentations. The psychiatric assessment and psychiatric history of a patient would be considered elements of a patient record, be it electronic or paper based, are the focus of sections 2.4 and 2.5.

The patient-practitioner relationship, personalised care, and the issue of stigma, were identified in the literature as impacting greatly on patient and staff experiences in ED. These dynamics are explored in section 2.6.

Most literature searches around EPRs, efficiencies and quality of care, will return a landmark paper by the Institute of Medicine (IOM) (2001) called "Crossing the Chasm". The IOM revised their 2001 paper in 2006 specifically with regard to quality in mental health care service provision. The 6 dimensions of quality detailed in this 2006 paper were reflected to various degrees throughout this entire literature review. Dimensions such as personalised, patient centred, efficient, also featured in anecdotal reports from providers in the study site post MHIS implementation. As these terms instigated this research project and influenced the research question, this report is presented in section 2.7.

Section 2.8 details the challenge of EPR adoption in the field of mental healthcare, as presented in the literature. Section 2.9 highlights the gap in the literature which this project addresses. Finally, section 2.10 concludes the chapter.

2.2 Mental Health in the Emergency Department

A recent systematic review of evidence from 63 countries suggests a global lifetime prevalence rate of approximately 29% for common mental health disorders (Wozney et al., 2017, Steel et al., 2014). This is a significant concern for health services internationally. General hospitals, and in particular the Emergency Departments (ED) of general hospitals, are often environments of high mental health morbidity (HSE, 2012a, Sayah et al., 2014, Marynowski-Traczyk et al., 2013, Brooker et al., 2007). Longer ED stays, and complex assessment needs are typically associated with patients presenting with mental ill health and medical comorbidity (Boudreaux et al., 2009, Stephens et al., 2014b).

Clinicians in the ED are faced with making difficult decisions in complex circumstances, fraught by limited information, resources and time (Unick et al., 2011). It is widely accepted that the risks relating to the care of this population are often unique and challenging, and staff often feel ill-equipped to deal with these risks and needs (HSE, 2012a, Pearlmutter et al., 2017, Stephens et al., 2014b, Morphet et al., 2012, Marynowski-Traczyk et al., 2013, Nolan et al., 2015, Misek et al., 2015, Bost et al., 2015, Letvak and Rhew, 2015, Clarke et al., 2005, Hart, 2008).

In Ireland, and internationally, demand for acute and emergency mental health care exceeds the current supply of available services, and it is well documented that the ED has increasingly become both the initial point of contact for mental health crisis assessment, and the main entry into the mental health system (Marynowski-Traczyk et

al., 2013, Morphet et al., 2012, Bost et al., 2015, Brooker et al., 2007, Unick et al., 2011, Shah et al., 2015, Baraff et al., 2006, Lin et al., 2014, Perera et al., 2018).

Boarding is the admission of a patient to a bed in ED while awaiting a bed in a ward or ward transfer. Boarding of psychiatric patients is associated with poor outcomes for patient and increased risk to patient, staff and other ED patients (Simpson et al., 2014, Pearlmutter et al., 2017, Stephens et al., 2014a). Boarding has been widely covered in the literature especially in relation to insurance implications, extended LOS and ED overcrowding (Weiss et al., 2012, Sayah et al., 2014). However, boarding is not commonplace in the Irish model of mental healthcare service delivery.

Admission to hospital for mental health issues causes an enormous disruption to family and work life, while the stigma in the community and at work post inpatient psychiatric episode is a source of great distress to patients (Brooker et al., 2007, Sinclair et al., 2011).

Perhaps unsurprisingly, Brooker (2007) states that no studies exist (at the time of their research), where patients would prefer an inpatient stay when an alternative is available. In fact, they found that patients have stated that in cases where this has occurred, the rate of dissatisfaction is very high.

It is accepted throughout the literature that with its associated risks of hospital-acquired infections and additional cost related to bed occupancy, and delays in ED awaiting a bed, finding alternatives to an inpatient episode where at all possible is of

benefit to the patient, service and society (Brooker et al., 2007, Sinclair et al., 2011, Lyons et al., 1997, Somers, 2014, HSE, 2006)

2.3 Deliberate self-harm presentations to ED

The 2007-2016 statistics from the Irish National Suicide Research Foundation (NSRF) found half deliberate self-harm (DSH) presentations were made out of hours, between 7pm and 3am, with peak time midnight. Sunday and Bank Holiday Monday are two of the three peak days. This of course coincides with the peak emergency care timeframe when day services and access to usual support personnel is depleted (NSRF, 2017).

Universally DSH is accepted as the single biggest risk factor or pre indicator of suicide (Lin et al., 2014, Nordentoft, 2007, Carroll et al., 2014, Cooper et al., 2005, Woo and Sultzer, 2009, Feeney et al., 2005, Kawahara et al., 2017, Perera et al., 2018) with the rate of suicide among those who have previously self-harmed reported as being 100 times that of the general population (Sinclair et al., 2011, Carroll et al., 2014, HSE, 2012a, Cooper et al., 2005). Therefore DSH presents a significant challenge to emergency departments both in relation to resources and capacity.

In 2010 19.5 % of DSH presentations were repeat acts, with the majority being within three months of the previous episode. Seven year analysis by the NSRF in Ireland from 2003-2010 found that 545 individuals engaged in 9758 DSH acts in the period representing 11.2% of all DSH acts in that timeframe. This highlights the clear impact of DSH on ED resources. In their four year cohort study of 7,968 patients in Britain exploring suicide after deliberate self-harm Cooper et, al. (2005) found that the

suicide rate was highest within the first 6 months post DSH presentation to ED, and therefore follow up support and intervention during this high risk period would be most beneficial in efforts to reduce the rate of complete suicide. The following year Baraff et al., (2006) in their survey of 346 EDs in California made the similar observations acknowledging the ED's critical role in suicide prevention. These findings were supported in research in Taiwan by Lin et al., (2014) in their retrospective study of those who presented with suicidal behaviour to a Taipei general hospital ED from June 2004-May 2005.

More recently NSRF (2017) reported a worrying increase in trend where 22.4% of DSH presentations to ED in 2016 were repeat acts, and worryingly 13% left without psychological assessment.

According to their national survey (Bennewith et al., 2005) found that self-discharge rates were higher when patients had presented out of hours, when staffing rates available for assessment were reduced in the ED.

2.4 Importance of psychiatric assessment in ED

The role of the liaison psychiatry team in ED and their ability to assess their patients in a timely manner is deemed by Brooker (2007) and Baraff (2006) as a significant contribution to the ED system, and most importantly, to psychiatric patients.

Research has found that adherence to follow up psychiatric outpatient treatment has a positive impact on the rate of subsequent suicide attempts (HSE, 2012a, Lin et al.,

2014, Bergen et al., 2010, Bennewith et al., 2005, Kapur et al., 2004, Carroll et al., 2014) which would play a role in unburdening the emergency health system (Sinclair et al., 2011, HSE, 2012b).

In addition to this, the rate of referral and attendance to psychiatric outpatient treatment is strongly associated with ED on-site psychiatric assessment (Nordentoft, 2007) and as such the importance of psychiatric staff availability in the emergency department to perform psychiatric evaluations and risk assessments was a recurring theme in literature (Baraff et al., 2006, Brooker et al., 2007, Sinclair et al., 2011, HSE, 2014, Letvak and Rhew, 2015)

Findings arising from Bergen's (2010) research, which consisted of monitoring the follow up of approximately 10,000 self-harm ED patients over a 24 month period, supported international best practice guidelines that every patient who presents to ED following an act of self-harm should receive a psychiatric assessment (HSE, 2012a, Excellence, 2004, NICE, 2004, Knesper, 2011).

In their rigorous investigation of associations between psychiatric assessment in the ED, following an episode of self-harm and subsequent repetition and re-repetition, the authors found that assessment appeared to represent a significant benefit in reducing the instance of repetition and therefore was valuable to the individuals involved and also to emergency clinical services. In this study patients with no previous history of DSH were the least likely to repeat within 100 days at 11%; however, when a psychiatric assessment had been performed this reduced to 6%. They also found that a history of DSH was associated with a 55% increase in the likelihood of repetition. In

approximately 36% of these high risk cases, where an assessment was not undertaken the individual repeated an act of DSH within 100 days; however this number decreased to 28% where a psychiatric assessment was completed

2.5 Importance of access to patient psychiatric history in ED

Rapid sharing of patient information is critical to emergency mental healthcare service delivery (HSE, 2012a). Instant access to a patient's medical records at the point of care allows informed decisions in relation to diagnosis, medications and treatment and interventions such as restraint, and is widely accepted as being consistent with recovery orientated approach to treatment (Greene, 2013a, Petrik et al., 2015, Wilson and Zeller, 2012, Tsai and Bond, 2008, Feeney and Moran, 2007).

Where appropriate, such information supports the clinician in making a decision to discharge and refer back to the community services (Feeney and Moran, 2007, Brooker et al., 2007). This negates in many cases the need for hospital admission due to risk, a decision often made in the absence of quality patient history and collateral (Kozubal et al., 2013). In the absence of credible patient history Lyons (1997) found that in many cases less acute patients are often treated like a more severe case, as clinical staff act in fear of risk.

Past psychiatric history, often referred to as background and / or collateral information, is information about the patient which is sourced from family members, other medical providers, police, and / or the patients' medical records (Lincoln, 2002, Carey and Simons, 2000). Obtaining collateral takes time and resources, and can add

to the patient length of stay (LOS) in ED while the treating clinician tries to build a picture of their past psychiatric history and what may have brought the patient to this crisis point, supporting the decision to admit (possibly involuntarily) or not to admit (Feeney and Moran, 2007, Lincoln, 2002).

Research (Segal et al., 2001, Lincoln, 2002, Petrik et al., 2015) indicates that in certain situations emergency psychiatric clinicians are receptive to data, but less so to opinions, such as those offered by family members or associates accompanying the patient. This is due to the fact that context and setting can impact how mental health issues present or are perceived and introduce a possibility of bias (Petrik et al., 2015). Data may include evidence of the failure, or success of alternatives to hospitalization, or certain medications. Collateral information is believed to heavily influence critical decision making process around restraint, medications, and admissions, discharge planning etc. and helps guard against the influence of bias or coercion (Lincoln, 2002, Segal et al., 2001, Feeney and Moran, 2007). The absence of such valuable information can lead to less-effective treatments being prescribed, rather than more personalised, patient centred interventions, as a precaution when trusted data are not available (Feeney and Moran, 2007, Hripcsak et al., 2007, Zelle et al., 2015).

When dealing with substance use among psychiatric patients, Carey et al., (2000) explained that confidence is enhanced for clinicians in their understanding of the issues presenting, when multiple indicators develop a consistent picture of the patient's behaviours. Sources of collateral information include collateral informants (those who the patient consented could be contacted - family, friends etc.), medical records, laboratory and biomedical analysis. They found that in most cases collateral

informants rarely provided new information to that disclosed by the patient, and depending on the nature of the issue, informants will not know the full extent of the substance misuse. The authors noted that another obstacle to gathering such information was that collateral informants may not be available for patients deemed to be socially unstable. In these cases access to the patient's mental health record would support the clinician.

According to standard 2.3.1 of NICE (NHS, 2016) if improvements are to be made regarding access to efficient, effective, emergency mental healthcare, it is imperative that emergency staff have on site access to current mental health records of those presenting with psychiatric emergency.

In Ireland mental healthcare service delivery is based on a multidisciplinary, community centred model of service delivery. Consequently, in the majority of cases, as the chart is paper based, it is fragmented, due to the multi locational aspect of this domain (HSE, 2006). Therefore when a patient presents to the emergency department, it is extremely difficult for the treating clinician to get a clear picture of the person's history, and an understanding of what circumstances may have brought them to this emergency and importantly their preferred treatment options. Feeney et, al. (2007) explained that in cases where the patient maybe too unwell, or intoxicated to provide background information themselves, access to reliable information sources at the point of care in ED, is invaluable, with which Wilson (2012) and Petrik (2015) agreed.

Hripcsack et al., (2007) further explained that as presentations to the ED are unplanned and urgent in nature, the information required by the treating clinician is often not conveyed in advance. He continued that though patients and caregivers may be asked to provide such information, many are ill prepared for this important role, and find it distressing. While this is prevalent in presentation across the spectrum of ED presentations, it is particularly applicable to mental health presentations in the ED due to their complexity.

In their research including approximately 10,000 self-harm ED patients who were followed up for a 24 month period (Bergen et al., 2010) found that access to the patient's psychiatric record at the point of care in ED to facilitate a thorough and individualised assessment and plan of care was imperative.

66% of psychiatrists who responded to Feeney et, al. (2007) said that they would have made different decisions in some cases had the full patient history been available to them.

In their survey of the top 18 hospitals in USA, Kozubal (2013) found a clear association in readmission rates when the psychiatric notes were available as part of the hospital's internal EPR; a patient was 27% less likely to be readmitted within one week of discharge if the psychiatric notes were available to psychiatric staff other than the patient's treating team; if the psychiatric notes were made available to non-psychiatric staff that figure rose to 40% fewer readmissions within the first week following discharge.

Interestingly Unick et al., (2011) in their study of three months consecutive admissions to San Francisco's only 24 hour psychiatric emergency service (n=1035), found a statistically significant, and one could argue, logical relationship between a higher number of psychiatric ED admissions, and a lower rate of admission to inpatient psychiatric care from that ED, reflecting the impact patient specific clinical knowledge, and familiarity with the patient's history, can make on decisions to admit or discharge.

Published in the same year (Knesper, 2011) placed at the heart of their strategy for suicide prevention, a concept of continuity of care, where providers exchange all the necessary clinical information required to support the patient in crises and beyond in a timely manner. Having found that the patient's psychiatric experience and intervention in the community setting is crucial to their support in ED, they refer to this information sharing as "a chain of survival" and, and believe it "offers a foundation for anchoring a transformed system for providing mental health care in America".

Sierra Sacramento Valley Medical Society (SSVMS) represents over 3,200 physicians and their patients across three Californian counties. Since 1960, SSVMS has organised an Emergency Care Committee (ECC) that includes the medical directors of the EDs from all 12 hospitals in the Sacramento region. Meeting bi-monthly, they study issues relating to all emergency care services and facilities in the area. In recent years the significant increase in mental health presentations to their EDs has been the subject of discussion and concern. Every month over 1600 patients experiencing a mental health crises presents to one of their EDs, a number which continues to rise. This influx has

strained the ED resources in the region and as a result the wait time for patients experiencing both medical and psychiatric emergencies had extended dramatically. With a backdrop of these worsening trends the (SSVMS, 2015) white paper was developed with the goal of assessing the historical issues which led to the crises, and offering solutions for increased quality and coordination of care for mental health patients. Their first recommendation was the implementation of an electronic Health Information Exchange (HIE) in the region.

Though the SSVMS authors acknowledge the cause of the rise in mental health emergency presentations to ED is complex, a view that is internationally accepted (Chang et al., 2011, Letvak and Rhew, 2015, Misek et al., 2015, Carroll et al., 2014, Bost et al., 2015, Shah et al., 2015), members of SSVMS collectively agreed that one clear solution which would improve communications, reduce ED overcrowding, and improve access to emergency mental health services, was a mental health EPR available across services. The authors cited findings from a Washington health information exchange project as evidence of this. In 2009 Washington State became increasingly concerned about the costs of their emergency healthcare. They subsequently introduced a HIE system, with the objective of giving clinicians access to comprehensive patient health information from across multiple Washington state hospitals and healthcare authorities. Washington State Health Care Authority (2014) reported an annual estimate saving of \$34 million due to a 9.9% decline in overall emergency visitors with a 10.7 % reduction in their “frequent visitors”, of which research tells us (Cooper et al., 2005, Baraff et al., 2006, Lin et al., 2014, Knesper, 2011) psychiatric patients represent a high proportion.

Adding an interesting dimension to the delivery of patient centred mental healthcare, is the introduction of PADs (Psychiatric Advance Directives) (Zelle et al., 2015).

PADs allow adults to document their preferred treatment choices and plan of care when they have decision-making capacity to do so, which is deemed a good example of a patient centred approach to care. PADs allow the person to designate supports that they trust to act as a proxy, making decisions on their behalf, in the event that they are deemed incapable of such decisions due to the onset of a psychiatric episode in the future. The problem with the use of PADs is ensuring their availability at the point of care in ED etc., due to the issues of systems interoperability and the reluctance to share patient information (Zelle et al., 2015). PADs could also help with alleviating the sense of devaluation of identity which research has found is a common experience for many psychiatric patients (Kristiansen et al., 2005, Lilja and Hellzén, 2008).

2.6 Psychiatric Patients' Experience in the ED

With the continued lack in funding for community mental healthcare, patients will continue to visit the ED in times of crisis. Research into the gaps in quality of care and the possible interventions for improvement which could be provided to psychiatric patients in the ED is needed to try to improve conditions in this environment (Letvak and Rhew, 2015).

In their recent research of patient experience of psychiatric care in the ED Harris et al. (2016) made some interesting observations. Patients reported upset at the long delays awaiting evaluations, which increased distress and anxiety. Routine encounters

such as requests for therapist's names and medications dosages etc. added to the stress and distress levels for the patients. The research further revealed that abrupt requests and obvious clock watching were also reported as making the patient feel less valued than other patients in the ED, and stigmatised. It is clear from these patient perceptions that providers' approach to, and experience of, their own work are of utmost importance in shaping the psychiatric patient's ED experience and supporting them effectively. A person who feels safe and understood is more likely to be calm and responsive to treatment less likely to lash out or become aggressive (Zun, 2016, Shattell et al., 2007).

Communication techniques of summarising, clarifying, reflection, and open-ended questions such as "tell me more about", are really only possible when the provider has access to a patient's history. This is a way of personalising the ED experience and clinical intervention for the patient and, as Shattell (2007) and Zun (2016) found, was extremely important for psychiatric patients. Patients in general, but especially psychiatric patients, dislike being asked the same routine questions over and over again. They feel as if maybe someone is trying to catch them out, and find the burden of answering "correctly" quite stressful (Harris et al., 2016). Access to the EPR offers an opportunity for clinicians to rephrase questions, and tease out more than the basic information from the patient in doing so, while gaining their trust, improving that all important patient/provider relationship (Harris et al., 2016, Allen et al., 2003b, Shattell et al., 2007).

Allen's (2003b) survey of mental health professionals, who are experts in the field of psychiatric emergencies, identified that the best outcomes, particularly long term,

arise through collaboration between clinician and patient, where input from the patient in their treatment preferences is extremely important. Such interactions and patient preferences would be recorded in the patient's notes, for reference when the patient is not in a position to represent themselves and their wishes, such as during a psychiatric emergency.

Allen's (2003a) survey of patients' needs during a psychiatric emergency, found that a more person centred approach, increased use of advance directives, more comfortable environment, and improved discharge planning, were just some of the ways a patient's experience in the ED during times of a mental health crises could be improved.

Experience of stigma for psychiatry patients in the ED

There are few, if any, other patient types whose outcome is so significantly affected by the attitude of their treating clinician, as psychiatric patients (Zun, 2016, Harris et al., 2016). It is accepted in literature that a strong patient/provider alliance is a protective factor against self-harm and completed suicide and a significant factor in improved long term outcomes for psychiatric patients (Petrik et al., 2015, Allen et al., 2003a).

One of the most pervasive findings of Carstensen et al., (2017), in their systematic review of 57 publications (9 studies) focusing on psychiatric patients experience of general ED environment, was of patients experiencing judgemental, stigmatising attitudes of ED staff. Provider bias can really impact upon a patient's experience in the ED and their quality of care (Letvak and Rhew, 2015, Knesper, 2011). The discussion in Kozubal's (2013) paper poses an interesting theory on the relationship

between the reluctance to exchange mental health information feeding the stigma associated with the illness. Suicide is identified as a particular behaviour which can illicit the most negative feelings from ED staff. Self-harm and substance abuse also pose serious challenges for staff, due to personal bias, societal attitudes, lack of confidence, safety concerns, etc. (Zun, 2016). Building the patient / provider relationship is based on understanding and empathy for their situation, which is derived from a knowledge of their patient history. Provider bias and stigma can also be diffused or eliminated through an understanding of what brought the patient to the crisis point (Shattell et al., 2007).

It has been reported (Lilja et al., 2004) that the tendency of psychiatric nursing staff to apply typologies to their patients, leads to a distancing in the important patient/provider relationship, with patients feeling stereotyped rather than as individuals. This can blur the nurse's ability to empathise with the patient's motives and actions (Lilja and Hellzén, 2008). Access to the patient's history, and knowledge of their life events, could play an important role in understanding the patients vulnerability, and establishing an empathy base as recommended by Cooper et al. (2005).

2.7 The Quality Chasm

Even though research shows that 1 in 20 of the 115 million ED presentations in the US is related to mental illness, there are relatively few studies into the quality of care provided in these settings (Boudreaux et al., 2009, Letvak and Rhew, 2015) or into psychiatric patient experiences while attending ED (Carstensen et al., 2017). Woo

(2009) found that efficiencies in care during a psychiatric emergency, are linked to patient satisfaction and safety.

In (2001) a comprehensive report, *“Crossing the Quality Chasm: A New Health System for the 21st Century”* which proposed strategies for delivering improved quality in the US Healthcare system was introduced by the Institute of Medicine. These strategies did not, at the time, include mental healthcare or substance use service delivery, and so in 2006 the committee explored whether the dimensions of quality care they had identified in the earlier report applied to these speciality areas of medicine also.

In analysing the 2001 framework with regard to its applicability to mental healthcare and substance use, the committee found that the six previously identified dimensions of high quality care, outlined in table 2.2, were transferrable to this sector. Some mild adaptation was identified of course, due to some of the unique characteristics distinguishing them from general medical care, such as the lag in ICT infrastructure and adoption, increased silos of care delivery etc. (Pincus et al., 2007) .

The literature presented here can be organised quite seamlessly in these dimensions, and as such are presented in table 2.1 detailing the IOM’s (2006) “Six Dimensions of High Quality Care” which has been adapted with references to where the researcher believes the literature applies to each dimension.

Table 2.1 The Six Dimensions of High Quality Healthcare - Adapted (IOM, 2006)

	Dimension	Description	Application to this Literature Review
1	Safe	Avoiding injury to patients from treatment	<ul style="list-style-type: none"> • The inappropriate use of physical and chemical restraint remains a concern • Unnecessary psychiatric admission as a means to mitigate risk
2	Effective	Providing services and treatments based on scientific knowledge, avoiding over use/underuse etc.	<ul style="list-style-type: none"> • Providing psychiatric assessments for each ED presentation • Using patient history to ascertain what drugs and treatments have previously been effective /ineffective
3	Patient Centred	Providing patient care which is aligned with their treatment preferences and needs keeping patient values at the core of care	<ul style="list-style-type: none"> • Preferred treatment choice of patient respected • Using PADs where possible • Building rapport • Individualised discharge planning
4	Timely	Reducing wait times for care provision and improving LOS	<ul style="list-style-type: none"> • Psychiatric patients are the population with the longest length of stay in ED, often three times that of a non-psychiatric patient
5	Efficient	Avoiding waste of resources, beds/ staff/ meds	<ul style="list-style-type: none"> • Ensuring staff availability for psychiatric assessment for DSH patients in an effort to reduce repeat presentations
6	Equitable	Ensuring care is delivered in a non-judgemental, stigma free environment	<ul style="list-style-type: none"> • Accessing a patient's history to understand what has brought them to crisis, can help staff empathise. This may reduce a sense of being stereotyped, aiding recovery

2.8 The challenge for EPR adoption in mental healthcare

Supporters of EPRs highlight the ability to integrate into an electronic health record as one of its most attractive features. They believe it improves communication and delivery of healthcare, in a practical, efficient, and cost effective manner (Knickman et al., 2016, Tsai and Bond, 2008, López-Robledo et al.)

Coordination of care among mental health professionals is vital when it comes to caring for those experiencing serious mental ill health, particularly in the ED (Greene, 2013a, Knesper, 2011, Knickman et al., 2016). However internationally it is accepted that the discipline of mental health has been slow to adopt electronic patient records (Xiao and Acosta, 2016, Kokkonen et al., 2013, Ser et al., 2014, Knickman et al., 2016). Due to the particularly sensitive nature of the information, security concerns continue to be a barrier to EPR adoption in the mental health field. As confidentiality is one of the main pillars of their work, psychiatry professionals find the integration of their patient information into a shared EPR more challenging than other medical specialities (Xiao and Acosta, 2016, Houston, 2010, López-Robledo et al.). Therefore it is perhaps unsurprising that in (Burt and Sisk) 2005 survey of 14 medical specialities, psychiatry was the least likely discipline to use EPRs. What is quite surprising is that 11 years later, little has changed; Walker (2016) found less than 20% of mental health facilities have adopted EHRs in USA, which is in contrast to the rapid rise in EPR adoption in other medical specialities.

Data protection and privacy regulations and laws governing the disclosure of mental health and substance use information, make the decision to trust in an EPR difficult

for many to accept (Peterson and Wickeham, 2011, Kokkonen et al., 2013, Greene, 2013a). As detailed by Houston (2010) and Green (2013a) the sizeable fines imposed by Health Insurance Portability and Accountability Act (HIPPA) (USGov, 1996) for breaches of confidentiality not only concerns mental health providers but also insurers. The ambiguity around what disclosures are permitted in various situations poses concerns. Providers who worry that it would be difficult to predict who might end up viewing notes in a shared file, decide to keep their records (even if electronic) private to their practice as a precaution (Kozubal et al., 2013).

HITECH, the Health Information Technology for Economic and Clinical Health Act (2009) which provides financial assistance to “eligible” practitioners for the “meaningful use” of electronic records in the US excluded all mental health related practitioners from the eligible list apart from psychiatrists. Therefore various mental health providers in a multidisciplinary context, including those involved in substance use therapies and mental health specific hospital facilities, have not received financial incentives to adopt EPRs. According to the 2015 Update to Congress on the Adoption of Health Information Technology, only 11 percent of behavioural health providers shared information electronically, which is less than half of the frequency of other providers, such as ambulatory care providers and hospitals (Greene, 2013a).

While mental health information in community health care is more often than not kept in silos, it is also a surprisingly similar situation within major hospitals and healthcare trusts, where psychiatric notes are not made available to those that need it. In their study of the top 18 hospitals in the USA Kozubal et al. (2013) found that only 4 of the

18 incorporate psychiatric evaluations in their internal EPRs. When asked why they restricted access, stigma and legal obligations were cited by most.

In services where efforts have been made to share information, the resulting solutions have often proved clunky and awkward to access. Again the silo system impacts here, whereby ED staff may have access to the information but it is in a different system to the EPR system they are working within as reported by Ser et al. in their (2014) research into EPR adoption in Mental Health Hospitals in England. Emergency psychiatric staffs are therefore required to use additional logins and passwords, which is not deemed very efficient in an emergency setting. So much so that Kozubal's (2013) research found that clinicians sometimes do not go to the effort to access the mental health file, even if the access is available to them. Interestingly, a study of the Beth Israel Deaconess Medical centre in Boston, which has relatively high usage of its shared record system in ED because of its reported ease of use, found that only 12.5 % of ED clinicians will use a system that requires a separate login from the main EPR system (Bailey et al., 2013). This poses a challenge of integration once the confidentiality reassurances have been overcome.

Madden (Madden et al., 2016) hypothesized that fragmentation was a common factor in mental health EPRs for many reasons. Not only because providers were nervous about sharing information, but also because patients were so private about their mental health that they often source psychiatric care external to their regular medical care giver. The interoperability factor weighed in heavily on the levels of missing information from even within multi-speciality EPRs.

Mental health has long been kept separate from medical health services; this is evident from HITECH (USGov, 2009) decision not to include mental health providers in their incentive scheme for EPR adoption, rendering EPR adoption and sustainability prohibitively expensive for many. The HITECH imposition of extremely high fines for data breaches also scares providers who worry about who may see their notes in future in a shared record (Peterson and Wickeham, 2011, Kozubal et al., 2013).

This separation in healthcare service delivery was reflected in IOM's decision not to include mental health in its (2001) study of quality in healthcare as it was deemed as being a completely separate field, only to revisit this in (IOM, 2006) when they found all the same quality standards applied.

2.9 Literature Gap

A recurring theme in the literature reviewed was how far behind the speciality of mental health is with regard to implementation of information technology supports, especially the adoption of EPRs (Peterson and Wickeham, 2011, Madden et al., 2016, Bailey et al., 2013, Greene, 2013a, Greene, 2013b, Kozubal et al., 2013, Xiao and Acosta, 2016, Knickman et al., 2016, Tsai and Bond, 2008). The many reasons for this were explored in the previous section. There is a consequent lack of literature specifically relating to accessing the psychiatric record at point of care in the ED and the impact it has had regarding efficiencies and quality of care for patients. Literature available focused more on the intention to implement, or the change management process, and efficiency as regards specific components of implementation such as

medications or a triage scoring tools, rather than the full psychiatric EPR for the patient (Tsai and Bond, 2008, Clarke et al., 2015).

2.10 Summary

This chapter began with an introduction to the various terms the researcher used in their review of the literature and an explanation around the interchangeable terms encountered. An outline of the following sections of the chapter was provided, to give the reader a sense of the direction the review had taken and the emerging themes.

Section 2.2 gave the reader insight into the impact psychiatric presentations have on ED services internationally. The impacts of emergency presentations of deliberate self-harm, due to the high volume of repeat ED presentations recorded globally related to this issue, were explored in section 2.3. Best practice guidelines were also referenced.

Arising from that, section 2.4 acknowledged the internationally accepted importance of psychiatric assessment in the ED. As collateral and psychiatric history support a comprehensive psychiatric assessment, the availability of this information and the challenges of obtaining it were discussed in section 2.5.

Section 2.6 explored the patient provider relationship and its profound impact on the recovery process for psychiatric patients. Highlighting the particular importance of person centred, individualised care for this patient population. Without patient specific information this is extremely hard to achieve.

The Institute of Medicine's 2001 landmark report introducing quality dimensions for healthcare for patients, which was later reviewed with regard to the "Six Dimensions of High Quality Care" for mental health (IOM, 2006) was introduced in section 2.7, and issues addressed previously were aligned with these dimensions.

Section 2.8 explored the reported challenges to EPR adoption in mental health and within this section some various initiatives to implement were discussed.

Finally section 2.9 presents the gap which this research aims to address, which is, that access to the mental health electronic patient record in the emergency department, affords staff an opportunity to provide more a patient centred, efficient, and improved quality of care, to patients presenting with psychiatric emergency.

In the following chapter, chapter 3, the chosen methodology of the researcher to help them answer the research questions is presented. The methods and decisions applied to the selecting, collating and analysing the data are also described.

3 Research Methodology

This chapter details the methodology applied to this research project. It highlights the aim of the study, the hypothesis and the design and application of both the quantitative and qualitative aspects of the study. The rationale for the chosen methods, participants, and data collection is also presented. The analysis of the data which was collected is delivered in the following chapter, chapter four.

3.1 Introduction

The aim of this research is to answer the primary research question which is;

“Does consulting the mental health EPR afford Liaison Psychiatry staff an opportunity to offer more personalised, patient centred, quality of care, to those presenting to ED?”

As the literature review has shown that patients equate efficiencies of care with quality, a supporting question must also be addressed;

“Does consulting the mental health EPR afford Liaison Psychiatry staff enhanced opportunities for efficiencies in care and service delivery?”

A mixed methods study design was used to answer these questions. The mixed methods approach to research is an emerging methodology increasingly applied to health services research projects (Tariq and Woodman, 2013). Mixed methods approach refers to the use of quantitative and qualitative data in the same study.

Quantitative data relates to numerical data, and as such is well suited to the analysis of efficiencies with regard to duration and time values (Kaplan and Maxwell, 2005), and as such suited to answer the supporting research question in this study.

Qualitative data, concerns data derived from semi structured interviews, observation and opinion, which is suited to exploring the subjective values (Lau and Kuziemy, 2016) such as “personalised”, “patient centred”, “quality”, which form the primary research question.

Cross sectional in design, the research was based on psychiatric presentations to the ED referred to liaison psychiatry staff. Some of those presenting will have had their mental health EPR consulted by the liaison psychiatry staff (cohort 1); others will not have had a mental health EPR, or their EPR will not have been consulted by the liaison staff (cohort 2).

The quantitative aspect of this study was based upon comparing these cohorts using two data sets. One dataset came from the ED setting and the other from the psychiatric liaison service with data regarding patient follow up under the NCP for Deliberate Self-harm. The hypothesis was that there would be a measurable difference with regard to admission rates, average length of stay post referral to psychiatry, duration of psychiatric assessment, etc. in the ED setting between the two cohorts. Similarly with regard to the NCP the difference in effort required to complete the follow up process, for each cohort was analysed, with effort equated to volume of follow up phone calls, and number of days to close a case. The hypothesis for this analysis was also that the volume of calls and duration of follow up period would be

less for those where an EPR was consulted as opposed to those for whom one was not consulted. The quantitative research consisted of a total of four separate analyses of the two data sets which will be detailed further in section 3.3.

The qualitative element of the study was based around the experience of liaison psychiatry staff that was caring for patients for whom an EPR was available, and was not available, for consultation often in the same shift on an almost daily basis. This experience, and their perception as to the impact on patient support and service provision, was deemed vital to the study as it would help gain a deeper understanding of the difference having access to a mental health EPR makes to their work. No hypothesis for this aspect of the research has been suggested, as qualitative research methods are not suited to proving an hypothesis (Braun and Clarke, 2006). A more detailed explanation of the interviews and qualitative methodology will follow in section 3.4.

3.2 Review of Research Methods

Kaplan and Maxwell (2005), Friedman and Wyatt (2014), and Braun and Clarke (2006) promote the use of qualitative methods as an appropriate methodology to apply when analysing how users identify with, evaluate, and utilise a system. Experiential qualitative research is driven by participant's experiences and seeks to make sense of the environment, implementation or subject from a person's perspective. Experiential thematic analysis involves then organising of these expressed experiences opinions - into an interpretive framework based on the detail expressed in the data (Braun and Clarke, 2006).

The primary research question refers to merits such as patient centred, personalised, quality care, which are subjective and difficult to quantify. Therefore a qualitative methodology which can guide the researcher with insight into people's thoughts, feelings, and emotions, was deemed a suitable approach to help tease out the human angle, delivering information which is rich in meaning, while answering the primary research question (Lau and Kuziemy, 2016).

It was clear from the language in the secondary research question that to measure the efficiencies or timeliness of care provision afforded by access to the EPR, a quantitative study was required Kaplan & Maxwell (2005). According to Creswell (2014), quantitative methods allow researchers to generalise findings to the wider population by using measurable data to generate evidence and uncover patterns.

Upon reflection of the research questions in light of the researcher's understanding of the principles of the various methodologies described, a mixed methods approach with both quantitative and qualitative aspects was decided upon as best suited to this project.

3.3 Quantitative aspect to the study design

Before it was given to the researcher, a data minimisation and de-identifying exercise was undertaken on all quantitative data, with all identifiable information and clinical data surplus to the needs of this project removed from the primary data sources. Each

patient who presented during the period of the study was assigned a unique research case ID, therefore repeat presentations by the same individual will have the same research case ID assigned for each date and time they presented.

The quantitative data left the site of origin as a password protected file attached to an encrypted email to the researcher.

Upon receipt the researcher coded data items in order to facilitate analysis as listed in table 3..

Using IBM SPSS Statistics package version 24, descriptive and inferential statistics were used to analyse the quantitative data which will be detailed in chapter 4.

3.3.1 Dataset 1:

Dataset 1 comprised of de-identified data, from a minimised data set, relating to presentations referred from the medical ED team to the liaison psychiatry ED team, from January 1st 2017 to April 30th 2018.

Data relating to a total of 1,869 presentations were initially given to the researcher.

Exclusion Criteria: 137 records were excluded as they related to presentations under the age of 18 for whom no EPR was available for reviewing at any point, and therefore were unsuitable for the study. 15 were excluded as they related to presentations from those living outside Ireland, and the timelines may be disproportionate to those living in Ireland. A further 727 records were excluded as they did not have the full critical data attributes recorded against the presentation for analysis.

After applying the exclusion criteria, the number of presentations suitable for analysis in this dataset reduced to a total 991 as per fig 3.1.

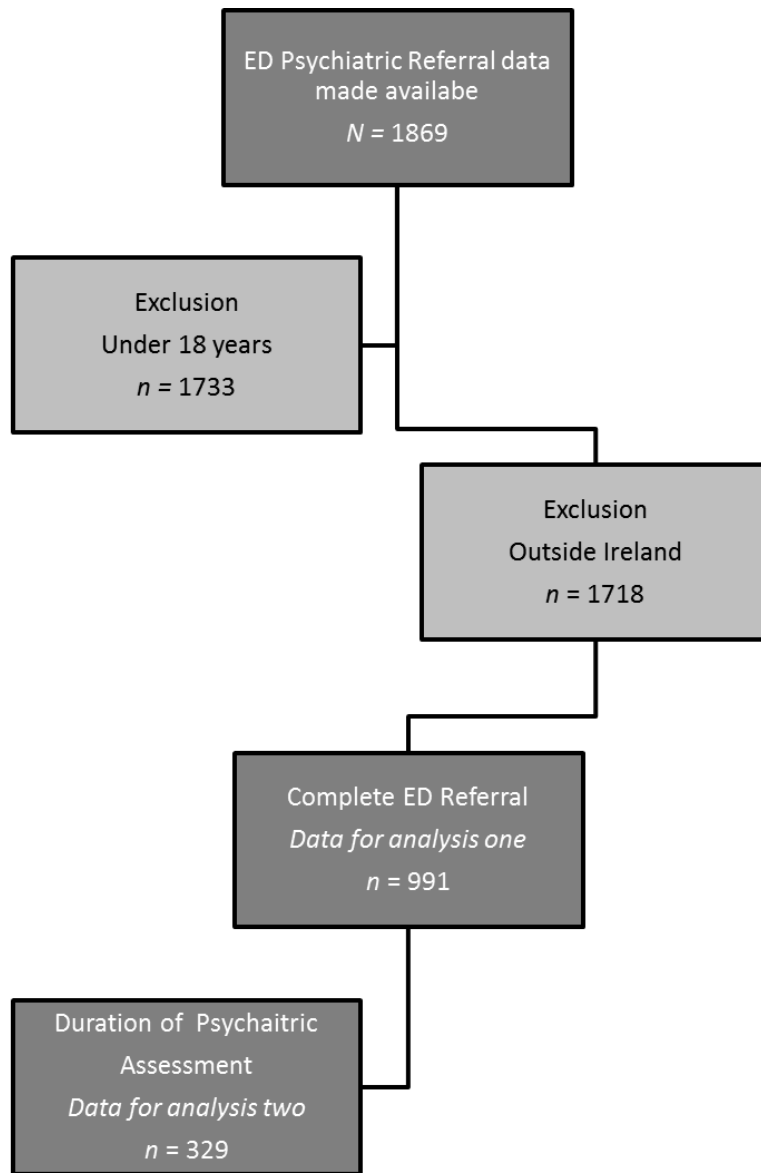


Figure 3-1 Dataset 1 Exclusion Process

Glossary of data items for Dataset 1:

The age of each participant was given as a year and the researcher then categorised them as under and over 18 years.

The area which relates to the patients catchment area for healthcare service delivery was localised, and so the researcher categorised them as MHIS affiliated area or not.

The presenting complaint, which is a term used for the primary reason a patient presents at the ED, was listed.

The duration of assessment refers to the length of time it took a psychiatric doctor or nurse to meet with the patient review them and make a clinical decision about their course of treatment. In the study site this information was recorded in minutes and the researcher left this data unchanged.

The admission decision indicates the course of action taken post - assessment. Four main decisions are listed;

Involuntary Admission; is where patients are admitted to a psychiatric ward against their will. It is a legal process and the decision is undertaken if the patient is deemed to have a mental disorder and to be at risk of harming themselves or another person.

Voluntary Admission; is where a patient agrees to be admitted to a psychiatric ward do undergo a course of psychiatric treatment as an inpatient.

Medical Admission; is where patients are admitted due to a medical rather than psychological reason, such as diabetes, or, often in the case of the DSH population cuts and laceration to the body

Discharge to OPD/ Community care; the patient is referred to their community supports for ongoing treatment within the community by their community mental health team or GP.

The Length of Stay (LOS) in ED post referral to psychiatry relates to the length of time the patient is in the care of the ED department post formal ED referral to psychiatric services for assessment. This assessment and decision about future care will be carried out while the patient remains in the ED. This timeframe was provided to the study in hours. This data was calculated and rounded off to the nearest hour by the ED system based on the time of formal referral to psychiatry liaison services made on the ED system, and date/time of discharge from ED.

Total ED Length of Stay (LOS) relates to the length of time between the date and time of admission to the ED service and the date and time of discharge from the ED service. This data was provided to the study having been calculated and rounded off to the nearest hour by the ED system.

An indication for each presentation where MHIS was consulted was provided to the researcher in a yes / no format.

The discipline of the clinician who assessed the patient and managed their care through the ED was indicated as Doctor or Nurse.

The “Seen” timeframe when each patient presented to ED was also provided to the study in the format of “Day” or “On call” which relates hospital shift patterns.

To facilitate analysis, the researcher coded the data, assigning 1,2,3 etc. to fields with multiple discreet values, however fields containing numbers such as hours or minutes were left unchanged. The codes may be viewed in table 3.1.

Table 3.1 Dataset 1 Coding Exercise

No	Data Item		Code
1	Research Case ID		Unchanged
2	Age	<18 years	1
		>18 years	2
3	Area	MHIS	1
		Other	2
4	Presenting Complaint	DSH/SI	1
		Psychosis	2
		Anxiety	3
		Addiction	4
		Borderline Personality Disorder	5
		Behavioural Symptoms of Dementia	6
		Delirium	7
		Depression	8
		Eating Disorder	9
		No Psych Issue	10
5	Duration of assessment (Mins)		Unchanged
6	Admission Decision	Involuntary Admission	1
		Voluntary Admission	2
		Medical Admission	3
		OPD	4
		Absconded	5

No	Data Item	Code	
7	LOS in ED post referral to Psychiatry (Hrs)	Unchanged	
8	Total ED LOS (hours)	Unchanged	
9	Was MHIS consulted	Yes	1
		No	2
10	Provider	Doctor	1
		Nurse	2
11	Presented	Day (8-8)	1
		On Call (8am - 8pm)	2

Analysis One: Liaison Psychiatry Referrals within the ED

The data in dataset 1 was analysed with respect to presentations where the MHIS EPR was consulted compared to the data relating to those where an MHIS EPR was not consulted. This analysis was made with regard to length of stay in ED post referral to liaison psychiatry team, and the overall ED LOS. The average rate of psychiatric admission in the timeframe was also compared in these two groups, and the data was also analysed to see if a difference was observed in LOS post referral depending on the discipline of the treating clinician.

Analysis Two: Duration of Psychiatric Assessment

A subset of dataset 1 presentations where the duration of psychiatric assessment was recorded was analysed. Of the 991 presentations 329 had the duration of assessment recorded and therefore, these presentations were analysed to explore if there was a

variance in the duration of assessment when the MHIS EPR was indicated as being reviewed, as opposed to when it was not.

3.3.2 Dataset 2:

Data relating to 24 months DSH presentations from April 29th 2016 to April 30th 2018 were made available for dataset two. In total data relating 1622 presentations were made available. See fig. 3.2 for a breakdown of population as a result of the exclusion exercise.

Exclusion Criteria: The researcher identified which presentations had an outcome of admission, and as these presentations did not fall into the category for follow up they had to be excluded. There were 209 such cases. A further 103 were identified as being under the age of 18, and therefore were outside the scope of this study, so must be excluded. Unfortunately, data relating to a further 819 presentations had to be excluded as data available was incomplete in that they were missing one or more of the key criteria. This was partially due to the fact that that the reporting requirements and process under the NCP changed a number of times after the DSH NCP project began, and so the data available was inconsistent at times. Therefore complete data relating to a total of 421 presentations were suitable for analysis in this dataset. The data items and their coding are detailed in table 3.2

Table 3.2 Dataset 2 Coding Process

No	Data Item		Code
1	Research Case ID		Unchanged
2	Age	<18 years	1
		>18 years	2
3	Area	MHIS	1
		Other	2
4	Date of each call		Unchanged
5	Date of DSH case closure		Unchanged
6	Was MHIS consulted	Yes	1
		No	2

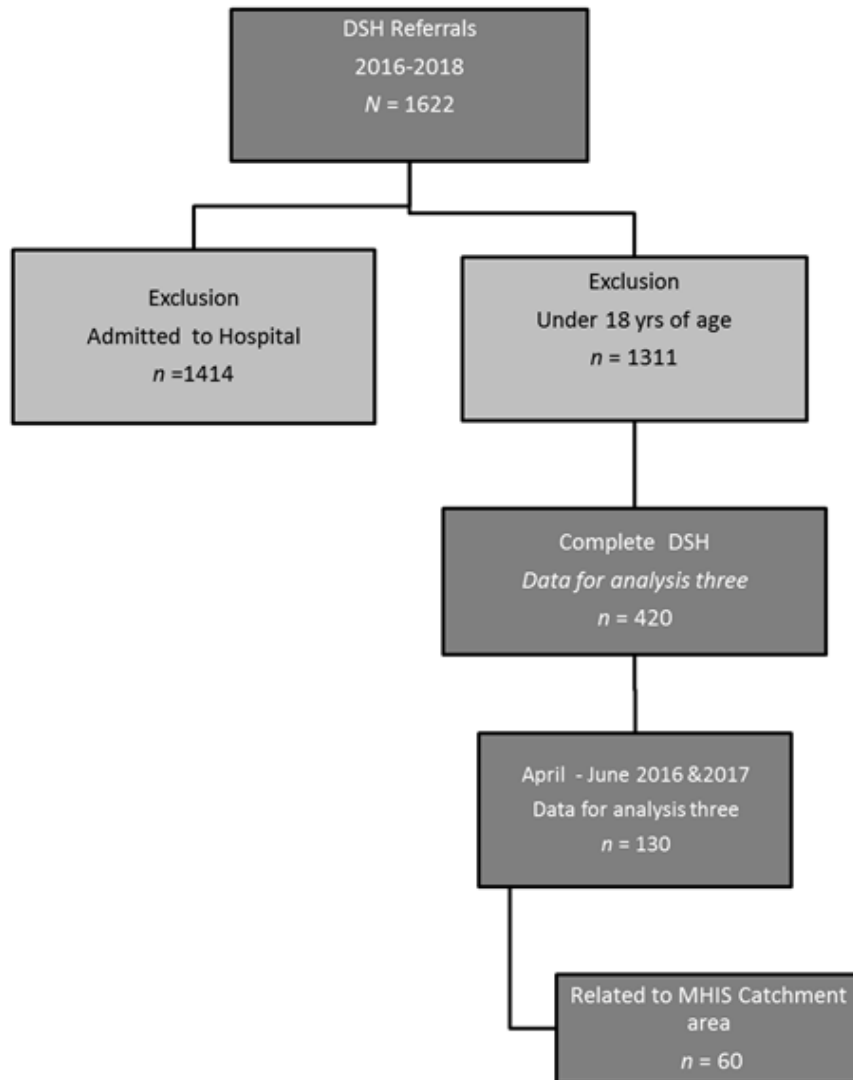


Figure 3-2 Dataset 2 Exclusion Process

Analysis Three: DSH Patients follow up under the National Clinical Program

In compliance with the national clinical program (NCP) on Deliberate Self Harm (DSH), ED psychiatric services cannot close the case of those who present with self-harm until follow up efforts can confirm that an OPD appointment has been made for, and attended by, the patient. The efforts required by the means of phone calls to determine that a case can be closed must be recorded for each DSH discharge to community based services by the liaison team.

The researcher had access to de-identified data, from a minimised data set relating to the number of follow up telephone calls required to “close” each deliberate self-harm case under the National Clinical Program (NCP) (see section 1.1.3) (dataset 2). Starting from April 25th 2016, for 24 months to April 30th 2018, this data set also included the number of days it took the liaison team to “close each case”. Again analysis comprised of comparing data relating to cases where the MHIS EPR was consulted, against cases where an MHIS EPR was not consulted. Therefore a key criteria data item was the indication of whether MHIS was consulted or not, which impacted on the volume of records available for analysis.

3.4 Qualitative aspect to the study design

The qualitative aspect of the study, related to data derived from interview responses to five individual interviews conducted with liaison psychiatry staff that use MHIS on a daily basis in the study site. A purposive sample was selected with the aim of acquiring information “rich” data to analyse directly related to the use of MHIS to gain insight

regarding how practitioners deem access to the EPR influences, supports, or impedes their work. As only liaison psychiatry staff could provide such insight because only they had access to MHIS, the sample was restricted to the size of the liaison psychiatry team membership, and furthermore by the number of those who volunteered to participate from this group.

Exclusion Criteria: Staff who had never used MHIS in service delivery was excluded from the study. Any references to the support and management of presentations under the age of 18 during the course of the interviews also had to be excluded, as there was no EPR available to be consulted for them at any stage.

The invitation to participate email was sent to prospective participants on behalf of the researcher by the study sponsor in the study site (Appendix 1). The email had the information sheet (Appendix 2) and the Consent Form (Appendix 3) attached, explaining the study design and process, and reiterated that there was no obligation to participate.

Interested participants contacted the researcher with their completed informed consent form prior to the researcher making contact with them individually, to welcome them to the study and schedule their interviews.

Analysis four: Qualitative analysis of impact of the EPR as perceived by staff

This aspect of the project was undertaken in an effort to gain a real depth of understanding of the difference access to the EPR at the point of care had made to the work involved in the support and management of psychiatric patients presenting to ED.

A series of five 30 minute semi-structured voluntary interviews were conducted with self-selecting participants from the liaison psychiatry team in the study site. The rationale for each question and the question itself are detailed in the following subsections.

3.4.1 Question 1

As both research questions are based upon what, if any, difference access to the mental health EPR can make to each subject area, it was deemed to be an appropriate and interesting question to query re rate of consultation of EPRs, especially in light of the fact that the literature told us that often times the EPR is not consulted even when it is available. It was also deemed to be a warm up question and not too probing to ease the participant into the process as advised by Braun and Clarke (2006).

Q1. When you know there is an EPR available to you for the patient, do you always consult it.....Yes \ No - Why?

3.4.2 Questions 2 and 3

As the mental health EPR is primarily an information source of patient mental health history, it was decided to base questions 2 and 3 around the two main processes which emerged in the literature as being reliant upon familiarity with the patient's history and community supports. These were the assessment and discharge planning aspects of liaison psychiatry work. Both processes were linked to the primary and secondary

research questions as they are related to personalised, patient centred care as mentioned the primary research question, and are deemed to be time intensive processes also, which could be linked to efficiencies as mentioned in the supporting research question.

The researcher felt it was acceptable to ask specifically what each participant believed the significance was for them and their patient, in relation to the difference access to an EPR made to each process, as Braun and Clarke (2006) state that what distinguishes qualitative research as a research field, is that it is interested in “meaning”. In their guidelines for research projects Gough et al. (2003) suggest that research questions should have some originality and social relevance and the researcher felt exploring the significance for both participant and their perception for the patient brought an element of social relevance and originality to the study.

Q2. Could you please explain to me the process for obtaining patient history/ collateral information for patients for whom an MHIS EPR IS NOT AVAILABLE for you to consult?

a. *Could you now explain to me what, if anything is different in that process, when you work with a patient for whom an MHIS EPR IS available for you to consult*

b. *What is the significance of that for the patient, or for you?*

Q3. Could you please explain to me the discharge planning aspect of your work for patients for whom an MHIS EPR is NOT available?

- a. *Could you now explain to me what, if anything is different in that process, when you work with a patient for whom an MHIS EPR IS available?*

- b. *What is the significance of that for the patient, or for you?*

3.4.3 Question 4

As the two processes examined in questions 2 and 3 were not only reliant on access to patient history, but also referenced the importance of communication with the patient OPD supports and community treating team, the researcher decided to look at how availability of an EPR impacts the NCP DSH follow up process. This process is heavily reliant on communication with both patient and OPD supports, and so provides an opportunity for further insight into how an EPR may support inter service communication. Anecdotally, it was mentioned to the researcher during MHIS implementation that the NCP DSH process would benefit greatly post implementation, and the researcher was keen to hear if those completing this work on a daily basis felt that these benefits had come to realisation or not. Therefore question 4 was centred on the difference in the process of follow up when an EPR is available and consulted as opposed to when not. Again the significance for participant and patient was also queried. This question is linked to the supporting research question as it is a task driven process, and the researcher felt positive impacts would equate to efficiencies.

Q4. *Could you please explain the follow up process of your work for patients who present with self-harm when an MHIS EPR is NOT available?*

- a. *Could you now explain to me what, if anything is different in that process, when you work with a patient for whom an MHIS EPR IS available?*

- b. *What is the significance of that for the patient, or for you?*

3.4.4 Question 5

Question five, the final question was a broad open ended question, to indirectly draw out participants on the impact of the MHIS implementation. The question was posed in an effort to see if responses would reflect the positions previously expressed in the task orientated questions. The question is deemed to be linked to the primary and supporting research questions as both of these questions relate to the impact of the MHIS implementation project.

Q5. *How would you feel if you were told the MHIS implementation was to cease next week?*

- a. *Why would you feel that way?*

3.4.5 Interview process and treatment of data

The interviews were arranged in the study site in an effort to cause least disruption to participants work schedule and were on average 24mins long. Each interview was recorded and saved under a participant number assigned for confidentiality rather

than their name, in a password protected file on an encrypted device. Three nursing staff and two consultants participated in the process. Participants and data were treated with utmost respect in line with the undertaking detailed by the researcher in Appendices 2 and 3 and approved by the various ethics panels in the ethics processes described in the following section 3.5.

The data obtained was transcribed using an “intelligent” verbatim style in an attempt to capture what was said with less emphasis on how it was said. The main priority was the detail and meaning, the padding was left out.

Intelligent verbatim transcription style was used to give voice and intended meaning to the participants. It was concerned with accuracy of the substance of the interview.

The transcribed data were then coded, and thematically analysed using the systematic six stage process as developed by Braun and Clarke (2006). Themes were identified using a bottom up (data driven) approach. See table 3.3 for details on how the six stage process was applied to this study. Table 4.1 and Figure 4.1 illustrate the theme development stage of the process.

Table 3.3 Application of the Six Stage Framework for Thematic Analysis

Step	Application
1. Familiarising	Interview transcripts were read and re read with items (quotes) pertaining to the research questions identified and highlighted.
2. Coding	Quotes were grouped together in relation to subject and context. A “Complete” coding (Braun and Clarke, 2006) approach was applied in that all information in the data set which could be of relevance to either research question was gathered. A word or brief phrase was assigned to each piece of data which represented a feature as to why it was deemed possibly useful to the study. Coding was revisited at times as codes emerged or merged into each other. Finally all codes were collated clustered, clearly titled, and each quote relating to that code and its origin code were recorded.
3. Theme Search	Codes were reviewed in an effort to identify what themes may be applied, and which codes would fit with which theme
4. Theme Development	Themes were reviewed and merged, creating sub themes under overarching themes
5. Theme Refinement	Themes finalised
6. Analysis	An illustrative analysis was undertaken on the themes, providing a detailed interpretation of the theme with data quotations provided to support the argument

3.5 Ethical Considerations

Having reviewed the research proposal for this study, the Chairperson of the research ethics committee in the study site provided “Chairperson’s Approval” for the quantitative aspects of the study in relation to data source 1&2. Ethics approval was not required for staff surveys in the study site. Please see Appendix 4 for the letter detailing chairperson’s approval from the study site.

As this project involved human participation in the form of semi-structured interviews, a “level one” research ethics application was submitted to the Trinity College Research Ethics Committee for independent review. This was done in compliance with the regulations for conducting research under the School of Computer Science and Statistics in the college. A copy of the proposal submitted and the approval granted may be found in Appendices 5 and 6 respectively.

Under the research governance framework of the principal researcher’s employers, all research must receive ethical approval from their in-house ethics committee. The primary researcher completed a detailed ethics application, and attended for interview with the committee prior to receiving ethical approval to proceed with this research project. Copies of the application and approval documents can be found in appendices 7 and 8 respectively.

The study design did not include any interaction with patients. The researchers went to great lengths to ensure no patient names or personal data items were exchanged, in

an effort to minimise the risk of identifying any patient in the quantitative aspect of the study.

Primary qualitative data from interview transcripts was only available to the principal investigator and coded data to the co-researcher and study supervisor. As participation in the semi structured interviews was on a voluntary basis, and prospective participants were reassured that there would be no repercussions for not participating, no employee of the study site should have felt compelled to engage in the interview process. Furthermore as all data was de identified and treated in line with the Data Protection Act 1998 and 2002 and the forthcoming GDPR 2018, the researcher foresaw no risk to participants.

Though the researcher was known to the interview participants, the researcher did not work in the same company or have any role in their management and therefore no conflict of interest was anticipated.

3.6 Limitations of the Study

As the researcher is not of a clinical background, the data available to them for analysis was restricted, and they were not in a position to investigate any correlations with regard to patient outcomes, or repeat presentations.

As the researcher is the project manager for the MHIS system in the original site there may have been a potential for bias, or for interview participants to speak more favourably of their experience with system.

The volume of quantitative data available for analysis was depleted due to the number of presentations for which there was incomplete data available. It is possible that, though not obvious how, the necessary exclusion of incomplete presentations may have biased the quantitative findings.

The data gathered in relation to DSH follow up was based on analysis of manually recorded tasks and timeframes and as such may be subject to inconsistencies.

The EPR accessed indicators were also based on manual recording so again maybe open to inconsistencies.

3.7 Summary

In this chapter the researcher explained why they felt a mixed methods approach would be most suited to answering the research questions.

The quantitative data sources, data types and volumes were described and the rationale for the questions posed in the qualitative aspect was also presented. In the latter part of the chapter the ethical approach to the study and the study limitations were reflected upon.

In the following chapter, chapter 4, the researcher will present the findings and analysis of both the qualitative and quantitative studies and highlight how they support each other in answering the research questions.

4 Findings and Analysis

4.1 Introduction

In this chapter the researcher will present the findings and analysis of the qualitative and quantitative research together. As the primary research question was addressed by the qualitative aspect of the study and the quantitative aspect of the study dealt with the supporting research question, the researcher felt that presenting the findings together would reinforce the relationship between the data.

As explained in the previous chapter, the themes were identified after completing the coding and theme refinement steps applied during the six stage process for thematic analysis of qualitative data (Braun and Clarke, 2006).

In the following sections, step six of that process, the analysis, will be described, and where relevant, the findings of the quantitative research will be presented to provide a measurable dimension to that analysis.

In the coding process, participants were identified in terms of P numbers 1- 5, e.g. P1, but these codes were randomly assigned and do not relate to the order in which the participants were interviewed.

During theme development and refinement it appeared that many of the codes and sub-themes crossed over into each other making it difficult for the researcher to

diagrammatically represent see fig 4.1 for early iteration, with a larger figure available in appendix 9.

Braun and Clarke (2006) use the analogy of a house when explaining the relationship between codes and themes. Themes are built from codes and if one were to imagine codes as bricks and tiles, the themes would be the walls and roof.

While refining the coding process the researcher could see how an adaptation of the house analogy of Braun and Clarke (2006) was applicable to this study. See figure 4.2 for a representation of the overarching theme and code relationship using the house analogy, with a larger figure in appendix 10. Though Braun and Clarke do not mention a foundation for their house, the researcher felt that as swift access to accurate reliable information was a recurring point throughout the qualitative process, which appeared to underpin every coded element, it was appropriate that it would be considered as a good foundation upon which to construct the themes.

Table 4.1 Sub Theme and Theme Development

SUPPORTING INTER-SERVICE COMMUNICATIONS																			
					SUPPORTING ED STAFF														
							PATIENT CENTRED												
Quicker Inter-service Comms	Less Repetition	Quicker Apts	Safer Secure Info Exchange	DSH F- up Quicker	24 / 7 Access to Patient Info	Staff Confidence in Referring Svs	Transparent	Better Sense of Patient	Clinical Decision Support	Staff confidence in Discharge Plan	Manage with Less Restriction	Build Rapport	Time for Presenting Complaint	Personalised Appropriate	Less Traumatic				

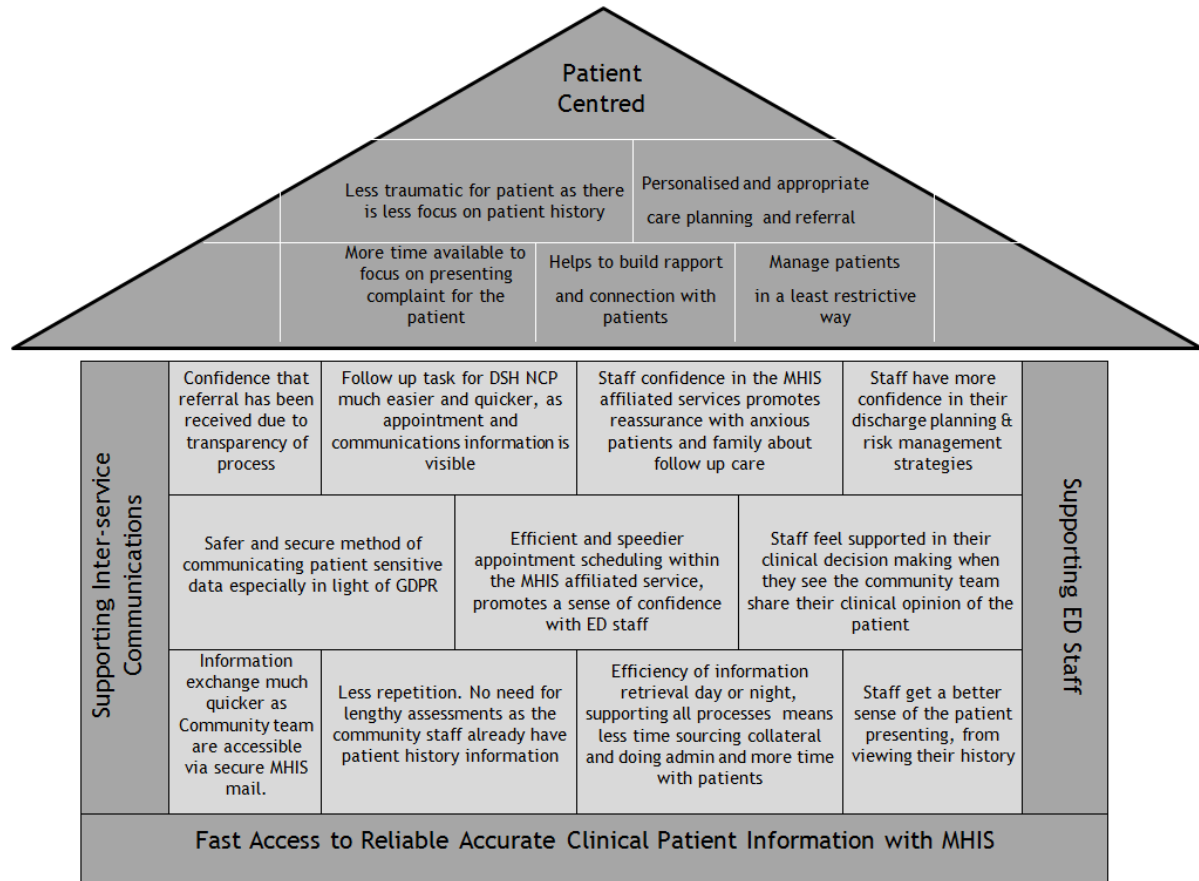


Figure 4-1 Code and theme relationship reflected with house analogy

The remainder of this chapter will detail the analysis of the qualitative themes supported by, and referencing the quantitative findings where appropriate.

4.2 Theme 1: Supporting Staff

Efficiency and ability to get tasks completed easily, confidence in their decision making process, and confidence in the service to where they were referring patients were the three sub-themes of this overarching theme. Though efficiency was a factor the researcher set out to find supported in the quantitative aspect of the study, it was

simply too prevalent and blatantly referred to in the course of the qualitative research to discount in the coding and theming process. In fact it crosses over into the “Supporting Inter-service Communications” and “Patient Centred” themes also.

4.2.1 Sub-theme 1: Efficiency

From the outset of each interview almost the very first phrase used was “it’s quicker” or some variant of that phrase.

“Timeliness” - P1

“Time saving is great”- P2

This perception of improved efficiency continued throughout the entire interview process, in relation to the impact consulting the EPR makes on each process addressed. From collateral gathering during the assessment phase, through the discharge planning, and onto DSH follow up, accessing the EPR was perceived by staff to make their job quicker and easier.

In response to question one, querying whether they would always access the EPR if they knew it was available, all participant responded with an emphatic, yes they would. When asked why, they all pretty much started to answer the second question, in regard to the difference it makes to accessing patient history.

“Yes I would personally, because it will give me quick access to background, and collateral, and details of medications, all the information that’s really useful to our assessment” - P5

“Makes life so much easier, 5 minutes and you have everything you need” - P2

Each participant recounted stories where trying to ascertain even basic information, such as whether a patient was linked with an outpatient service, or not, took hours. Here is an example of one such story.

“I called the GP, who told me to call the local hospital, the hospital said they did not know and would call me back. When they did, it was with the details of a patient with a different DOB, not my patient! They had to go investigate further and call me back later. When they did, it was to tell me that the patient was not currently attending and therefore they had no access to a chart(paper) to provide me with any history or background - three hours to find out pretty much zero information” - P1

Had this been a patient with an EPR available to the ED staff, they could just log in and see the details for themselves, not wasting their time, the patient’s time, and the time of the staff in the other service.

Frustration came across at times when participants were explaining the difference in processes when an EPR was and was not available.

“Trying to get collateral and history even when on day shift is difficult. Trying to get hold of a GP during shift can be very time consuming. They can be with a patient when you call or vice versa and it really is a chasing game, delaying the process” - P2

“This is a psychiatric emergency service, emergency being the key! Any delay in information retrieval is not at all helpful, it makes things quite difficult for everyone in fact”- P1

“You get a lot of ‘oh that person isn’t available’ when trying to obtain collateral in services without an EPR; for patients or services with an EPR that just isn’t a factor” -

P1

The efficiency sub-theme also followed through in responses to the discharge planning questions. All participants stated that they felt when an EPR was available their patients didn’t have to wait as long to be discharged. Here is an example of one such reference

“When a patient is particularly unwell and you want to ensure they will be given an urgent referral or have some supports if discharged from ED, it’s really important to ensure that you have the correct sense of the patient and that you have confirmation that your plan is suited to their needs. Therefore they must wait around until you have obtained reliable collateral, and are confident that the discharge plan will see them through to their next appointment in the community, this can delay things for a number of hours” - P5

The perceived time saving was again referenced by all participants with regard to the documentation aspects of their work. Participants explained that a full patient history must accompany any referral they make to the various outpatient services. They reported that not only is this time-consuming to extract, it is also time-consuming to write up. When an EPR is available the full patient history is on file so they do not need to rewrite it out. They just need to enter the details pertinent to the current presentation.

“You don’t have to waste time writing up information that they already have” - P1

“It’s often the case we are sending them information they already have. Writing up lengthy assessments is time consuming and its time away from patients!” - P2

More references to efficiency, and time saving, flow through the remaining themes. However at this point we will take a look at how some of the quantitative analysis supports this perception. Does access to the EPR improve length of stay as one would expect is related to efficiency, and likewise does access to the EPR reduce assessment durations?

4.2.2 Quantitative findings related to sub-theme 1: Efficiency

4.2.2.1 Quantitative Analysis One - Length of Stay (LOS) durations

As explained in the previous chapter, analysis one was performed on dataset 1 which, relates to presentations referred from the medical ED team to the liaison psychiatry ED team, over a 16 month period from January 1st 2017 to April 30th 2018. Data relating to a total of 1,869 presentations were initially given to the researcher; however after exclusion criteria were applied the total number of presentations available for analysis were ($n = 991$)

Independent t-tests were conducted on LOS post referral to psychology (Hrs) and Total ED LOS (Hrs) to explore the difference consulting the EPR made in terms of length of stay post referral and total length of stay, on the ED population ($n = 991$). The perceived association between accessing the EPR and lengths of stay (LOS) were not borne out by the t-test, to be of statistical significance, as shown in table 4.1. However there are a number of additional factors and influencers such as resources,

and accompaniment to leave, etc. that could influence a discharge time, and LOS, in addition to access to an EPR. These will be discussed in chapter 5.

Table 4 .1 Independent Samples t-test

		Levene's Test for		t-test for Equality of Means					95% Confidence	
		Equality of Variances		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Interval of the	
		F	Sig.						Lower	Upper
LOS post Ref	Equal variances assumed	0.145	0.704	-0.122	989	0.903	-0.047	0.388	-0.808	0.713
	Equal variances not assumed			-0.120	487.785	0.904	-0.047	0.393	-0.820	0.726
ED LOS	Equal variances assumed	0.071	0.790	-0.667	989	0.505	-0.285	0.427	-1.124	0.554
	Equal variances not assumed			-0.660	491.310	0.510	-0.285	0.432	-1.134	0.564

The researcher explored the data relating to average LOS post referral to see if any variance would be observed taking into consideration the discipline of the treating clinician, and whether they consulted MHIS. The findings here, as per table 4.2, are that no significant difference is indicated between cases managed by a nurse or a doctor when MHIS was consulted; however there was a significant difference when MHIS was not consulted. This will be discussed later in chapter 5, but it is believed to relate back to the coordination effort required to communicate with other services for background information, while on shift and attending to numerous patients.

Table 4.2 Average LOS by Discipline of Treating Clinician

N=991	Doctor <i>M(SD)</i>	Nurse <i>M (SD)</i>	<i>t</i>	<i>p</i>
Avg. LOS Post Ref & MHIS <u>IS</u> Consulted (Hrs)	6.27 (5.7)	6.01 (5.5)	.345	0.733
Avg. LOS Post Ref & MHIS <u>Not</u> Consulted (Hrs)	6.51 (5.7)	5.57 (4.5)	2.33	*0.020

*Significant at 0.050

4.2.3 Quantitative Analysis Two - Duration of Assessment

With regard to the perceived association between MHIS consultation and shorter psychiatric assessment duration, no significant differences were observed in analysis two. This analysis was performed on a subset of dataset 1, on records where the duration of psychiatric assessment were recorded ($n = 329$). The researcher extended the analysis to include the discipline of the clinician who completed the assessment, and the time of presentation, being either day time, or out of hours. No difference to the significance was observed taking these additional parameters into account. These results which are available in table 4.3 are surprising when the qualitative data so strongly suggested otherwise, however they reflect the findings of the earlier analysis with regard to impact on LOS duration, and will be discussed further in chapter 5.

Table 4.3 Duration of Assessment - LOS and Clinician Relationship

MHIS Consulted	Doctor Avg Assessment (Mins)	Nurse Avg Assessment (Mins)	Avg Total LOS Nurse Asmnt (hrs)	Avg Total LOS Doc Asmnt (hrs)	Day Avg (Mins)	On Call Avg (Mins)
Yes	72mis	89	9	9	82	74
No	76	82	9	9	82	76

4.2.4 Sub-theme 2: Supporting staff confidence in clinical decision making

All participants remarked how access to the EPR supported their clinical decision making process and gave them more confidence in the diagnosis and discharge planning aspect of their work.

“I suppose what I mean is, I have more confidence in my discharge planning and risk management. It’s like I know the patient will be OK and that they do have the services or supports required to see them through to the next OPD, I can see it all in their chart” - P4

“If they don’t have an EPR I just don’t know the levels of engagement, and so I will be looking for a more urgent referral and further assessment, or perhaps admission as I have to err on the side of caution, even if I’m not fully convinced it’s required. Better to be safe!” - P3

Participants reported patients often present to the ED with a particular outcome in mind, they may be seeking medication, or indeed admission to the hospital. In the absence of an EPR, and often with a scarcity of information, the staffs are relying on their professional skills in assessment and diagnosis, to resist the pressure from patients and maybe family members to arrive at a particular outcome. However when psychiatric emergency staff have access to the EPR they feel more self-assured in their assessment and “backed up” in their professional clinical decision making.

“When you are sure of a patient’s history, you can hold tight on your decision. When they know that you know their history, they are less like to continue to chance it, or persuade you, they know you won’t change your mind. These patients are less likely to represent to the ED as they know they will not achieve the outcome they desire, even though what they desire is not deemed to be in their best interests” - P5

“Gives you confidence that you are on the right track with your plan, and that you have a good sense of your patient, when you know that other professionals have a similar clinical opinion regarding what’s going on for them” - P2

“Knowing what’s worked before, or not as the case may be, is a great basis for discharge planning and you feel confident that your plan will deliver a positive outcome for the patient” - P3

Two participants acknowledged their awareness of introducing a preconceived notion of the patient, by having viewed their EPR in advance of meeting with them. They both felt however that their awareness of this helped them ensure to remain objective, and that really all they wanted from the history was support for their clinical decision making.

“I know going to the EPR beforehand kind of introduces a pre-conceived notion of the person I’m about to meet, but I’d prefer to have the information and then make my own clinical judgement, using it as a reference rather than an exact account of the person” -P5

“Sometimes I don’t go to it until after I have met the patient, I’m confident in my own analysis, I use the EPR as kind of an objective support for my own assessment” - P1

4.2.5 Quantitative Findings: Supporting staff confidence in decision making

Analysis three which was conducted on the full dataset 1 ($n = 991$), looked at the rate of admission when an EPR was consulted against when it was not. This is a reflection of the decisions reached by the emergency staff when they have access to a mental health EPR. See table 4.4 for statistical breakdown.

Table 4.4 Statistical breakdown of Admissions by MHIS Consultation

MHIS Consulted	<i>n</i>	LOS Post Ref Mean Hrs (StD)	Total ED LOS Mean Hrs (StD)	InVol Admission (%)	Voluntary Admission (%)	Discharge to OPD (%)	Absconded	Medical Admission
Yes	277	6.19 (5.6)	9.06 (6.1)	11 (31%)	22 (14%)	238 (31%)	1 (17%)	5 (21%)
No	714	6.24 (5.4)	9.35 (6.0)	25 (69%)	137 (86%)	528 (69%)	5 (83%)	19 (79%)
<i>N</i>	991	6.23 (5.4)	9.7 (6.0)	36 (100%)	159 (100%)	766 (100%)	6 (100%)	24 (100%)

A Fisher's exact test was employed as one of the groups (absconders) had less than 5. The probability indicates that the expected count of voluntary admissions when an MHIS EPR is consulted should be 44, however the observed count was 22. (Fisher's, 22.13, $p=0.000$) analysing the data with Fisher's exact test yielded a significant ($P=0.000$) result.

The figures, which are available in table 4.5, where 1 indicates MHIS was consulted, and 2 indicates MHIS was not consulted, show that the expected count of outpatient (OP) discharges was also higher (238) than expected (214).

These findings support the accounts of the liaison psychiatry staff who state that they are more likely to manage the patient in a least restrictive way, when they have reliable information available to support their decision making process.

Table 4.5 The Admission decisions made in relation to MHIS consultation

Decision	InVol Admit		MHIS Consulted		Total
			1	2	
	InVol Admit	Count	11	25	36
		Expected Count	10.1	25.9	36.0
	Vol Admit	Count	*22	137	159
		Expected Count	44.4	114.6	159.0
	Med Admit	Count	5	19	24
		Expected Count	6.7	17.3	24.0
	OPD Discharge	Count	238	528	766
		Expected Count	214.1	551.9	766.0
	Absconded	Count	1	5	6
		Expected Count	1.7	4.3	6.0
Total		Count	277	714	991
		Expected Count	277.0	714.0	991.0

*Fishers test Significant at .050.

4.2.6 Sub-theme 3: Supporting ED staff confidence in referral service

All staff expressed a sense of relief when a patient presented from the catchment area affiliated with the MHIS.

“First thing you do is check the catchment area, love to see its where MHIS is” - P2

“You almost feel a sense of relief when you see they are in the MHIS catchment area” P5

“ I don’t know if its related but you can rely on it that that service will be able to give an appointment within a couple of days - not weeks like the services without it” -

P1

Staff report feeling confident that their patients who have an MHIS record will be seen quickly and that the referral will be actioned, as they can see the referral has been received successfully and not lost. They like being able to relay this to anxious families and patients.

“I just know from experience and so am confident to say to patients that they will have an appointment within a couple of days. Families and patients get a lot of comfort from that - it’s great, I cannot say the same for other services unfortunately”

- P5

“I can see the referral on the system; it’s in the patient’s record. I know it has been received as soon as I send it. With other services it can takes days just to find out if the referral was received, often it’s lost. With MHIS I can also see that appointments was made etc. again no calls or gaps in the process” -P3

4.3 Theme 2: Supporting Inter-service Communications

The two main sub themes supporting this over-arching theme are “The 24/7 access to reliable information” and “DSH follow up process is more efficient”

4.3.1 Sub - theme 1: 24/7 access to reliable information

Instant access to reliable information and background history for the patient is a recurring theme which participants referenced when answering all questions during the interview process. However it is best placed as a sub section of the Supporting Inter Service Communications theme, as sharing information between services is fundamentally what inter-service communications is all about.

“It’s difficult trying to locate a doctor who could be in any number of OPD sites, or if you locate them to the hospital, they could be in rounds or meetings, and then you are with a patient when they call back, it can take hours before you finally make contact to get the information required” - P5

“It’s just so hard to contact treating teams, especially those in the community, out of hours or at weekends. I usually work day shift and even I find it takes hours to get a simple piece of information” - P1

“It’s so much more complicated for patients without an EPR, as you are not in an office all day and neither are the staffs in the other services with whom you are trying to make contact. If the information is in the EPR it takes two mins to check rather than the tic-tac throughout the day with calls” - P5

4.3.2 Sub Theme 2: DSH follow up process is more efficient

In responses to the question regarding the DSH follow up process, again difficulties and delays in making contacts with the community services were the prevalent issues, when an MHIS was not available. Staff frustration was evident when explaining the

process when an MHIS is not available, reflecting how the over-arching themes of Supporting Staff and Supporting Inter-service Communications are interconnected.

“It’s just so arduous for patients without an EPR, so hard to find staff who can give you simple answers, such as whether a patient presented for an appointment” - P4

“We often have lists of patients to follow up on; having the EPR makes that job so much easier and quicker. The group who have an EPR takes 5 mins the other individuals can take days even weeks!” - P2

“I just want to know if the patient showed up so I can close the case. A quick check on the system versus a number of phone calls - the whole process is so much quicker, just less hassle” - P5

Following through to the final question, when enquiring what would participants feel if the MHIS implementation project ceased? The perceived increased effort it would mean with regard to making contact with other services featured strongly.

“Well it would mean a lot more phone calls for a start, more time spent chasing!” -

P2

“We’d need more staff, simple as that. We don’t have the time, the population that is supported by MHIS are one third of our presentations, we would be even busier” -

P3

“MHIS came just in time, shortly after the implementation of DSH National Clinical follow up programme. I cannot imagine how busy we would be following up on all the cases from that catchment area without it” - P5

While all of the participants made positive remarks about how access to the EPR improved on inter-service communications, one was reflective when they mentioned that they felt it may in some ways cause a disconnect, but when its weighed up against the advantages it's not a big concern

“Ah, ye know, one drawback to fewer phone calls is that you lose the interpersonal connection a bit. Now don’t get me wrong, we have a very strong relationship with that service, but you lose the conversation and there’s something in that. Weighed up against the immediate access to reliable objective information though, it’s not a lot. I’m just saying sometimes the calls are good and necessary too.” - P3

The quantitative research into the impact that access to MHIS makes to the DSH follow up call volume, and number of days it takes to close a case, will be presented next.

4.3.3 Quantitative Analysis Three - Impact MHIS has on DSH follow up tasks

Quantitative analysis three was undertaken on the data relating to DSH follow up tasks ($n = 421$) please see group statistics in table 4.4.

Table 4.4 Group Statistics for DSH calls and days to close when MHIS consulted

	MHIS Consulted	N	Mean	Std. Deviation
Phone Calls	1	141	1.28	1.103
	2	280	1.80	1.617
Days to Close	1	141	2.10	1.657
	2	280	2.78	6.385

An independent-samples t-test indicated that the volume of calls to follow up was significantly lower in cases where an EPR was viewed ($M = 1.28$, $SD = 1.103$) than for cases where an EPR was not viewed ($M = 1.80$, $SD = 1.161$) $t(491, 3.44, p = .001)$.

There was no significant variance returned in an analysis of the impact on number of days to close.

The researcher observed that in 27% ($38/141 \times 100$) of cases where an EPR was accessed ($n = 141$), no phone calls were required at all to close the case for the DSH program. See table 4.6 where 1 indicates “Yes” that task was undertaken and 2 indicates “No” it was not.

Table 4.6 Various tasks required to close DSH Presentations

MHIS Consulted	Phone Calls Made	Number of DSH Presentations
1	1	103
1	2	38
2	1	280
2	2	0
		421

These findings partially support the reported experience of liaison staff, that access to the EPR introduces efficiency into the process of completion of their DSH follow up tasks. The unremarkable impact on days to close is surprising due to the significance with regard to number of phone calls, this could be related to the unit of measure chosen, and will be discussed further in chapter 5.

4.4 Theme 3: Patient Centred Care

A very strong theme which emerged across responses to all the questions was a sense of how access to a patient's mental health history strengthened the patient/ provider relationship, and promoted the various principals of patient centred care as outlined in chapter two. A number of sub themes featured under the overarching theme of Patient Centred Care these were, "ability to focus on presenting complaint", "building a rapport with the patient", "avoiding re-traumatising the patient", "personalised appropriate discharge planning and referral", and finally "less restrictive patient management".

4.4.1 Sub-theme 1: Ability to focus on presenting complaint

At times crossing into the efficiency theme, staff explained that as they didn't have to spend so long sourcing the patient history, they could spend time exploring what had led the patient to the current crisis.

Staff must obtain a complete history going back to childhood days in order to write up a complete assessment. If the information is already in the patient's electronic file then a lot of time is saved with that task, and the focus can therefore be set on the current episode.

“When we have the history available to us in the electronic file, we can focus on the presenting complaint, what's important for them at that moment” - P4

“You can really get to the nitty gritty, patients want to talk, they want to feel heard, it's great to be able to concentrate on that with them rather than answering questions” - P2

4.4.2 Sub- theme 2: Building rapport, avoiding re-traumatising the patient

All participants remarked how distressing it can be for a patient for whom there is no EPR, to give their full history. At a time when they are most vulnerable, after all they have presented to an emergency department, it is not a good time to add further to that distress, with a list of questions, recounting previously distressing encounters. Almost in the same breath, they also explained how having some background history helps to build conversations and rapport with patients.

“So many patients get so frustrated and distressed with the questions re their past history, all they care about is the now, they are tired of telling their story, they prefer when you are confirming details, it helps build a bond or rapport with your patient, makes it more of a chat” - P3

“The significance for patients is that they do not have to repeatedly tell their story. You can re frame questions to make the experience more of a conversation, .. ‘I see’.. ‘tell me about’.. you know, that sort of thing” - P1

“It’s nice that you are able to say that you are a bit familiar with their story. Patients actually say do I have to go through it all again ... they are in distress, they are in A&E, they have probably told 100s of people throughout their lives, they don’t want have to talk about their schooldays each time they present to a service” - P5

“Patients seem to feel like they have got something out of the visit, and are comforted knowing there’s some sort of continuity of care. Especially when you can say ‘look I can see on the system your referral has been received, so the service will be in contact with you shortly’ ” - P2

4.4.3 Sub - theme 3: Personalised and appropriate discharge planning and referral

Access to the history of a patient can help liaison psychiatry staff understand more fully what has brought them to this crisis point, or even if the patient is actually in crisis at all. This supports the discharge planning aspect of their work immensely. Two participants remarked that a patient’s preferred treatment options which have been agreed with treating team are often recorded in the EPR which helps to give the patient an objective voice in times of crisis.

“It really helps you to know what’s worked before and what hasn’t, rather than making unsuitable referrals as we are unaware of their previous levels of engagement with such services. Referrals to services where patient has been disengaged or is discharged just complicates things for patients, they are caught in a revolving door, it

is not the most supportive and delays the hand over to most appropriate OPD service”

- P5

“An awareness of the preferred treatment options agreed with treating team and patient and sometimes family, can help with the discharge plan, or, in some cases, decision to admit” - P3

As mentioned previously some patients have an agenda when they present to ED, they may not tell the staff their full story. Family members who accompany them or whom liaison staff have been given consent to contact, also may not know the true history, or may find it too distressing to try to remember the finer details of medications and treatments. Participants explained that understanding the patient and their needs of course will help staff plan a more tailored plan of care for the patient. This is very hard to do without reliable information.

“With MHIS you get a broader view of the patient. A better sense of them and why they may be presenting - if they are off their baseline, or if this behaviour is recurring” - P4

Though only one participant specifically referred to the confidentiality aspect, it is worth mentioning that when discussing assessment writing, a participant remarked that they felt MHIS promoted patient confidentiality when sharing patient sensitive information, and adherence to the principals of General Data Protection Rules (GDPR). As all participants remarked on how detailed assessment writing was reduced for patients with MHIS EPR, the researcher felt this remark was relevant to the study.

“There are also less issues with regard to sending unnecessary sensitive information via fax, all that information is sometimes just not needed. Using MHIS makes me think that we must be sending lots of repetitive information via fax to services that already have it, even if they don’t know they have it because they cannot locate a file - It’s gotta be good, ye know with GDPR” - P4

Reinforcing how all the themes are interlinked, the findings of the qualitative study referenced under supporting clinical decision making in section 4.2.4 could easily have been applied to this theme, as avoiding unnecessary psychiatric admission to hospital, could be seen as a patient centred approach to care.

4.5 Conclusion

The findings and analysis of both the qualitative and quantitative studies were presented in chapter four. The researcher introduced the thematic analysis of the qualitative research first, as the primary research question was focused on dimensions which were suited to a qualitative study, such as patient centred, personalised care. The findings from the quantitative study were presented in relation to the various themes as appropriate.

The researcher adopted this approach to presenting the study findings, as the quantitative research was undertaken in a bid to answer the supporting research question, and to support the findings of the qualitative study with measurable data. This aspect of the research was focused on analysing measurable attributes such as length of stay and duration of assessment. The results of the quantitative research,

did not always reflect the evidence which emerged in the in the qualitative study, and will provide a basis for discussion in the following chapter.

In chapter five the researcher will discuss the research findings, and offer possible explanations for some of the more unexpected results. The findings will also be discussed with regard to how they relate to the topics which arose throughout the literature review, and the researcher will reflect on these findings to see if the research questions have been answered.

5 Discussion

5.1 Introduction

In this chapter, the three over-arching themes arising from of the qualitative analysis, Staff Support, Supporting Inter-Service Communications and Patient Centred Care, the findings in the quantitative research, and the literature review will be discussed to see how they relate to each other, and whether the research questions were answered throughout this research process.

The qualitative research sought to answer primary research question as follows;

“Does consulting the mental health EPR afford Liaison Psychiatry staff an opportunity to offer more personalised, patient centred, quality of care, to those presenting to ED?”

To support this analysis with measurable data, the supporting question below was also addressed using quantitative methods.

“Does consulting the mental health EPR afford Liaison Psychiatry staff enhanced opportunities for efficiencies in care and service delivery?”

5.2 Supporting Staff

The qualitative data strongly suggests that liaison psychiatry staff felt that having the MHIS available to them to consult, supported them in their work on a number of levels, which emerged as subthemes during the thematic analysis process. The quantitative findings supported these perceptions in some cases, but surprisingly not in all cases. These sub themes are discussed below in relation to the literature review and the quantitative findings.

5.2.1 Efficiency

Prior to commencing this study, the researcher was aware that a perception of improved efficiency in various processes was attributed to the MHIS implementation in the study site. This perception appears to follow through during the course of the interviews where liaison psychiatry staff remark that access to the mental health EPR in ED *“just makes everything much quicker”*-P4, and *“makes life so much easier, 5 minutes and you have everything you need”* - P2.

Examining the data to see if efficiency as regards length of stay could be attributed to the consultation of the MHIS did not return a statistically significant difference. This could be due to the various other factors acknowledged as ED bottlenecks in the literature, such as awaiting a hospital bed or an ambulance transfer to another hospital, or awaiting accompaniment in order to leave the ED, or simply a delay in medical clearance due to how busy the ED environment is in general, (HSE, 2017, Pearlmutter et al., 2017) .

Examination of the literature reveals that it does not explicitly equate access to the mental health EPR with a shorter LOS. However, as mentioned in chapter two, research into the efficiencies mental health EPRs contribute to the ED is extremely limited. In the studies where length of stay in ED is referenced, the shorter LOS is attributed to the reduction in repeat mental health presentations, when the mental health EPR is made available, as observed by Washington State HCA in 2009 and reported by the US Government (2014).

It is interesting to acknowledge however, that the independent T test as per table 4.1 shows that where the MHIS was consulted, the LOS for patients was consistent regardless of the treating clinician. However where MHIS was not consulted, patients who were being treated by a doctor had a longer average length of stay. Again the explanation for this could be multifactorial, but the difficulty in co-ordinating communications between outpatient community services, and ED clinicians while both are working and treating patients cannot be ignored. It would be much more difficult to return a call and make instant contact with a doctor in the ED, as the ratio of doctors to nurses on shift at any one time would be lower (HSE, 2014).

As observed by Feeney and Moran (2007) and Lincoln (2002) if the doctor is experiencing delays in retrieving the information required, this may impact on the LOS for the patient. Of course another factor could be that the patients been treated by the doctor have more complex and challenging needs, but if this were the case, one would expect the same challenges to be reflected in the average LOS where an EPR was consulted.

The authors views were supported throughout the interview process, as significant emphasis was placed by all participants on the convenience and efficiency derived from access to the patient history in the ED. Participants reported a sense that the assessment process was quicker, and easier due to the availability of collateral information and patient history. “ *it’s just handy ye know, a lot less ringing around*” - P2. Once again however, the quantitative findings do not support these perceptions. While there appears to be no significant reduction in the assessment duration when the MHIS EPR was consulted, it is worth noting there is also no marked increase in the duration either.

Across the board, participants report a perceived improvement in the assessment process, and it is their view that their time is utilised in a more efficient manner as a result of having access to the MHIS. This could be considered a positive influence on ED Liaison staffs working experience, and highlights again how the themes intertwine in this study, such as efficiency with staff support.

As the time spent sourcing background information is reportedly reduced by having access to MHIS, all participants’ remark that they are then afforded more time to spend focusing on the presenting complaint with their patients. Though this aspect will be further discussed in section 5.4.1, perhaps it explains why the duration of assessment is not significantly reduced when the MHIS EPR is consulted, in the quantitative analysis. It could be argued that more time is being spent exploring the presenting complaint, and care planning with the patient, rather than an actual

reduction in time spent with the patient assessing them, a nuance which was not fully teased out by the interviewer.

A gap was again identified in the literature as no studies were found where possible correlations between time savings and access to patient history were explored. The benefits reported in the literature focus on the patient experience, which is yet another example of the overlap of the themes in this research, and will be discussed in section 5.3.

Other references to efficiency which feature powerfully throughout all interviews are the perceived time savings the MHIS has introduced to the follow up process under the National Clinical Program (NCP) for Deliberate Self Harm (DSH). Though all participants expressed strong views in this regard, a previously featured quote encapsulates the impact that the system has made *“MHIS came just in time, shortly after the implementation of DSH National Clinical follow up programme. I cannot imagine how busy we would be following up on all the cases from that catchment area without it”* - P5. As this aspect to the efficiency theme is closely related to inter service communications it will be discussed in more detail in section 5.3.

The secondary research question was posed in order to provide some measure around the efficiency and quality of care interdependence.

“Does consulting the mental health EPR afford Liaison Psychiatry staff enhanced opportunities for efficiencies in care and service delivery?”

The quantitative research which was undertaken in a bid to answer this question was predominately focused on the measurable units of information available to the researcher. The findings of the quantitative research only partially support the hypothesis that consulting the mental health EPR does afford liaison psychiatry staff enhanced opportunities for efficiency. Limitations to the data units measured, and the quality of data may have had a bearing on these results. Unsurprisingly however, the qualitative data would strongly suggest that yes opportunities for efficiencies in care and service delivery are afforded to liaison psychiatry staff by consulting the mental health EPR.

The following sections will discuss in detail, the remaining sub themes and overarching themes which have emerged from the qualitative aspect of the study which was focused on answering the primary research question, some more quantitative findings will support these themes also.

5.2.2 Supporting staff confidence in clinical decision making

A strong theme throughout both the literature and the qualitative research process is that access to the patients mental health history at the point of care supports staff in their clinical decision making process, and how difficult it is to obtain this information.

Emergency psychiatric staff report significant difficulties when trying to source reliable information regarding the patient's history stating it can be "*difficult and time consuming*"- P3

The research of Segal et al. (2001), Lincoln (2002) , and Petrik (2015) supports this, as they report that context and circumstances of the patients current presentation, can impact the objectivity of the account provided of supporting friends and family. The participants agreed with Carey (2000) who explained that clinicians prefer to have multiple indicators to help them develop a sense of the patient, *“You would like to trust the patient’s account but you need to be cautious, it’s not enough on its own”* - P2.

The difficulty in obtaining the information from patients and their accompanying collateral sources is further impacted by the nature of emergency care which is unplanned and emotionally charged. As a result important but more tricky information such as medication history is not forthcoming as explained by Hripcsak (2007), and corroborated by participant number 2 *“ family and friends, don’t always know the extent of the issue, or they find the whole situation too upsetting, and cannot remember the important information such as treating team, previous interventions, or meds”*

A powerful example of what a critical difference it makes to have access to the mental health history at the point of care, was described when participant 5 recounted the story of a patient who presented with deliberate self-harm and suicidal ideation but had not disclosed that they had had a previous episode. *“They were just too ashamed to tell me, they weren’t trying to deceive me or anything, but had I not seen it in the notes, I would probably have dealt with that case differently, and the outcome could have been really bad”*.

This experience is similar to those reported by various authors in their discussions about the significance of reliable collateral and background information has on their clinical decision making (HSE, 2012a, Greene, Wilson and Zeller, 2012, Tsai and Bond, 2008).

A Fisher's probability test conducted on the rate of psychiatric admissions when the MHIS was consulted as opposed to when it was not consulted, indicates a lower than expected number of voluntary admissions and a higher than expected number discharges to community, or OPD services. These findings show that when reliable patient history is available with details of past interventions which have worked, or not worked as the case may be, clinical staffs are more confident to manage the patient in the community in less risk adverse manner. This is a further example of how MHIS supports another dimension of quality care "Patient Centeredness" (IOM, 2006) in service delivery.

These results are reflected throughout the literature in many studies such as Feeney and Moran (2007) who reported that 66% of respondents to their survey of Consultant Psychiatrists said that they would have made different decisions had more information been made available to them, and of Unick (2011) who reported significant reduction in psychiatric admission rates in their three month study of admission rates to San Francisco's only 24 hours emergency service, when the patients mental health history was known to clinicians. The responses to the qualitative aspect of this study also echoed these findings with comments such as *"it allows me to manage patients in the least restrictive way"* - P4

Of course having the confidence to manage the patient is a less restrictive way crosses over into the patient centred theme and will be discussed in section 5.4.

5.2.3 Supporting ED staff confidence in referral service

The confidence of staff in the service where they are referring the patient crosses over between the themes of staff support and patient centred care once again. Liaison psychiatry staff report feeling a sense of relief when they know the patient belongs to the catchment area affiliated with MHIS *“You almost feel a sense of relief when you see they are in the MHIS catchment area”* - P5.

This is important to them as if the patient is an existing patient with an EPR, liaison staff know they will have more information to help them plan more effectively for the patient, *“Gives you confidence that you are on the right track with your plan”* - P2.

In addition to this, staff report that they are confident the patient will be followed up with more quickly by the MHIS affiliated service as opposed to other services. *“ I don’t know if its related but you can rely on it that that service will be able to give an appointment within a couple of days - not weeks like the services without it”* - P1.

The literature supports the importance of having confidence in the discharge planning and referral strategy for patients as adherence to follow up psychiatric care in the community, has been widely associated with more positive outcomes for the patient

and reduced suicide rates (HSE, 2012a, Carroll et al., 2014, Kapur et al., 2004), and reflect the IMO(2006) dimensions of safe and effective care.

5.2.4 Summary

Efficiency, timeliness, safety and effectiveness are four of the six dimensions of quality care as defined by the IOM where best use of resources, appropriate interventions and reduced waiting times are equated with quality mental healthcare (IOM, 2006). All of these dimensions have been reflected in this section as being attributes promoted by access to an MHIS EPR.

5.3 Supporting Inter-service Communications

Access to reliable information and the impact that has on service provision and patients care is the foundation for this entire study. As the information is flowing between services it is fitting to discuss it under the Inter service communication theme. The follow up process under the NCP for DSH is based around information retrieval and inter service communication and both sub themes really have been referenced in response and discussion around each question posed in the qualitative research process. The Institute of Medicine (2006) advocate that services should work at bridging the communication gap and strive toward a position where information is freely shared among clinicians and services, in order to improve the healthcare landscape for patients. The opportunities that MHIS provides in this regard will be discussed hereunder.

5.3.1 Access to reliable information

Referred to as the “chain of survival” by Knesper (2011), patient information and sharing of details of community care interventions are crucial to supporting informed decisions related to medications, referral, risk strategies etc. (HSE, 2012a, Wilson and Zeller, 2012). The NICE Standardising Authority (NHS, 2016) have declared that in order to be effective and efficient, mental healthcare must facilitate on site access for ED staff, to the mental health record their patients. Many of the previously expressed views of participants in this study would support this position for example *“This is a psychiatric emergency service, emergency being the key! Any delay in information retrieval is not at all helpful, it makes things quite difficult for everyone in fact”*- P1. The literature is quite clear that legal, confidentiality, and data protection concerns have impacted internationally on the progression of EPR adoption in mental healthcare (Peterson and Wickeham, 2011, Kokkonen et al., 2013).

Furthermore interoperability issues are an additional concern where EPRs do exist, but there are sizeable challenges to be overcome in order to share the data out of their silos, with other systems or services. In Britain Ser et al. (2014) reported that due to the silo effect psychiatry staff must log into additional systems, with different passwords, and as such they are reportedly less likely to go to the effort of checking an EPR even when one is available. This was also the experience of Bailey (2013) in a leading hospital for EPR adoption in the USA.

The researcher in this study however did not explore accessibility issues with participants, as this was not a study based on appraisal of the system itself. In the

study site, liaison staff must log into a separate network and system in order to access the MHIS EPR for their patients. The opening question “When you know there is an EPR available to you for the patient, do you always consult it....Yes \ No - Why?” was expected to throw up any hot topics with regard to accessibility, without being a leading question, was answered with a resounding “Yes”. The incompleteness of data made available to the researcher would suggest otherwise however, and this may be a factor worth exploring in a future study.

5.3.2 Supporting the DSH follow up process

In addition to building an understanding of patients previous mental health history which has been discussed, the importance of inter-service communication in the mental health services is also related to following up under the National Clinical Program (NCP) for Deliberate Self-Harm (DSH), to see if the patient has successfully been linked with their community treating team or GP services, so the follow up case can be closed by liaison staff. The qualitative data strongly suggests that MHIS is an invaluable resource in this process. *“ A quick check on the system versus a number of phone calls.. just less hassle” - P5*

Analysing the average number of calls it took to close 421 cases and the number of days it took to do so, the figures do back up the qualitative findings in this case, partially at least. When the volume of phone calls required when closing off follow up cases under the NCP for DSH are analysed. The findings are significant in that it takes fewer calls to close a case when the MHIS is consulted that when MHIS is not consulted. The figures also show that in 27% of cases where the EPR was consulted, no telephone calls were required at all. Not only do these findings indicate an

improvement in efficiencies in the study site, but they can also be deemed a benefit by virtue of an unintended consequence, to the services which would have had to receive the call from ED, and follow up a response to the request for information, and most possibly return the call to the ED clinician.

Having access to the MHIS means the liaison staff can check the patient's record, and see if an appointment has been made for them with their community team. It also allows them see if communication has been made with the patient regarding this appointment. This takes just a couple of minutes, and they can close off the follow up case if they can see the patient is now under the support of their treating team. *"The group who have an EPR takes 5 mins the other individuals can take days even weeks!"*

P2

The tic-tac on inter agency phone calls appear to be quite laborious for liaison staff. *"It's just so arduous"* - *P4*. As detailed in section four the comments regarding the follow up process reflect a sense of despair at the time required to undertake this follow up process in the absence of an EPR. It is important to point out; that all this time spent on phone calls is valuable time not being spent with patients.

The follow up call log is not only related to interagency follow up but also with patient follow up support. If a patient does not have an appointment for a few days or weeks then ED staff must continue to offer telephone support and each call can take a significant amount of time *"Sometimes the patient's still need a lot of support until they are fully linked in, you can find yourself in a call for an hour at a time supporting one patient"*- *P5*

It was interesting to hear two participants mention that though some patients don't actually need a call back, as they are linked in with their community service, "sometimes *you still give the call as you know they need to talk and will benefit from it.*" - P2. These follow up calls would be logged and included in statistics and as such, suggest that the call volume should be even lower than recorded where MHIS is available.

Further analysis of the data shows that in contradiction to the phone call volume, the average number of days to close follow up cases is not significantly impacted by whether MHIS was consulted or not. This again goes against the reported perception of liaison staff who indicated the case closure process was much quicker when MHIS was available. An explanation for this could be that one day was the lowest measure for closure of a case, and if in that day it took just a quick check on the MHIS, or 5 follow up telephone calls, it was not clear. So upon reflection, the unit of days is not a good measure of the efficiency afforded by access to the MHIS EPR in this instance.

No other community based service is sharing their EPR with a liaison psychiatry ED team in Ireland, in fact they do not have an EPR to share! Therefore It was not possible to find literature where the impact EPRs have on the follow up process under National Clinical Program for DSH have been explored.

However all of the literature referenced in section 2.4 regarding the link between follow up supports and adherence to outpatient care would be applicable. Such research indicates that efficiencies of service and swift access to OPD supports equate

to better outcomes for patients. As previously explained, the liaison psychiatry team believe the MHIS affiliated site are in a position to offer appointments quicker to their patients, however comprehensive research of this hypothesis is beyond the remit of this study, and warrants further investigation.

5.3.2 Summary

Access to the electronic patient record not only provides reliable information for clinical decision making, but also helps liaison staff complete their onerous administrative tasks more efficiently and is suggested improves their working environment by removing some stressful barriers to communication with external services. These findings are another example of how MHIS access promotes two dimensions of quality mental healthcare, efficiency and timeliness (IOM, 2006)

5.4 Patient Centred Care

Patient-centred care is placed centre stage in discussions of quality in healthcare, this can be attributed mainly to the Crossing the Quality Chasm report by the IOM(2001) where it is recognised as one of the key dimensions of quality in healthcare.

In this landmark report the authors define patient-centred care as:

“Providing care that is respectful of, and responsive to, individual patient preferences, needs and values, and ensuring that patient values guide all clinical decisions”

The sub themes discussed hereunder reflect all of these attributes, and MHIS would appear to support services in their efforts to apply the principals of patient centred care to mental health service delivery.

5.4.1 Ability to focus on presenting complaint

Participants were united in their expressed satisfaction at being able to spend more time with their patients exploring the issues around presenting complaint and less on recording background history, as the historic detail is already available in the EPR. *“..we can focus on the presenting complaint, what’s important for them at that moment” - P4.*

As discussed briefly in section 4.2.2.2, the analysis of the quantitative data available to the researcher does not support the reported accounts of quicker assessment, or the perception that LOS must be reduced because of these perceived efficiencies. However, it is clear that staff feel they can spend more time on the presenting complaint when they have an EPR available and this may account for the insignificant findings with regard to differences in assessment duration when an MHIS EPR is consulted, or is not consulted.

The literature conveys the importance patients place on feeling understood and listened to (Zun, 2016, Shattell et al., 2007). Harris(2016) reports that patients dislike obvious clock watching or abrupt requests for information. The additional time afforded to clinicians who have used MHIS during assessment as reported by

participants, helps to alleviate some of the pressures to get as much information from the patient as quickly as possible.

5.4.2 Building rapport, avoiding re-traumatising the patient

The importance of a good patient practitioner relationship is reinforced throughout the literature, from a patient satisfaction perspective and importantly from a recovery point of view, especially with regard to mental healthcare (Allen et al., 2003a, Allen et al., 2003b, Shattell et al., 2007). It is within this sub theme that literature and the qualitative data are inextricably linked in this study.

As quoted in section 4.4.2 liaison psychiatry staffs were clear and unanimous in their various accounts of how important and preferable it is to have information to support conversation. Remarking that patients “*often sigh with relief*” when they realise they will not have to recount their history all over again, liaison staff can really see the impact repetitive questioning has on their patients. Research by Shattell (2007) and Zun (2016) avidly support this position.

The literature and participants are in unison again with regard to the reported dislike of patients to continuous lines of questioning. The increased levels distress and anxiety when patients feel under pressure to know the complicated facts of their medical history such as meds (Harris et al., 2016), and having “*to go through all that again*” when asked to recount some very upsetting past experiences. Both data sources advocate access to an EPR as a solution to these issues.

The issue of stigma was an unexpected theme which emerged in the literature and even more surprisingly was referenced during the qualitative interview phase also. Stigma felt by mental health patients from healthcare staff in the ED is a serious issue, with devastating effects on the recovery of patients. Numerous studies have reported the negative impact stigma and bias can have on patients (Carstensen et al., 2017, Petrik et al., 2015, Allen et al., 2003a).

It is reported in the literature that some patients feel practitioners put a label on them and treat them all the same. Access to the EPR which can put context and a story behind a patients repeat presentations can help staff overcome their bias, and have empathy for patients (Shattell et al., 2007, Cooper et al., 2005).

One of the participants acknowledged the propensity for bias from accessing the patient history before meeting the patient, but they too felt that knowledge of the patient history would help with building rapport, and that a negative bias was less likely as they were self-aware.

Another participant acknowledged that providing context regarding a patient's life experience to non-mental health staff in the ED, can help those who struggle with empathy for mental health patients. Warning however a balance must be maintained as regards disclosure *"Sometimes when they have a bit more information about what the patient has been dealing with they are more empathetic. But you have to be careful with regard to patient confidentiality too"* - P5. The dimension of Equitable care (IOM, 2006) is reflected in how access to information in the EPR can help break down barriers and stigma.

5.4.3 Personalised and appropriate discharge planning and referral

Throughout the literature review it was reported by various authors that patients providing input into their treatment planning was a favourable approach. Patient's input into treatment options was identified by Allen (2003a, 2003b) in their research with clinicians and with patients alike as being extremely important. In fact the Irish Mental Health Commission requires evidence of patient and family input into the care planning process for mental health patients.

Interview participants reported that not only the patients but they themselves preferred when they could plan a patient's discharge with visibility of previous strategies and preferred treatment options.

“Knowing what's worked before, or not as the case may be, is a great basis for discharge planning and you feel confident that your plan will deliver a positive outcome for the patient” - P3

Appropriate, and thereby personalised discharge planning and referral, are key factors in reducing repeat presentations to ED, and both the research of literature and the data acquired from the interview process reflect this. It is not useful to a patient to discharge them to a service where they have been disengaged in the past. Clinicians will not know this without access to the patient history.

As previously detailed, both sources believe information in the EPR gives the patient voice in their treatment at a point when they maybe unwell. The introduction of

psychiatric advance directives (PADs) could prove to be a useful once interoperability issues in the sector have been overcome.

5.4.4 Summary

Reviewing all of the references to patient supports, safety, personalised planning, and equitable care, which were discussed in this section alone it would be fair to say that the primary research question, which asked does access to an EPR afford staff opportunities to offer more personalised and patient centred quality care to patients, has been answered with a resounding “Yes” by the qualitative, and some of the quantitative aspects of this research project.

5.5 Conclusion

The themes emerging from analysis of the qualitative data, the quantitative findings and the literature review were discussed in this chapter. While the quantitative data did not always support the views expressed by liaison staff, there were some significant findings with regard to efficiencies and clinical decision support.

Throughout the discussion, the six dimensions of quality mental health care as defined by the IOM were clearly identified as being supported by access to the MHIS EPR.

The following chapter will discuss the limitations of this study and offer recommendations for future research.

6 Conclusion

In this chapter conclusions from the research which has been detailed in previous chapters will be presented. Study limitations will be identified and possibilities for future research proposed.

6.1 Introduction

This study sought to ascertain if access to a mental health EPR at the point of care afforded staff an opportunity to offer for personalised and patient centred quality care. A mixed methods approach was employed to offer a comprehensive evaluation. The limitations, recommendations and summary of the findings are detailed below.

6.2 Limitations

While every attempt was made to apply rigour to this research project, it is not without limitations.

The volume of incomplete data rendered almost half of the data (approx. 900 records) unavailable for analysis. Though it's unclear at this point how the findings may have been impacted it is possible to have had some bearing on the study.

Possibly related to the quality of data, the lowest unit of measure (Day) available to evaluate efficiency of closing the DSH follow up process, was not a sufficient unit to

reflect accurately any efficiencies that may have been derived from use of an EPR during that process.

Had quantitative data been available for analysis prior to the interview process the interviewer may have had an opportunity to explore some of the responses offered during the interview process. Such as where staff over whelming felt the assessment process was more efficient when access to an EPR was available and yet the measurable data did not bear this out. Though an explanation for this has already been offered in chapter 5, it would have been more appropriate if that explanation had come directly from participants, during the course of the interview, rather than proposed by the researcher.

Upon reflection, the inexperience of the researcher with regard to interview technique could have been a factor in not identifying anomalies until the transcription phase, and therefore not teasing out inconsistencies during interviews.

The non-clinical role of the researcher, and therefore their inability to view or clinically assess patient sensitive medical data with regard to correlations regarding presenting complaints, and interventions, length of stay, and repeat presentations limited the scope of analysis and evaluation that could be undertaken in this study.

A further limitation to this study, could also be attributed to the researchers connection to the MHIS, and participants awareness of that during the interview phase.

6.3 Recommendations

This study exposed a number of gaps in the literature internationally with regard to how efficiencies related to EPR implementation have been researched, especially in mental health care. The researcher details hereunder two studies which could be undertaken within the Irish healthcare system.

It was interesting that all participants remarked that the service where the EPR was implemented appeared to be in a position to engage with patients and offer them appointments much more quickly, than services operating a paper based system. It would be interesting to investigate if it is the EPR which is the point of differentiation between these services and to what degree can the efficiencies be attributed to the availability of EPR.

A further extension of that study would be to invite patients to participate in a study to understand the benefits and, or drawbacks of an EPR in their experience of mental healthcare service delivery. It would be of particular interest to source the views of patients who have changed catchment areas from where no EPR is available to a where an EPR is available, or vice versa.

6.4 Conclusion

The experiences of liaison staff who work with the MHIS as reported throughout the qualitative research are supported by the international views arising from literature. Access to a mental health EPR at the point of care does afford staff opportunities to

provide personalised patient centred quality care. While the quantitative results did not always support these perceptions some significant findings were produced.

In Ireland there are two different mental health EPR systems implemented, one of these is the MHIS. Neither of these two systems or services have any interaction or interoperability functions, nor are there plans to establish any such links for a myriad of business and data protection reasons.

The rest of the Irish mental health service is paper based despite the national task force for mental health advising the Government in 2006 and again in their review in 2016 that in the best interests of mental health patients in Ireland, a national mental health EPR should be made implemented (HSE, 2006). The findings from this research would indicate that the 12 year old advice of expert task force on mental health is still valid today, and mental health patients and services would greatly benefit from a national integrated mental health EPR.

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Appendices

Appendix 1

Email invitation for Prospective Participants

As members of the liaison psychiatry team with access to the MHIS, you are invited to participate in a voluntary interview process which will be conducted on site, as part of a Masters Research project entitled “Bridging the quality chasm in emergency mental healthcare, with access to the mental health EPR in the emergency department”.

The primary investigator is Louise Prendergast, the project manager of MHIS. The study aims to scientifically back up anecdotal reports that; consulting the mental health EPR affords Liaison Psychiatry staffs an opportunity to offer more personalized, patient centred, quality of care, to those presenting to ED.

Please see attached information sheet for further detail to help you in your decision making process.

PLEASE DO NOT RESPOND WITH YOUR DECISION TO ME

Please email prendelo@tcd.ie with your signed consent form (attached), or post a signed consent form to Louise at the address on the consent form, within one week of receipt of this mail, in order to indicate your willingness to participate. Only those who have submitted a signed consent form can be accepted as participants, and subsequently contacted by Louise.

You are not obliged in any way to take part in this process. It is a completely voluntary decision.

I will not be made aware of your decision to participate or otherwise.

Should you decide to participate; - I will never see any identifiable information regarding your interview.

Your interview will be scheduled at a time convenient to you during a shift.

You will not be obliged to work this time back at any point.

Thanks and regards,

Appendix 2

INFORMATION SHEET FOR PROSPECTIVE PARTICIPANTS OF STUDY

1. The background context of the research

The Saint John of God Mental Health Information System (MHIS) was implemented for psychiatry staff access in SVUH ED on June 29th 2016. This study aims to gain a qualitative perspective from the liaison psychiatry staff in SVUH ED about the impact both positive and negative of having the patient's electronic mental health record available at point of care in the ED, and to support follow up care for the deliberate self-harm national clinical program. This information may be of interest to management in both services when determining the future course of the project. This study is being undertaken in part fulfillment of the researchers MSc in Health Informatics with Trinity College Dublin.

2. Research Participant Information

- You are invited to participate in a 30 minute interview with the lead researcher Louise Prendergast
- Should you chose to participate, the interview will be conducted in a private location in SVUH during your shift, and you will not be obliged to work back in the time
- Interviews will be scheduled with you so that they proceed at a convenient time to you and your service

- The interviews will be recorded on a password protected mobile device, or hand written notes will be taken by the principal investigator if preferred by the participant
- Immediately after the interview, the recorded \ hand written data will be transcribed into an individual file, which will be password protected.
- This file which will have a unique ID will be saved on a secure network drive. It will only be accessed using an encrypted password protected device thereafter.
- All identifiable information will be removed during transcription
- As soon as the interview has been transcribed, it will be deleted from the mobile device, and / or all hand written notes destroyed
- You will be identified in all transcripts, by a unique ID code assigned to you by the researcher, not by your name.
- Only the researcher and academic supervisor will have access to the transcripts.
- You will be asked a series of 5 questions, each with two sub questions
- There will be no right or wrong answers, your honest opinion and experience is all that will be required, your career will not be impacted by the responses you give
- Should you choose to participate, you must email the primary investigator directly, attaching a signed consent form (attached)
- You must return this completed form so that the researcher is permitted to make contact with you and accept you as a participant on this study

- You have one week from the receipt of this mail to opt into the process by emailing the researcher directly with the completed consent form.
- You have the right to withdraw from the interview at any time, and at that moment any recording will be erased in your presence, and notes destroyed
- There will be no repercussions professionally should you decide to withdraw from the process at any stage. This is a completely voluntary exercise.
- A copy of the transcript will be made available to participants upon receipt of an email from individual participants requesting the transcript. It is important that the requesting email comes from an email address the participants wishes to receive the transcript to.
- To ensure utmost confidentiality, transcripts will be sent by reply email only to the email address used by the requesting participant.
- These emails will be encrypted and password protected
- Participants will have until one week after the last interview to correct the contextual appropriateness of content and verify quotes. This date will be given to interviewees at the end of their interview, and / or withdraw from the process completely.
- Audio recordings will never be played in a public forum
- Should an interviewee choose to withdraw from the process, all electronic and hard copy data will be destroyed completely without delay
- Each interviewee will receive a copy of the final transcript
- Data will be treated \ retained\ destroyed in accordance with the

researchers obligations under the data protection act 98 /02 and
GDPR 2018. Therefore data will be deleted after 10 years.

Appendix 3

INFORMED CONSENT FORM

LEAD RESEARCHER: Louise Prendergast

BACKGROUND OF RESEARCH: The Saint John of God Mental Health Information System (MHIS) was implemented for liaison psychiatry staff access in SVUH ED on June 29th 2016. The MHIS is an electronic patient record (EPR) system, which holds the entire primary mental health record for a cohort of patients who present to SVUH ED for emergency psychiatric services, from a particular catchment area.

This study aims to gain a qualitative perspective from the liaison psychiatry staff in SVUH ED, about the impact of having the patient's electronic mental health record available at point of care in the ED, and to support the follow up care for patients under the deliberate self-harm national clinical program.

The researcher hopes to gain this insight by interviewing liaison staff about the differences they experience in care, support and follow-up procedures for patients with and without an EPR.

This information may be of interest to management in both services when determining the future course of the project. This study is being undertaken in part fulfillment of the researchers MSc in Health Informatics with Trinity College Dublin

PROCEDURES OF THIS STUDY:

- Upon receipt of a signed consent form the researcher will make contact with participants to arrange an interview at a time suitable to them, in their place of work SVUH.
- As participants make contact with the researcher they will be assigned a unique ID and all subsequent information and communication will be saved under this unique ID not their name
- Participants are permitted to attend for interview without any obligation to work back in the time
- Interviews will be conducted on a one to one basis and will last approx. 30 mins
- The interview will comprise of 5 questions each with two sub questions
- There will be no right or wrong answers, simply the participants experience and point of view is required
- Interviews will be recorded on a secure mobile device, or by hand written notes whichever the participant prefers.
- Immediately afterwards they will be transcribed and all identifiable information will be removed
- The interview will then be deleted from the recording device, and /or hand written notes will be destroyed
- Upon receipt of a direct request from a participant, the researcher will send a full transcript to the participant (see information leaflet for more detail)
- Participants have until one week after the final interview is conducted to request changes, or to withdraw completely from the process. They will be given the relevant date at their interview
- Participants are free to withdraw at any point in the process without any repercussions (until that given date)
- Their electronic and any hard copy data will be deleted immediately
- Participation is on a completely voluntary basis throughout the process
- All participants will receive a copy of the research dissertation upon completion
- All data will be treated with strictest privacy and retained and destroyed in line with data protection acts 1988/2002 and GDPR 2018

PUBLICATION: The dissertation derived from this research will be presented to Trinity College Dublin in part fulfilment of the researchers MSc in Health Informatics. Any subsequent publications related to this research will maintain the anonymity applied to the original document.

Individual results may be aggregated anonymously and research reported on aggregate results.

DECLARATION:

- I am 18 years or older and am competent to provide consent.
- I have read, or had read to me, a document providing information about this research and this consent form.
- I have had the opportunity to ask questions and all my questions have been answered to my satisfaction and understand the description of the research that is being provided to me.
- I consent that my data is used for scientific purposes and I have no objection that my data is published in scientific publications in a way that does not reveal my identity.
- I understand that if I make illicit activities known, these will be reported to appropriate authorities.
- I understand that I may stop electronic recordings at any time, and that I may at any time, even subsequent to my participation have such recordings destroyed (except in situations such as above).
- I understand that no recordings will be replayed in any public forum or made available to any audience other than the current researcher/research team
- I freely and voluntarily consent to be part of this research study, though without prejudice to my legal and ethical rights.
- I understand that I may refuse to answer any question and that I may withdraw at any time without penalty.
- I understand that my participation is fully anonymous and that no personal details about me will be recorded.

I have received a copy of this agreement.

PARTICIPANT'S

NAME: _____ **SIGNATURE:** _____ **Date:** _____

—

Statement of investigator's responsibility: I have explained the nature and purpose of this research study, the procedures to be undertaken and any risks that may be involved. I have offered to answer any questions and fully answered such questions. I believe that the participant understands my explanation and has freely given informed consent.

RESEARCHER'S CONTACT DETAILS:

Name Louise Prendergast **Email** prendelo@tcd.ie **Mobile No:** 0879723714

INVESTIGATOR'S SIGNATURE: _____ **Date:** _____

I fully understand the procedures involved in the process of audio recording & I give consent to the audio recording of my interview for the purpose of this research only.

I understand that I can withdraw my consent, or stop participation in the recording at any time, or have all existing recorded sections erased, without any repercussions on my career.

I consent to be audio-taped for the purpose of this study only

NAME

PARTICIPANT _____ **SIGNATURE** _____ **DATE** _____

NAME

INVESTIGATOR _____ SIGNATURE _____ DATE _____

Appendix 4

Study Site Ethics Approval

20th March, 2018.

Ms Louise Prendergast,
MHIS Project Manager,

Co. Dublin

Re:- Bridging the quality chasm in emergency mental healthcare, with access to the mental health EPR in the emergency department. Email dated 15 March 2018.

Dear Ms Prendergast,

Thank you for your correspondence dated above regarding the above study.

Following review of this documentation, this study is granted Chairperson's approval for the Quantitative Data Source 1 & 2.

The semi structured interviews with staff do not come under the remit of the Ethics & Medical Research Committee.

Yours sincerely,



Chairperson,
Ethics and Medical Research Committee.

cc Dr:

Appendix 5

TCD Ethics Application

Cover Note Addendum

Please find section 5.6.2 page 12 updated regarding details of proposed TLS transmission of data

Please find Ethical Considerations section page 13 updated, regarding recently obtained ethical approval from the two hospitals in question. Appendices 5 (Pg.27) and 6 (Pg. 28) have been appended to the submission detailing these approvals.

Many thanks,

Louise

Cover Note

My Name is Louise Prendergast and I work in, I am studying for my MSc in Health Informatics in TCD and due to submit final paper on June 26th 2018.

I realise that is customary for students to be granted ethics in their study site/ company prior to seeking SCSS ethics approval. However, it has just been brought to my attention that the XXX Research Ethics Committee (XXXX REC); require proof of ethics approval from the university, prior to considering ethics applications. It is stated in the "Governance Arrangements for Students submitting Applications (2017)" document. Please note, I had familiarised myself with the XXXX REC application guidelines and support documents, but was not aware of a governance document.

I was planning to submit my completed ethics application to XXXX ethics on April 3rd with a view to attending for interview with the committee on April 17th 2018, but this information has introduced an unexpected hurdle to the process. If I miss the April XXXX ethics committee meeting it will be May 15th before I can apply.

I am therefore submitting to SCSS ethics in the hope that perhaps my submission is in time to be reviewed before April 17th, and maybe accepted on the condition that it passes XXXX ethics. I am hopeful that a note to this effect would meet with the needs of XXXX, as you can imagine at this stage I am anxious to avoid as many delays as possible.

Any assistance in this matter would be gratefully appreciated.

Many thanks and regards,

Louise Prendergast

Title of Project

“Bridging the quality chasm in emergency mental healthcare, with access to the mental health EPR in the emergency department”

Purpose of the Project

The main objective of the study is to attempt to answer the research question “Does consulting the mental health EPR afford Liaison Psychiatry staff an opportunity to offer more personalised, patient centred, quality of care, to those presenting to ED?”

Though much research has been conducted into the clinical and pharmacological treatment of mental health patients in emergency department, there appears to be little or no literature focused on whether access to an electronic patient record can improve the quality of service offered in emergency department.

The study aims to back up anecdotal reports around the efficiency afforded to clinicians, patients and service by consulting a mental health EPR at point of care in the emergency department. To do this, the researcher will explore the difference that viewing the mental health electronic patient record (EPR) at point of care makes in the emergency department of a large urban teaching hospital.

This will be achieved by analysing non personal data relating to patients referred to the liaison psychiatry team in ED, measuring variables such as length of assessment, and duration spent in ED post psychiatric referral. There will be two cohorts of patients, those for whom a mental health EPR is available for viewing by the staff at point of care in ED, and those for whom one is not available.

Liaison psychiatry staff will also be interviewed to obtain a qualitative view of their first-hand experience in caring for each of these patient cohorts and the difference both positive and negative arising from EPR access. Particular attention will be paid to assessing the impact access to the EPR makes on follow up care and

support for patients who come under the deliberate self-harm national clinical program.

The outcome of this study may be of interest to management in both services when determining the future course of the project.

7 3. Background

The Mental Health Information System (MHIS) was implemented on June 29th 2016 for liaison psychiatry staff access in the Emergency Department (ED) of an urban university tertiary referral hospital. This ED sees in excess of 55,000 patients a year and approx. 4% are mental health related cases. This emergency department is the out of hour's regional acute assessment route for a number of different catchment areas.

The MHIS is a mental health electronic patient record (EPR) system, which holds the entire primary mental health record, for a cohort of patients who present to this ED for emergency psychiatric services, from one particular catchment area.

The MHIS (Mental Health Information System) has been developed over the past 23 years, in house of a leading mental healthcare provider, to support service delivery throughout their mental health services. From its inception in 1995, MHIS has grown from a basic Patient Administration System (PAS) to a comprehensive clinical information system, supporting clinical and administrative functions, for their entire child, adolescent and adult mental health services in both the community and hospital settings.

MHIS clinical system was born out of recognition that the multidisciplinary and multi-location aspects to mental healthcare service delivery, means it is vital that the patient record follows the patient, and is available at the point of care for all clinicians in all locations, often simultaneously, which is impossible to achieve with a paper chart.

Throughout its lifetime, MHIS design has been clinically led, incorporating recommendations from the Mental Health Commission and An Bord Altranais in some specific elements such as MDT care planning. It has been entirely developed within Ireland to support the changing needs of Mental Health services, and is fully compliant with current Mental Health Commission regulations, including the administration of the Mental Health Act.

Anecdotally this project is thought to have improved the quality of service which liaison psychiatry staffs offer their patients in ED and beyond. This research project seeks to demonstrate that efficiencies have been made as a result of this implementation by measuring key milestones in the ED journey of the mental health patient from admission to discharge, such as duration of assessment. An interview with liaison staff will also be conducted to qualitatively analyse the impact as observed by them.

8 4. Literature Review

9 4.1 Mental Health in the Emergency Department

General hospitals, and in particular the Emergency Department (ED) of general hospitals are often environments of high mental health morbidity (HSE, 2012a, Sayah et al., 2014, Marynowski-Traczyk et al., 2013). Longer ED stays, and complex assessment needs are typically associated with patients presenting with mental ill health and medical comorbidity. The risks relating to the care of this population are often unique and challenging, and staff often feels ill-equipped to deal with these risks and needs (HSE, 2012a, Pearlmutter et al., 2017, Stephens et al., 2014b, Morphet et al., 2012, Marynowski-Traczyk et al., 2013, Nolan et al., 2015, Misek et al., 2015, Bost et al., 2015).

The demand for acute and emergency mental health care exceeds the current supply of available services, and it is well documented within the literature that the ED has increasingly become both the initial point of contact for mental health

crisis assessment and the main portal into the mental health system. (Marynowski-Traczyk et al., 2013, Morphet et al., 2012, Bost et al., 2015)

In addition to this, the rate of referral and attendance to psychiatric outpatient treatment is strongly associated with ED on-site psychiatric assessment (Nordentoft, 2007) and as such the importance of psychiatric staff availability in emergency department to perform psychiatric evaluations and risk assessments was a recurring theme in literature (Baraff et al., 2006, Brooker et al., 2007) (CITE).

Boarding is the admission of a patient to a bed in ED while awaiting a bed in a ward or ward transfer. Boarding of psychiatric patients is associated with poor outcomes for patient and increased risk to patient, staff and other ED patients (Simpson et al., 2014, Pearlmutter et al., 2017, Stephens et al., 2014a)

10 4.2 Suicide and deliberate self-harm presentations to ED

2007-2016 statistics from National Suicide Research Foundation (NSRF) found that half of deliberate self-harm (DSH) presentations are made out of hours between 7pm and 3am, with peak time midnight. Sunday and Bank Holiday Monday are two of the three peak days. This is of course coincides with the peak emergency care timeframe when day services and access to usual support personnel is depleted.

Universally DSH is accepted as the single biggest risk factor or pre indicator of suicide (Lin et al., 2014, Nordentoft, 2007, Carroll et al., 2014, Cooper et al., 2005) with the rate of suicide among those who have previously self-harmed being 100 times that of the general population.

NSRF (2017) also reported that 22.4% of DSH presentations in 2016 were repeat acts (NSRF, 2017) and worryingly 13% of DSH presentations (or of repeat act DSH??) left without assessment in 2016.

It is widely accepted that adherence to follow up psychiatric outpatient treatment has a positive impact on the rate of subsequent suicide attempts (HSE, 2012a, Lin

et al., 2014, Bergen et al., 2010, Bennewith et al., 2005, Kapur et al., 2004) which would play a role in unburdening the emergency health system (Sinclair et al., 2011, HSE, 2012b).

11 4.3 Importance of access to collateral information

The ED represents an important transition of care for patients, where understanding the longitudinal patient history (e.g., problems, allergies, medications, diagnoses, recent procedures, recent laboratory tests) is critical to forming an appropriate plan of care. Because many emergency department visits are unplanned and urgent, this information may not be conveyed in advance to ED physicians. Increasingly it is accepted that the collateral information available concerning an individual's behaviour in the community, may contribute to improving critical decisions of emergency clinicians. Collateral sources of information include family members, other medical providers, police officers, friends or prior records. Developing collateral information requires time and resources. Research indicates that psychiatric clinicians are receptive to data, but less so to opinions. Data may include evidence of the failure, or success of alternatives to hospitalization, or certain medications. Collateral information is believed to heavily influence critical decision making process around restraint, medications, admissions etc. and helps guard against the influence of bias or coercion. Lincoln, A.L., Allen, M. (2002). The absence of information can lead to less-effective treatments being prescribed, rather than more tailored interventions, as a precaution when trusted data are not available.

These findings in the literature support the informally expressed opinions of the liaison staff in the study site.

12 5. Research methods and measurements

13 5.1 Measurable Outcomes

The measurable outcomes for this study are as follows;

- Length of psychiatric assessment for those with and without an MHIS EPR
- Length of time from referral to liaison psychiatry to discharge from ED for both cohorts
- The length of time it takes for staff to complete follow up process on DSH patients in the month prior to and month post implementation of the MHIS EPR in ED
- The length of time to complete follow up process on DSH patients for those with an MHIS EPR and those without in the year post implementation.
- The volume of follow up tasks (phone calls etc.) associated with completing the follow up process for those with an MHIS EPR and those without in the year post implementation
- Analysis as to whether admission rates are impacted for patients with the same ICD10 diagnosis, when there is an MHIS EPR available.
- Reported difference in approach to care and service delivery of the liaison psychiatry team when MHIS is available in the emergency psychiatry setting will be explored in the qualitative aspect of the research

14 5.2 Study Design

The study will be cross sectional in design. It will be based on data relating to referrals to the liaison psychiatry services within the ED setting. Patients referred to this service may or may not have a mental health EPR consulted by the liaison psychiatry staff. This study is based around examining data sets for both cohorts to see if any measurable impact on various milestones, such as assessment duration, length of stay post referral, and length of time to complete follows up process for DSH patients will be observed.

Data relating to patients under the age of 18 will not be made available as there would be no possibility of an EPR being consulted for this population. Only the adult MHIS system was implemented in the ED of the study site.

15 5.3 Methodology

This will be a mixed methods study. The co researcher on the project is the Consultant Psychiatrist on the Liaison Psychiatry team in the ED of the study site.

16 **5.3.1 Quantitative**

Two sources of data will be made available to the primary investigator

Data Source One; Is an extract of data related to ED referrals to the liaison psychiatry team over approx. 21 month period since implementation of the MHIS system in the ED on June 29th 2016. Before any data is given to the primary investigator, the co-researcher will conduct a data minimisation exercise in the study site. All identifiable information and data surplus to the needs of this study will be removed. Each case will be assigned a unique Research Case ID, with repeat cases retaining the initial Research Case ID assigned to their case. The Co researcher will retain the key linking the case Ids and the local unique identifier for the patient in the study site. The primary investigator will never obtain that information. The data fields which will be made available to the principal investigator are listed below. These will also be coded as per discussion with the co researcher to further aid confidentiality.

1. Research Case ID
2. Whether or not MHIS was consulted code
3. Time of referral to Liaison Psychiatric Team- time of day only, no date.
4. Duration of psychiatric assessment in minutes
5. Diagnosis code
6. Psychiatric admission decision yes/no - code
7. Outcome code
8. Time of Discharge

Data Source Two; in compliance with the national clinical program on Self Harm, Ed psychiatric services cannot close the case of those who present with self-harm,

until follow up efforts can confirm that an OPD appointment has been made for, and attended by the patient. All efforts to establish this information must be recorded by the liaison team, such as phone calls to patient and to outpatient services.

Again there will be two sets of patient populations under analysis, those for whom an EPR will have been consulted and those for whom it has not. The co researcher will have access to this data and will again perform a data minimisation exercise to provide the primary investigator with the following data for the month pre implementation and the year post implementation.

As there is one month's data available relating to services immediately prior to the implementation of MHIS, the researcher will be particularly interested in any changes to the follow up timeline for those in the catchment area where the EPR is available, in the month post implementation.

The data which will be made available to the primary investigator are;

1. Research Case ID
2. Catchment area
3. Whether or not MHIS was consulted
4. Date of discharge from ED
5. List of tasks to follow up
6. Corresponding dates and times for follow up tasks
7. Corresponding outcome of each follow up attempt
8. Date of discharge from liaison services

17 **5.3.2 Qualitative**

The liaison psychiatry team will be emailed by the co researcher to see if they would like to participate in the qualitative aspect of the study. This email (Appendix No. 1) will have the information sheet (Appendix No. 2) and the Consent Form (Appendix No. 3) attached explaining to the prospective participants the

study design and process. This email will also reiterate that there is no obligation to participate and there will be no repercussions on career if they choose not to engage. The email will also inform prospective participants that their time given to the interview process of approx. 30 mins, will be considered part of their working day, and there will be no requirement to work back the time. Please see Appendix No 4 for the semi structured questionnaire.

18 5.4 Sample Size and Statistical Approach

Approx. 1516 patients were referred to the liaison psychiatry services in Ed of the study site in 2017, and as 135 were referred in January 2018 it is estimated the researcher will have the data pertaining to approx. 2400 records made available for analysis from Data Source one. As data source two is a sub set of this volume, it is expected the volume of data for quantitative analyses will be large enough to be deemed statistically relevant. The sample size has been determined by the volume of data available from data source 1 and 2. The decision to interview staff rather than survey staff was made as the number of staff available to survey was not statistically viable as it is ≤ 8

Descriptive and inferential statistics will be used to analyse the quantitative data. The qualitative data will be thematically analysed using Braun and Clarke 2006.

19 5.5 Recruitment of Participants

This study is based around the experience of liaison psychiatry staff that has the opportunity to consult the MHIS for some of their patients. Therefore canvassing of participants for the interview aspect of this study must be focused on this specific team.

The co researcher is the consultant over the Liaison Psychiatry team in SVUH. As the co researcher has access to the email addresses of their staff and has the authority to release staff to participate in the study if they so wish, the co-researcher will send an email invitation to prospective participants. This email has

been drafted by the primary investigator and given to the co researcher to circulate (Appendix No. 1)

The invitation to participate email will have the information sheet (Appendix No. 2) and the Consent Form (Appendix No. 3) attached explaining to the prospective participants the study design and process. This email will also reiterate that there is no obligation to participate and there will be no repercussions on their career if they choose not to engage. The email will also inform prospective participants that their time given to the interview process of approx. 30 mins, will be considered part of their working day, and there will be no requirement to work back the time. Informed consent will be obtained in writing from the participant. Please see attached consent form (Appendix No3)

Prospective participants will be asked to indicate their willingness to engage in the interview process, by sending a completed consent form directly to the primary investigator, either by email or post within 1 week. Therefore they have one week to consider participation in the interview process. The co researcher will never know the identity of those who decide to, or not to, participate.

Participants will be reminded that they have formally consented to the use of their data in this study at the end of the interview session, and informed of their right to withdraw at any point up until one week after the last interview is scheduled, the date of which will be given to them at that point.

As respondents consent forms are received by the primary investigator, they will be assigned a unique ID number and this will be the ID under which all their related data will be stored and referenced against.

A master list correlating participants and their Id codes will be saved to a secure drive and password protected, it will only be available to the primary investigator and their academic supervisor.

20 **5.5.1 Inclusion & Exclusion Criteria**

This study is based around the experience of liaison psychiatry staff that have had the opportunity to consult the MHIS for some of their patients, therefore inclusion criteria must be that the staff are Liaison Psychiatry staff of Ed in the study site.

Exclusion criteria relates to staff that have not accessed MHIS in the Ed of the study site at the time of participant recruitment (New staff).

21 **5.6 Data Collection & Treatment of Data**

The primary investigator Louise Prendergast will have sole access to the raw qualitative data. The academic supervisor and co researcher will have access to the coded qualitative data.

Only the co researcher will have access to the raw quantitative data. The primary investigator and their academic supervisor will have access to the deidentified quantitative data.

22 **5.6.1 Treatment of Qualitative Data**

The interviews will be taped and the interviewer may take some brief notes.

Immediately after each interview the recording will be saved to a secure drive against the relevant unique ID assigned to the participant and the file will be password protected.

The interview will then be deleted from the mobile recording device for security, Each interview will be transcribed verbatim with the exception of names and other identifiable information. Upon completion notes will be destroyed. Participants will be given a full transcript of the interview upon receipt of an email request, and the researcher will give them the opportunity to edit or re phrase any content. The interview participants will be given a unique password at the end of the interview which they will use to access any password protected transcriptions sent to them.

To ensure utmost confidentiality, transcripts will be sent by reply email only to the email address used by the requesting participant. These emails will be encrypted and password protected. The researcher will give participants the opportunity to edit or re phrase any content, for one week after the last interview is scheduled. This date will be given to the participant at the end of their interview session.

23 5.6.2 Treatment of Quantitative Data

A data minimisation and de identifying exercise will be undertaken by the co researcher in the study site, on data sets 1&2. All identifiable information and data surplus to the needs of this study will be removed from the primary data sources before it is given to the primary investigator. Each case will be assigned a unique research case ID, with repeat cases retaining the initial research case ID assigned to their case. The co researcher will retain the key linking the case Ids and the local unique identifier for the patient in the survey site. The primary investigator will never obtain that information.

The quantitative data which has been de identified, will leave site of origin in an email on the TLS to the primary investigator, as a password protected file.

24 5.6.3 Data retention/destruction

Qualitative data will be retained until the dissertation has been examined as per college regulations. It will then be retained / destroyed in line with data protection legislation which is 10 years at present.

As the quantitative data is de identified it will be retained for 10 years for verification and validation purposes

25 6. Debriefing Arrangements

Participation in this study is not expected to raise any disclosures of a sensitive nature and no vulnerable persons will be participating. As such debriefing is not expected to be a requirement of this process. Participants will however be

afforded the opportunity to review transcripts and request changes as previously explained.

Each participant will receive a copy of the final graded and authorized dissertation.

26 7. Ethical Considerations

Having reviewed the research proposal for this study, the Chairperson of the research ethics committee in the study site has provided “Chairpersons Approval” for the quantitative aspects of the study in relation to data source 1&2. Ethics approval was not required for staff surveys in the study site - Please see Appendix No. 5 for the letter detailing chairperson’s approval from the study site.

Under the research governance framework of the principal researcher’s employers, all research must receive ethical approval from their in house ethics committee. The primary researcher completed a detailed ethics application, and attended for interview with the committee prior to receiving ethical approval to proceed with this research project. A copy of the approval letter can be found in appendix 6.

The study design will not include any interaction with patients. As previously outlined the researchers will go to great lengths to ensure no patient names or personal data items are exchanged, such as coding the de identified data in an effort to minimise the risk of identifying any patient in the quantitative aspect of the study.

Primary qualitative data from interview transcripts was only available to the principal investigator and coded data to the co researcher and study supervisor. As participation in the semi structured interviews will be on a voluntary basis, and prospective participants are reassured that there will be no repercussions for not

participating, no employee of the study site should feel compelled to engage in the interview process. Furthermore as all data will be de identified and treated in line with the data protection act 1998 and 2002 and the forthcoming GDPR 2018, the researcher foresees no risk to participants.

School of Computer Science & Statistics
Research Ethics Application

Part A

Project Title: "Bridging the quality chasm in emergency mental healthcare, with access to the mental health EPR in the emergency department"

Name of Lead Researcher (student in case of project work): Louise Prendergast

Name of Supervisor: Prof Lucy Hederman

TCD E-mail: prendelo@tcd.ie Contact Tel No.: 087 9723714

Course Name and Code (if applicable): MSc Health Informatics

Estimated start date of survey/research: April 18th 2018

I confirm that I will (where relevant):

- Familiarize myself with the Data Protection Act and the College Good Research Practice guidelines http://www.tcd.ie/info_compliance/dp/legislation.php;
- Tell participants that any recordings, e.g. audio/video/photographs, will not be identifiable unless prior written permission has been given. I will obtain permission for specific reuse (in papers, talks, etc.)
- Provide participants with an information sheet (or web-page for web-based experiments) that describes the main procedures (a copy of the information sheet must be included with this application)
- Obtain informed consent for participation (a copy of the informed consent form must be included with this application)
- Should the research be observational, ask participants for their consent to be observed
- Tell participants that their participation is voluntary
- Tell participants that they may withdraw at any time and for any reason without penalty
- Give participants the option of omitting questions they do not wish to answer if a questionnaire is used
- Tell participants that their data will be treated with full confidentiality and that, if published, it will not be identified as theirs
- On request, debrief participants at the end of their participation (i.e. give them a brief explanation of the study)
- Verify that participants are 18 years or older and competent to supply consent.
- If the study involves participants viewing video displays then I will verify that they understand that if they or anyone in their family has a history of epilepsy then the participant is proceeding at their own risk
- Declare any potential conflict of interest to participants.
- Inform participants that in the extremely unlikely event that illicit activity is reported to me during the study I will be obliged to report it to appropriate authorities.
- Act in accordance with the information provided (i.e. if I tell participants I will not do something, then I will not do it).

Signed: 
Lead Researcher/student in case of project work

Date: 22/3/2018

Appendix 6

TCD Ethics Approval

The screenshot displays the TCD Research Ethics WebApp interface. At the top left is the Trinity College Dublin logo and name. At the top right are navigation links for 'Faculties and Schools', 'Courses', 'Research', and 'A-Z', along with a search bar labeled 'Search All Trinity'. Below this is a blue header bar with 'TCD Research Ethics WebApp' on the left and 'My account' and 'Log out' on the right. A 'Home' link is visible below the header. On the left side, there is a 'Navigation' menu with links for 'My Applications', 'Create REC Application', 'Calendar', and 'Help'. The main content area features a title 'Bridging the quality chasm in emergency mental healthcare, with access to the mental health EPR in the emergency department'. Below the title are buttons for 'Status', 'View', and 'Assign Supervisor'. The submission information states 'Submitted by [prendeio](#) on Sun, 03/25/2018 - 15:18'. There are two expandable sections: 'Project overview' and 'Admin fields'. The 'Project overview' section shows: 'Name of Applicant: Louise Prendergast', 'Academic Supervisor / Lead Researcher: Lucy Hederman', and 'Research Project Type: Element of Taught Postgraduate Course'. The 'Admin fields' section shows: 'Academic Supervisor / Lead Researcher (username): hederman', 'Application Number: 20180308', and 'Final Comments: The Research Ethics Committee acknowledge the external ethical approval granted for this proposal, as stated in the ethics approval letter. The external approval does not extend to the semi structured interview. The Committee have reviewed the part of this application relevant to the semi structured interviews and there are no issues arising. This application has been approved.' The 'Status' is listed as 'Approved'.

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

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Search All Trinity

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Navigation

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- [Create REC Application](#)
- [Calendar](#)
- [Help](#)

Home

Bridging the quality chasm in emergency mental healthcare, with access to the mental health EPR in the emergency department

Status View Assign Supervisor

Submitted by [prendeio](#) on Sun, 03/25/2018 - 15:18

• [Project overview](#)

Name of Applicant:
Louise Prendergast

Academic Supervisor / Lead Researcher:
Lucy Hederman

Research Project Type:
Element of Taught Postgraduate Course

• [Admin fields](#)

Academic Supervisor / Lead Researcher (username):
hederman

Application Number:
20180308

Final Comments:

The Research Ethics Committee acknowledge the external ethical approval granted for this proposal, as stated in the ethics approval letter.

The external approval does not extend to the semi structured interview. The Committee have reviewed the part of this application relevant to the semi structured interviews and there are no issues arising.

This application has been approved.

Status:
Approved

Appendix 7

Employers Ethics Application

Research Registration ID Number 710

Please tick if PI is an External Researcher (non-salaried) _____ / Internal Researcher
X (see Research Governance documentation for verification)

Name: Louise Prendergast (Must be completed and used in all future
correspondence. See Guidelines Section 1.4.)

Date: 3rd April 2018

xxxxxx

Application to

Research

Ethics

Committee

Please read the Notes for Guidance before completing this form

*Please forward the original and 11 unbound copies and 1 electronic copy of this
application for submission to the Secretary of the Research Ethics Committee.*

*Only fully completed applications will be accepted (hard copy with relevant
signatures and appendices included).*

If the PI or any member of the research team is an external researcher please
ensure that the EXTERNAL RESEARCHER QUALITY ASSURANCE FORM is



completed by the service sponsor and returned to the Research Department for

sign off prior to submission of application

Please indicate if the research is a: RESEARCH PROJECT Research
AUDIT

PLEASE NOTE:

- Research audits will also require ethical approval if you wish to publicly disseminate any findings outside of the service in which the data was collected. See Guidelines Section 1.3.
- Research Audits also require a Research Registration Database ID Number.

Other Signatures:

XXXXXXXXXX -REDACTED

6. Provide project description/abstract (Please note that this information maybe used on the intranet and in annual reports) which states in less than 250 words and as far as possible in lay language: (1) the background & objectives of the study, (2) methodology including details of the study design, measures, participants and procedures and (3) relevance of study both academically and to the Order's services

Background: The XXXXMental Health Information System (MHIS) was implemented for liaison psychiatry staff access in XX ED on June 29th 2016. The MHIS is an electronic patient record (EPR) system, which holds the entire principal mental

health record, for a cohort of patients who present to XX ED for emergency psychiatric services, from a particular catchment area.

Objectives: The quantitative aspect of this study aims to explore if anecdotal reports around the efficiencies afforded to clinicians, patients and service by consulting the mental health EPR at point of care in the emergency department, can be corroborated with data.

This study also aims to gain a perspective from the liaison psychiatry staff in XX ED, about the impact of having the patient's electronic mental health record available at point of care in the ED, and to support the follow up care for patients under the deliberate self-harm national clinical program. This will be analysed using quantitative data and thematically analysed qualitative data.

Design & Measures

Quantitative

Data Source 1: The co researcher in the study site will perform a data minimisation exercise on extract of data regarding to ED referrals to the liaison psychiatry team. All identifiable information and data surplus to the needs of this study will be removed before it is given to the principal investigator

Data Source 2: The co researcher in the study site will perform a data minimisation exercise on an extract of data relating to follow up tasks performed by the liaison psychiatric team under the self-harm clinical program. All identifiable information and data surplus to the needs of this study will be removed before it is given to the principal investigator

Qualitative

A series of 30 minute semi structured voluntary interviews will be conducted with self-selecting participants from the XXXX Liaison psychiatry team. The interview

will be comprised of 5 questions each with two sub questions. Participants will be informed of their right to withdraw without penalty.

Relevance of Study: This information may be of interest to management in both services when determining the future course of the project. This study is being undertaken in part fulfilment of the Principal Investigators MSc in Health Informatics with Trinity College Dublin

STANDARD APPLICATION FORM

For the Ethical Review of

Health-Related Research Studies, which are not Clinical Trials of Medicinal Products For
Human Use

as defined in S.I. 190/2004

DO NOT COMPLETE THIS APPLICATION FORM

IF YOUR STUDY IS A CLINICAL TRIAL OF A MEDICINAL PRODUCT

Title of Study: “Bridging the quality chasm in emergency mental healthcare, with access to
the mental health EPR in the emergency department”

Application Version No: 1

Application Date: 03.04.2018

For Official Use Only - Date Stamp of Receipt by REC:

TABLE OF CONTENTS MANDATORY /OPTIONAL

SECTION A GENERAL INFORMATION MANDATORY*

SECTION B STUDY DESCRIPTORS MANDATORY*

SECTION C STUDY PARTICIPANTS MANDATORY*

SECTION D RESEARCH PROCEDURES MANDATORY*

SECTION E DATA PROTECTION MANDATORY*

SECTION F HUMAN BIOLOGICAL MATERIAL (OPTIONAL)

SECTION G RADIATION (OPTIONAL)

SECTION H MEDICAL DEVICES (OPTIONAL)

SECTION I MEDICINAL PRODUCTS / COSMETICS / FOOD AND FOODSTUFFS (OPTIONAL)

SECTION J INDEMNITY AND INSURANCE MANDATORY*

SECTION K COST AND RESOURCE IMPLICATIONS, FUNDING AND PAYMENTS
MANDATORY*

SECTION L ADDITIONAL ETHICAL ISSUES (OPTIONAL)

This Application Form is divided into Sections.

*Sections A, B, C, D, E, J and K are **Mandatory**.

(Sections F, G, H, I and L are optional. Please delete Sections F, G, H, I and L if these sections do not apply to the application being submitted for review.)

IMPORTANT NOTE: Please refer to **Section I** within the form before any attempt to complete the Standard Application Form. **Section I** is designed to assist applicants in ascertaining if their research study is in fact a clinical trial of a medicinal product.

IMPORTANT NOTE: This application form permits the applicant to delete individual questions within each section depending on their response to the preceding questions. Please respond to each question carefully and refer to the accompanying *Guidance Manual* for more in-depth advice prior to deleting any question.

**PLEASE ENSURE TO REFER TO THE ACCOMPANYING GUIDANCE MANUAL
WHEN COMPLETING THIS APPLICATION FORM.**

SECTION A GENERAL INFORMATION

SECTION A IS MANDATORY

A1 Title of the Research Study:

“Bridging the quality chasm in emergency mental healthcare, with access to the mental health EPR in the emergency department”

A2 (a) Is this a multi-site study? No

If you chose ‘yes’ please delete questions A2 (e) and (f), If you chose ‘no’ please delete Questions A2 (b) (c) and (d)

A2 (e) If no, please name the principal investigator with overall responsibility for the conduct of this single-site study.

Title: Ms. **Name:** Louise Prendergast

Qualifications: BSc (Hons)

Position: MHIS Project Manager

Dept: ICT

Organisation: XXXXHospitaller Ministries

Address: Stillorgan

Tel: 087 9723714 **E-mail:** Answer louise.prendergast@XXXX.ie

A2 (f) For single-site studies, please name the only site where this study will take place.

xxxxxxx

A3. Details of Co-investigators:

Name of site (if applicable): xxxxxxxx Dublin

Title: Dr. **Name:** Susan Moore

Qualifications: MB BCh NUI

Position: Liaison Psychiatry Consultant

Dept : Psychiatry

Organisation: xxxxxx Dublin

Address: xxxxxxxx

Tel: 01 221 4000 **E-mail:** susanmoore@svhg.ie

Role in Research e.g. statistical / data / laboratory analysis: Quantitative Data collection and de-identification

A4. Lead contact person who is to receive correspondence in relation to this application or be contacted with queries about this application.

Name: Louise Prendergast

Position: MHIS Project Manager

Organisation: xxxxxxxxx

Address for Correspondence: XXXXHospitaller xxxxx

Tel (work)/ (mob.):0879723714 **E-mail:** louise.prendergast@XXXX.ie

A5 (a) Is this study being undertaken as part of an academic qualification? Yes

A5 (b) If yes, please complete the following:

Student Name(s): Louise Prendergast

Academic Course: MSc in Health Informatics

Academic Institution: Trinity College Dublin

A5 (c) Academic Supervisor(s):

Title: Prof. **Name:** Lucy Hederman

Qualifications: BA, BAI, MSc (Rice), PhD.

Position: Lecturer

Dept: School of Computer Science and Statistics

Organisation: Trinity College Dublin

Address: College Green, Dublin 2

Tel: +353-1-8962245 **E-mail:** hederman@scss.tcd.ie

SECTION B STUDY DESCRIPTORS

SECTION B IS MANDATORY

B1. What is the anticipated start date of this study?

April 24th 2018

B2. What is the anticipated duration of this study?

6 months

B3. Please provide a brief lay (plain English) description of the study. Please ensure the language used in your answer is at a level suitable for use in a research participant information leaflet.

This project will explore the difference viewing the mental health electronic patient record (EPR) at point of care, makes to the quality of care liaison psychiatry staff can offer, to psychiatric patients presenting in the emergency department of a large urban teaching hospital. This study will analyse non personal data relating to patients referred to the liaison psychiatry service, some of whom will have an EPR available for viewing by the staff and some who will not. The Principal Investigator would like to determine if there will be a variation with regard to length of stay (LOS) and assessment times etc. between the two groups. Liaison psychiatry staff will also be interviewed to obtain a qualitative view of their

first-hand experience in caring for each of these patient cohorts and the difference both positive and negative arising from EPR access.

This study is being undertaken in part fulfilment of the Principal Investigator's MSc in Health Informatics with Trinity College Dublin.

B4. Provide brief information on the study background.

The MHIS (Mental Health Information System) has been developed in house by XXXX(XXXX) ICT department to support service delivery throughout their mental health services. From its inception in 1995, MHIS has grown from a basic Patient Administration System (PAS) to a comprehensive clinical information system, supporting clinical and administrative functions, for their entire child, adolescent and adult mental health services in both the community and hospital settings.

In June 2016 XXXX extended secure access to their Adult MHIS, to HSE colleagues on the Liaison Psychiatry team, in the emergency department (ED) of Ireland's largest academic teaching general hospital, St Vincent's University Hospital (XXXX).

The liaison psychiatry ED team at XXXX provides out of hours emergency mental health support to public (HSE) patients at XXXX who are attending XXXX for outpatient psychiatric care. Until June 2016, when an XXXX patient presented to ED, liaison staff had no details of the patient's history available. Both services felt the risk to both patients and staff would be greatly reduced and patient experience enhanced, if access to the MHIS was made

available to the liaison psychiatry staff at point of care in XXXX. It was decided that only adult patient records would be made available.

As a result of this project, MHIS supports 24/7 crisis intervention, to XXXXs HSE funded patients in the CHO area 6 catchment area.

This level of widespread secure access to the MHIS EPR supports a key principal of “A Vision for Change” (AVFC 2002), of a seamless, co-ordinated mental health service, available across a continuum of functions.

Anecdotally this project is thought to have improved the quality of service which liaison psychiatry staffs offer their patients in ED and beyond. This research project seeks to demonstrate that efficiencies have been made, and quality of care enhanced as a result of this implementation.

The following themes have emerged from a literature review on the topic;

- The considerable pressure mental health issues present for ED depts. universally
- The importance of psychiatric staff availability to assess patients in ED
- The value of collateral information to the clinical decision making process in psychiatric emergencies

General hospitals, and in particular the Emergency Department (ED) of general hospitals are often environments of high mental health morbidity. Longer ED stays, and complex assessment needs are typically associated with patients presenting with mental ill health and medical comorbidity

Universally deliberate self-harm (DSH) is accepted as the single biggest risk factor or pre indicator of suicide (Lin et al., 2014) with the rate of suicide among those who have previously self-harmed being 100 times that of the general population.

The National Suicide Research Foundation (NSRF) reported that 22.4% of DSH presentations to ED in 2016 were repeat acts, and worryingly 13% of DSH presentations (incl. repeat presentations) left without assessment in 2016.

Follow up psychiatric outpatient treatment has been proven to have a positive impact on the rate of subsequent suicide attempts, and in line with this, literature suggests that the rate of referral and attendance to psychiatric outpatient treatment is strongly associated with ED on-site psychiatric assessment (Nordentoft, 2007). As such, the importance of psychiatric staff availability in ED to perform psychiatric evaluations and risk assessments was a recurring theme.

The ED represents an important transition of care for patients, where understanding the longitudinal patient history (e.g., problems, allergies, medications, diagnoses, recent procedures, recent laboratory tests) is critical to forming an appropriate plan of care. Because many emergency department visits are unplanned and urgent, this information may not be conveyed in advance to ED physicians. Increasingly it is accepted that the collateral information available concerning an individual's behaviour in the community, may contribute to improving critical decisions of emergency clinicians. Collateral sources of information include family members, other medical providers, police officers, friends or prior records. Developing collateral information requires time and resources. Research indicates that psychiatric clinicians are receptive to data, but less so to opinions (Lincoln, A.L., Allen, M. (2002)). Data may include evidence of the failure, or success of alternatives to hospitalization, or certain medications. Collateral information is believed to heavily influence critical decision making process around restraint, medications, admissions etc. and helps guard against the influence of bias or coercion. (Lincoln, A.L., Allen, M. (2002)). The absence of information can lead to less-effective treatments being prescribed, rather than more tailored interventions, as a precaution when trusted data are not available.

These findings in the literature support the informally expressed opinions of the liaison staff in the study site.

B5. List the study aims and objectives.

The aim of the study is to attempt to answer the research question “Does consulting the mental health EPR afford Liaison Psychiatry staff an opportunity to offer more personalised, patient centred, quality of care, to those presenting to ED?”

The study aims to back up anecdotal reports around the efficiencies afforded to clinicians, patients and service by consulting a mental health EPR at point of care in the emergency department, by measuring variables such as length of assessment, and duration spent in Ed post psychiatric referral. Data relating to the follow up process under the national clinical program for DSH will also be analysed.

This Aim will be supported by the specific objectives of:

- Length of psychiatric assessment for those with and without an MHIS EPR
- Length of time from referral to liaison psychiatry to discharge from ED for both cohorts
- The length of time it takes for staff to complete follow up process on DSH patients in the month prior to and month post implementation of the MHIS EPR
- The length of time to complete follow up process on DSH patients for those with an MHIS EPR and those without in the year post implementation.
- The volume of follow up tasks (phone calls etc.) associated with completing the follow up process for those with an MHIS EPR and those without in the year post implementation

- Analysis as to whether admission rates are impacted for patients with the same ICD10 diagnosis, when there is an MHIS EPR available.

The qualitative aspect to this study aims to explore the disparities experienced by liaison staff when determining a course of action when caring for patients for whom they have a mental health EPR available for consultation and determining a course of action when caring for patients for whom no mental health EPR is available for consultation. The objective supporting this aim will be to;

- Report the difference in approach to care and service delivery of the liaison psychiatry team when MHIS is available in the emergency psychiatry setting and when not.

B6. List the study endpoints / measurable outcomes (if applicable).

- Study endpoint will be when the de identified quantitative and qualitative data is analysed, written up into a thesis and submitted in part consideration of a master's degree in health informatics.

B7. Provide information on the study design.

The study will be cross sectional in design. The study will be based on data relating to referrals to the liaison psychiatry services within the ED setting. Patients referred to this service may or may not have a mental health EPR consulted by the liaison psychiatry staff. This study is based around examining data sets for both cohorts to see if any measurable

impact on various milestones, such as assessment duration, length of stay post referral, and length of time to complete follows up process for DSH patients will be observed.

Data relating to patients under the age of 18 will not be made available as there would be no possibility of an EPR being consulted for this population. Only the adult MHIS system was implemented in XXXX ED.

B8. Provide information on the study methodology.

This will be a mixed methods study.

Quantitative

Two sources of data will be made available to the Principal Investigator - See Appendix 5 for sample data format.

Data Source One; Is an extract of data related to ED referrals to the liaison psychiatry team over approx. 21 month period since implementation of the MHIS system in XXXX Ed on June 29th 2016. A data minimisation exercise will be undertaken by the co researcher in the study site. All identifiable information and data surplus to the needs of this study will be removed before it is given to the principal investigator. Each case will be assigned a unique research case ID, with repeat cases retaining the initial research case ID assigned to their case. The Co researcher will retain the key linking the case Ids and the local unique identifier for the patient in the survey site. The principal investigator will never obtain that information.

The data fields which will be made available to the principal investigator are listed below. These will also be coded as per discussion with the co researcher to further aid confidentiality.

9. Research Case ID
10. Whether or not MHIS was consulted code
11. Time of referral to Liaison Psychiatric Team- time of day only, no date.
12. Duration of psychiatric assessment in minutes
13. Diagnosis code
14. Psychiatric admission decision yes/no - code
15. Outcome code
16. Time of Discharge

Data Source Two; in compliance with the national clinical program on Self Harm, Ed psychiatric services cannot close the case of those who present with self-harm, until follow up efforts can confirm that an OPD appointment has been made for, and attended by the patient. All efforts to establish this information must be recorded by the liaison team, such as phone calls to patient and to outpatient services.

Again there will be two sets of patients, those for whom an EPR will have been consulted and those for whom it has not. The co researcher will have access to this data and will again perform a data minimisation exercise to provide the principal investigator with the following de-identified data for the month pre implementation and the year post implementation.

As there is one month's data available relating to services immediately prior to the implementation of MHIS, the researcher will be particularly interested in any changes to

the follow up timeline for those in the catchment area where the EPR is available, in the month post implementation.

The data fields which will be made available to the principal investigator are listed below. These will also be coded as per discussion with the co researcher to further aid confidentiality.

9. Research Case ID code
10. MHIS Affiliated Area Y/N
11. Whether or not MHIS was consulted
12. Date of discharge from ED code
13. List of tasks to follow up code
14. Corresponding dates and times, code
15. Corresponding outcome of each follow up attempt code
16. Date of discharge from liaison services code

Qualitative

The liaison psychiatry team will be emailed by the co researcher to see if they would like to participate in the qualitative aspect of the study. This email (*Appendix No. 1*) will have the information sheet (*Appendix No. 2*) and the Consent Form (*Appendix No. 3*) attached explaining to the prospective participants the study design and process. This email will also reiterate that there is no obligation to participate and there will be no repercussions on career if they choose not to engage. The email will also inform prospective participants that their time given to the interview process of approx. 30 mins, will be considered part of their working day, and there will be no requirement to work back the time.

B9. Provide information on the statistical approach to be used in the analysis of your results (if appropriate) / source of any statistical advice.

Descriptive and inferential statistics will be used to analyse the quantitative data. The qualitative data will be explored using Thematic Analysis (Braun & Clarke, 2006)

B10 (a) Please justify the proposed sample size and provide details of its calculation (including minimum clinically important difference).

1516 patients were referred to the liaison psychiatry services in XXXX Ed in 2017, and as 135 were referred in January 2018 it is estimated the Principal Investigator will have the de identified data pertaining to approx. 2400 records made available for analysis from Data Source one. Data source two is a sub set of this volume and as such it is expected the volume of data for quantitative analyses will be large enough to help to answer the research question.

B10 (b) Where sample size calculation is impossible (e.g. it is a pilot study and previous studies cannot be used to provide the required estimates) then please explain why the sample size to be used has been chosen.

The sample size has been determined by the volume of data available as detailed in the Quantitative source 1&2 information.

B11. How many research participants are to be recruited in total?

Participants in the Qualitative part of the study ≤ 8 interview participants from the liaison psychiatry team in XXXX ED

B12 (a) How many research participants are to be recruited in each study group (where applicable)? Please complete the following table (where applicable). N/A

SECTION C study PARTICIPANTS

SECTION C IS MANDATORY

C1 PARTICIPANTS - SELECTION AND RECRUITMENT

C1.1 How will the participants in the study be selected?

The study is based around the experience of liaison psychiatry staff that has the opportunity to consult the MHIS for some of their patients. Therefore canvassing of participants for the interview aspect of this study must be focused on this specific team.

C1.2 How will the participants in the study be recruited?

The co researcher is the consultant over the Liaison Psychiatry team in XXXX. As the co researcher has access to the email addresses of their staff and has the authority to release

staff to participate in the study if they so wish, the co-researcher will send an email invitation to perspective participants. This email has been drafted by the principal investigator and given to the co researcher to circulate (*Appendix No. 1*)

The invitation to participate email will have the information sheet (*Appendix No. 2*) and the Consent Form (*Appendix No. 3*) attached explaining to the prospective participants the study design and process. This email will also reiterate that there is no obligation to participate and there will be no repercussions on their career if they choose not to engage. The email will also inform prospective participants that their time given to the interview process of approx. 30 mins, will be considered part of their working day, and there will be no requirement to work back the time.

Prospective participants will be asked to indicate their willingness to engage in the interview process, by sending a completed consent form directly to the principal investigator, either by email or post. The identity of those who decide to, or not to, participate, will not be revealed to the co researcher.

As respondents consent forms are received by the principal investigator, they will be assigned a unique ID number. A master list correlating participants and their Id codes will be saved to a secure drive and password protected in a separate folder to the study data. It will only be available to the principal investigator.

C1.3 What are the inclusion criteria for research participants? (Please justify, where necessary)

For the Qualitative element of the study participant must be Liaison Psychiatry staff of XXXX Ed.

C1.4 What are the exclusion criteria for research participants? (Please justify, where necessary)

The staff that have not accessed MHIS in XXXX Ed at the time of participant recruitment e.g. new staff will be excluded from the study.

Data relating to patients under the age of 18, will also be excluded.

C1.5 Will any participants recruited to this research study be simultaneously involved in any other research project? Not to my knowledge

C2 PARTICIPANTS - INFORMED CONSENT

C2.1 (a) Will informed consent be obtained? Yes

C2.1 (c) If yes, please outline the consent process in full. (How will consent be obtained, when, by whom and from whom etc.)

Informed consent will be obtained in writing from the participant. Please see attached consent form *Appendix No3*

In relation to the quantitative data, informed consent is not required as this data is de identified. This is stated in part 3, section 12, pg. 91 of the HSE National Consent Policy QPSD-D-026-1.2. V.1.2.

C2.2 (a) Will participants be informed of their right to refuse to participate and their right to withdraw from this research study? Yes

C2.3 (a) Will there be a time interval between giving information and seeking consent?
yes

C2.3 (b) If yes, please elaborate.

Participants will receive the information sheet and consent form via email from the Co researcher (*Appendices No2&3*) Those willing to participate in the interview process will be asked to respond directly to the principal investigator with a completed consent form within 1 week.

C3 adult participants (AGED 18 or over) - CAPACITY

C3.1 (a) Will all adult research participants have the capacity to give informed consent?
Yes

c4 participants under the age of 18

C4.1 (a) Will any research participants be under the age of 18 i.e. Children? No

C5 PARTICIPANTS - CHECKLIST

C5.1 Please confirm if persons from any of the following groups will participate in this study. This is a quick checklist to assist research ethics committee members and to identify whether study participants include persons from vulnerable groups and to establish what special arrangements, if any, have been made to deal with issues of consent. It is recognised that not all groups in this listing will automatically be vulnerable or lacking in capacity. Please refer to the HSE's National Consent Policy, particularly Part 3, Section 5.

Committees are particularly interested to know if persons in any of these groups are being targeted for inclusion, as per the inclusion criteria.

(a) Healthy Volunteers NO

(b) Patients Yes

- Unconscious patients No
- Current psychiatric in-patients No
- Patients in an emergency medical setting Yes

(c) Relatives / Carers of patients No

(d) Persons in dependent or unequal relationships No

- Students No
- Employees / staff members Yes
- Persons in residential care No
- Persons highly dependent on medical care No

(e) Intellectually impaired persons No

(f) Persons with a life-limiting condition No

(Please refer to guidance manual for definition)

(g) Persons with an acquired brain injury No

C5.2 If yes to any of the above, please comment on the vulnerability of the research participants, and outline the special arrangements in recognition of this vulnerability (if any).

Quantitative data; will be coded at source and therefore not identifiable.

Qualitative data; the invitation to participate in the interview process will be sent by the co researcher who is the liaison team consultant and in a position of seniority over the liaison service. As some recipients could feel under pressure to participate, the invitation will explicitly advise recipients, that participation is on a voluntary basis. That they are permitted to engage in the process during working hours, and all responses are to be sent directly to the principal investigator, so the co researcher will not be aware of the identity of those engaging. Qualitative data will be redacted at source and persons names or other identifying information will not be transcribed or reported. Participants' information will be treated as confidential data and therefore they will not be identifiable.

C5.3 Please comment on whether women of child-bearing potential, breastfeeding mothers, or pregnant women will be included or excluded in this research study.

Women of child-bearing potential, breastfeeding mothers, or pregnant women will not be included or excluded in this research study.

SECTION D research PROCEDURES

SECTION D IS MANDATORY

D1 (a) What activities, procedures or interventions (if any) are research participants asked to undergo or engage in for the purposes of this research study?

Participants are asked to engage in a 30 minute semi structured individual interview. Please see Appendix No. 4 for list of semi structured questions.

D1 (b) What other activities (if any) are taking place for the purposes of this research study e.g. chart review, sample analysis etc?

A data minimisation and de identifying exercise will be undertaken by the co researcher in the study site, on data sets 1&2. All identifiable information and data surplus to the needs of this study will be removed from the primary data sources before it is given to the principal investigator. Each case will be assigned a unique research case ID, with repeat cases retaining the initial research case ID assigned to their case. The Co researcher will retain the key linking the case IDs and the local unique identifier for the patient in the survey site. This information will not be disclosed to the Principal Investigator.

D2. Please provide details below of any potential harm that may result from any of the activities, procedures, interventions or other activities listed above.

The study design does not include any interaction with patients. No patient names or personal data items are being exchanged and so the risk of identifying the patient is greatly minimised in the quantitative aspect of the study.

Primary qualitative data from interview transcripts will only be available to the principal investigator and coded data to the co researcher and study supervisor.

As participation in the semi structured interviews is on a voluntary basis, no employee of the study site should feel compelled to participate. All data will be anonymised and treated in line with the data protection act 1998 and 2002 and the forthcoming GDPR 2018, as such the research team foresee no risk to participants.

D3. What is the potential benefit that may occur as a result of this study?

Decision makers and policy makers may be influenced with regard to investing in and extending the MHIS project depending on the outcome of the study

D4 (a) Will the study involve the withholding of treatment?

No

D5 (a) How will the health of participants be monitored during the study, and who will be responsible for this?

Non applicable, however, the principal investigator will make every effort to ensure the interviewees are comfortable for the duration of the interview, with awareness of exits, water stations, and rest room facilities before the interview proceeds. Participants will be encouraged to request a break if they feel they need to do so.

D5 (b) How will the health of participants be monitored after the study, and who will be responsible for this?

Non Applicable

D6 (a) Will the interventions provided during the study be available if needed after the termination of the study? Non-applicable

D7. Please comment on how individual results will be managed.

The interviews will be taped and the interviewer will take some brief notes.

Immediately after each interview the recording will be saved to an encrypted secure drive against the relevant unique ID and the file will be password protected.

The interview will then be deleted from the mobile recording device for security.

Each interview will be transcribed verbatim with the exception of names and other identifiable information. Participants will be given a full transcript of the interview upon receipt of an email request, and the Principal Investigator will give them the opportunity to edit or re phrase any content. The interview participants will be given a unique password at

the end of the interview which they will use to access any password protected transcriptions sent to them.

D8. Please comment on how aggregated study results will be made available.

A final copy of the dissertation will be sent to all participants and stakeholders when approved.

D9. Will the research participant's general practitioner be informed that the research participant is taking part in the study (if appropriate)? Non-applicable

D10. Will the research participant's hospital consultant be informed that the research participant is taking part in the study (if appropriate)? Y Non-applicable

SECTION E data protection

SECTION E IS MANDATORY

E1 data processing - consent

E1.1 (a) Will consent be sought for the processing of data? Yes

E1.1 (b) If no, please elaborate.

E2 data processing - GENERAL

E2.1 Who will have access to the data which is collected?

The principal investigator Louise Prendergast will have sole access to the raw qualitative data. The academic supervisor and co researcher will have access to the redacted qualitative data.

Only the co researcher will have access to the raw quantitative data, the principal investigator and her academic supervisor will have access to the de-identified quantitative data.

E2.2 What media of data will be collected?

Voice recording (audio data) and coded electronic transcripts relating to the semi structured interviews, and de-identified electronic data regarding the two quantitative aspects to the study.

E2.3 (a) Would you class the data collected in this study as anonymous, irrevocably anonymised, pseudonymised, coded or identifiable data?

Quantitative data; will be coded by the co researcher at source and only deidentified data will be passed to the principal investigator.

Qualitative data; will be pseudo anonymised by the principal investigator

E2.3 (b) If 'coded', please confirm who will retain the 'key' to re-identify the data?

Quantitative data; the co researcher will retain the key for the coded deidentified quantitative data. This information will not be disclosed to the principal investigator.

Qualitative data; the principal Investigator will retain the key for the redacted and themed qualitative data.

E2.4 Where will data which is collected be stored?

In password protected files, on the principal investigators secure password protected XXXX drive. This drive can only be accessed by the principal investigator.

E2.5 Please comment on security measures which have been put in place to ensure the security of collected data.

Qualitative data will be saved in password protected files, in a password protected device while in transit from the interview. The principal investigator will then immediately transfer to a password protected folder on a password protected, encrypted server, which is

protected with virus and malware protection. The original recording will then be deleted from the mobile device.

E2.6 (a) Will data collected be at any stage leaving the site(s) of origin?

Yes

E2.6 (b) If yes, please elaborate.

Quantitative data will leave site of origin in an encrypted email as a password protected file.

Qualitative data will leave site of interview on an encrypted password protected mobile device

E2.7 Where will data analysis take place and who will perform data analysis (if known)?

Data analysis will take place in the principal investigator's office in Whitaker House, and it will be performed by the principal investigator alone, however their academic supervisor maybe consulted at times in relation to redacted and deidentified data.

e2.8 (a) After data analysis has taken place, will data be destroyed or retained?

Qualitative data will be retained until the dissertation has been examined as per college regulations. It will then be retained for 10 years in line with data protection legislation which is 10 years at present and then securely destroyed.

E2.8 (b) Please elaborate.

Qualitative data will then be retained for 10 years in line with data protection legislation which is 10 years at present and then securely destroyed.

De-identified quantitative data will be retained for 10 years and then securely destroyed.

E2.8 (c) If destroyed, how, when and by whom will it be destroyed?

The principal investigator will delete and erase all electronic files and shred all paper files securely in 10 years.

E2.8 (d) If retained, for how long, for what purpose, and where will it be retained?

Data will be retained for 10 years for verification and validation purposes, in password protected files, on the principal investigators secure password protected encrypted XXXX drive.

E2.9 Please comment on the confidentiality of collected data.

The data will be treated in strict confidence

E2.10 (a) Will any of the interview data collected consist of audio recordings / video recordings? Yes Audio but No video

E2.10 (b) If yes, will participants be given the opportunity to review and amend transcripts of the tapes?

A copy of the transcript will be made available to participants upon receipt of a request email from individual participants from an email address they wish to receive the transcript to. To ensure utmost confidentiality, transcripts will be sent by reply email only to the email address used by the requesting participant. These emails will be encrypted and password protected. The researcher will give participants the opportunity to edit or rephrase any content, for one week after the last interview is scheduled. This date will be given to the participant at the end of their interview session.

E2.11 (a) Will any of the study data collected consist of photographs/ video recordings?

No

e3 ACCESS TO HEALTHCARE RECORDS

E3.1 (a) Does the study involve access to healthcare records (hard copy / electronic)?

NO

SECTION j INDEMNITY and insurance

SECTION J IS MANDATORY

J1 Please confirm and provide evidence that appropriate insurance/indemnity is in place for this research study at each site.

Answer I confirm that appropriate insurance is in place for the study site

J2 Please confirm and provide evidence that appropriate insurance/indemnity is in place for this research study for each investigator.

Answer I confirm that appropriate insurance is in place for the Principal Investigator and co researcher (See Appendix 6).

J3.1 Please give the name and address of the organisation / or individual legally responsible for this research study?

School of Computer Science and Statistics

Trinity College Dublin , College Green, Dublin 2

J3.2 Where an organisation is legally responsible, please specify if this organisation is:

A pharmaceutical company No

A medical device company No

A university Yes

A registered charity No

Other No If yes, please specify: Answer

J3.3 Please confirm and provide evidence of any specific additional insurance / indemnity arrangements which have been put in place, if any, by this organisation / or individual for this research study?

None

SECTION K COST AND RESOURCE IMPLICATIONS, funding and payments

SECTION K IS MANDATORY

k1 COST AND RESOURCE IMPLICATIONS

K1.1 Please provide details of all cost / resource implications related to this study (e.g. staff time, office use, telephone / printing costs etc.)

This study is being undertaken in the Principal Investigators own time. However </=8, 30 minute interviews may take place in the study site during working hours. This time has been sanctioned by line managers with no obligation on participants to work back the time.

k2 funding

K2.1 (a) Is funding in place to conduct this study?

No

K2.1 (b) If no, has funding been sought to conduct this study? From where? Please elaborate.

No

K2.1(d) Please provide additional details in relation to management of funds.

N/A

K2.1(e) Is the study funded by a 'for profit' organisation? No

K2.2 (a) Do any conflicts of interest exist in relation to funding or potential funding? No

k3 payments to investigators

K3.1 (a) Will any payments (monetary or otherwise) be made to investigators? No

k4 payments to PARTICIPANTS

K4.1 (a) Will any payments / reimbursements (monetary or otherwise) be made to participants? No

SECTION I additional ethical ISSUES

L1 (a) Does this project raise any additional ethical issues? No

Please note; having reviewed the research proposal for this study, the Chairperson of the research ethics committee in the study site has provided “Chairpersons Approval” for the quantitative aspects of the study in relation to data source 1&2. Ethics approval is not required for staff surveys in the study site - Please see Appendix No. 7 for the letter detailing chairpersons approval.

PLEASE ENSURE THIS APPLICATION FORM IS FULLY COMPLETED AS INCOMPLETE SUBMISSIONS WILL NOT BE REVIEWED.

Appendix 8

Employers Ethics Approval

Ms. Louise Prendergast,
MHIS Project Manager,

Co. Dublin

19th April, 2018.

Dear Louise

Re Proposal: "ID 710" Bridging the Quality Chasm in Emergency Mental Healthcare, with access to the Mental Health EPR in the Emergency Department!

Thank you for sending the requested amendments. You now have the permission of the Research Ethics Committee to proceed with the aspect of your research that seeks to use [redacted] as a potential source of participants for your study.

This permission is valid for the period of 12 months from the date of this letter. If further time is required to gather data, you must reapply to the Committee to have the decision renewed setting out clearly the reasons for the extension. We cannot guarantee that such extensions will be granted. Ethical approval is granted on the condition that you ensure that you are in compliance with the Data Protection Acts 1988 and 2013 all data (if applicable) will be destroyed or archived in accordance with your application.

Furthermore, the Committee reminds you that you have agreed to the following, as indicated on the Applicant's Checklist:

- To fully acknowledge the role of [redacted] in facilitating this research in any written papers, posters and/or conference presentations.
- Any publication of the findings will a) include [redacted] as a contributor and b) incorporate the logo where possible (a jpeg file will be provided upon request)
- To forward a copy of your findings and/or any publications/research posters to [redacted] upon completion, to be made available to all staff.
- To permit your findings and/or any publications to be made available to the general public on the www.sjog.ie website upon completion, as deemed appropriate
- Upon completion you will be expected to present at the annual [redacted] as agreed with the Research Department.

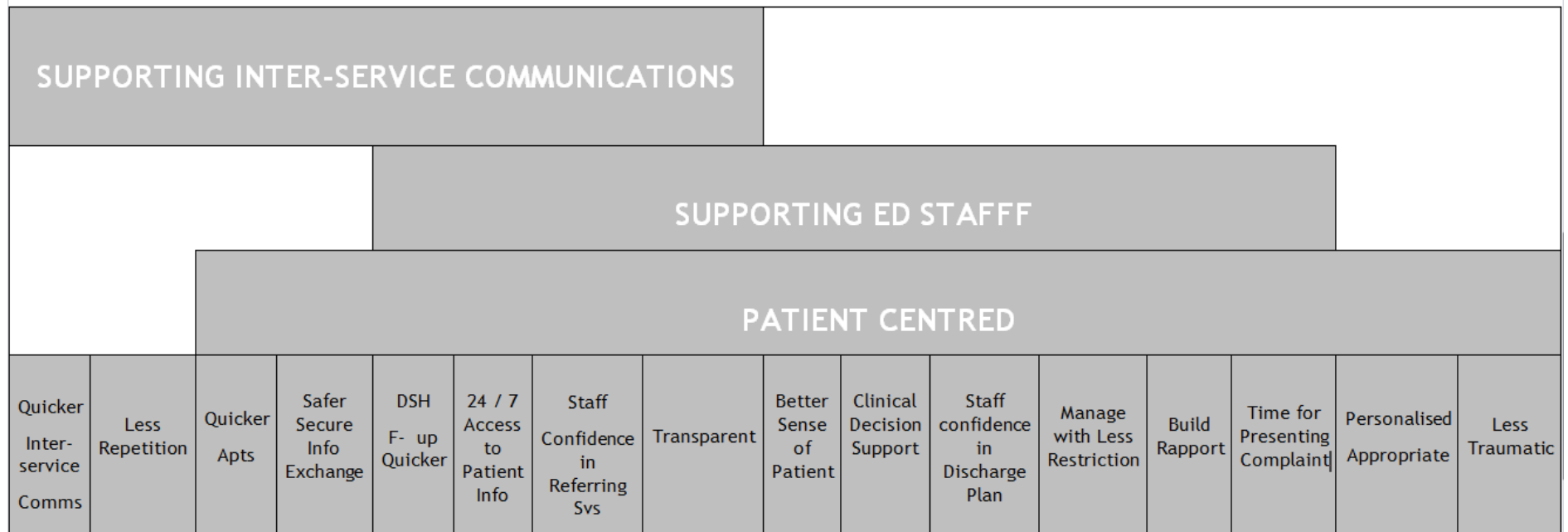
Meanwhile, may I take this opportunity to wish you well in your research. We look forward to hearing of your progress over the coming months.

Yours sincerely,



Appendix 9

Rough coding and theme development



Appendix 10

Code and Theme House Analogy

