

Journal Pre-proof

Psychiatric liaison service referral patterns during the UK COVID-19 pandemic: An observational study

Elizabeth L. Sampson, Jessica Wright, James Dove, Naaheed Mukadam



PII: S0213-6163(21)00029-X
DOI: <https://doi.org/10.1016/j.ejpsy.2021.05.003>
Reference: EJPSY 152
To appear in: *The European Journal of Psychiatry*
Received Date: 31 March 2021
Accepted Date: 28 May 2021

Please cite this article as: { doi: <https://doi.org/>

This is a PDF file of an article that has undergone enhancements after acceptance, such as the addition of a cover page and metadata, and formatting for readability, but it is not yet the definitive version of record. This version will undergo additional copyediting, typesetting and review before it is published in its final form, but we are providing this version to give early visibility of the article. Please note that, during the production process, errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

© 2020 Published by Elsevier.

Psychiatric liaison service referral patterns during the UK COVID-19 pandemic: an observational study

Elizabeth L Sampson^{*a, b}, Jessica Wright^b, James Dove^c, Naaheed Mukadam^{a, c}

^aDivision of Psychiatry, Faculty of Brain Sciences, University College London, 149 Tottenham Court Rd, London W1T 7NF, United Kingdom

^bBarnet Enfield and Haringey Mental Health Trust Liaison Psychiatry Team, North Middlesex University Hospital, Sterling Way, London, United Kingdom

^cCamden and Islington NHS Foundation Trust, St Pancras Hospital, 4 St Pancras Way London NW1 0PE, United Kingdom

Corresponding author: *Elizabeth L Sampson, UCL Division of Psychiatry, 6th floor, Wing B, Maple House, 149 Tottenham Court Road, London, W1T 7NF, 02076799500

e.sampson@ucl.ac.uk

Email addresses of other authors

Jessica Wright: jessica.wright7@nhs.net

James Dove: james.dove@nhs.net

Naaheed Mukadam: n.mukadam@ucl.ac.uk

ABSTRACT

Background and objectives: COVID-19 has had a profound effect on mental health. Liaison psychiatry teams assess and treat people in mental health crises in emergency departments (EDs) and on hospital wards. During the first pandemic wave, new Mental Health Crisis Assessment Services (MHCAS) were created to divert people away from EDs. Our objective was to describe patterns in referrals to psychiatric liaison services across the North Central London care sector (NCL) and explore the impact of a new MHCAS.

Methods: Retrospective study using routinely collected data (ED and ward referrals) from five liaison psychiatry services across NCL (total population 1.5 million people). We described referrals (per week and month) by individual liaison services and cross-sector, and patterns of activity (January 1st 2020 -September 31st 2020, weeks 1-39) compared with the same period in 2019. We calculated changes in the proportion of ED attendees (all-cause) referred to liaison psychiatry.

Results: From 2019-2020, total referrals decreased by 16.5% (12,265 to 10,247), a 16.4% decrease in ED referrals (9528 to 7965) and 16.6% decrease in ward referrals (2737 to 2282). There was a marked decrease in referrals during the first pandemic wave (March/April 2020),

which increased after lockdown ended. The proportion of ED attendees referred to liaison psychiatry services increased compared to 2019.

Conclusions: People in mental health crisis continued to seek help via ED/MHCAS and a higher proportion of people attending ED were referred to liaison psychiatry services just after the first pandemic wave. MHCAS absorbed sector ED activity during the pandemic.

KEYWORDS: General hospitals, Liaison psychiatry, Crisis intervention, Emergency department, Covid-19 virus

INTRODUCTION

The COVID-19 pandemic has had a profound effect on mental health in the United Kingdom (UK). The UK Opinions and Lifestyle Survey found the number of people experiencing moderate to severe symptoms of depression almost doubled between June 2019 and June 2020 from 10% to 19%. Similarly, self-reported anxiety significantly increased over this time.¹ There remain significant concerns regarding the longer-term mental health impact of the pandemic.² People with pre-existing severe mental illness have been particularly vulnerable during this time as they may lose access to already fragile social networks, become more socially isolated, stressed and at risk of substance misuse.³ Face-to-face mental health services have been widely disrupted during the pandemic with significant changes in their organisation and delivery.

In the UK, liaison psychiatry services provide specialist mental health services for general hospital patients, on wards, in outpatient clinics and in the emergency department (ED). These multidisciplinary teams care for people presenting with acute mental health crises in the ED, help to manage people with pre-existing mental illness who are physically unwell, and work with general hospital staff to care for patients who develop mental health or neuropsychiatric symptoms secondary to physical illness. They also work with people with alcohol and substance misuse, and medically unexplained symptoms. They are vital in managing the interface between physical and mental health, and in training and supporting general hospital staff.⁴ At the start of the COVID-19 pandemic, liaison psychiatry teams were frontline services, required to manage their normal workload, a potential increase in referrals secondary to psychosocial stresses of lockdown and the now well-documented neuropsychiatric sequelae of COVID-19, including delirium, anxiety, and psychosis.⁵

The COVID-19 outbreak was declared a global pandemic by the World Health Organisation on the 11th of March 2020. The UK went into a national lockdown on the 23rd of March 2020. The epidemic in London is estimated to have begun 15 days before this on the 8th March 2020.⁶ The first death in the North Central London Sector, where this study was conducted, with COVID-19 recorded on the death certificate occurred on the 11th March 2020.⁷ The rapid onset of the pandemic led the National Health Service (NHS) England to ask mental health trusts (service providers) to divert people in mental health crises away from emergency departments.⁸ The aim of this was to reduce pressure on emergency departments, allowing them to focus on “physical” healthcare and prevent cross-infection. New service models were rapidly implemented, one of the most common being the establishment of new mental health crisis assessment services on sites away from emergency departments.⁹ At the onset of the pandemic, Camden and Islington NHS Foundation Trust set-up a new Mental Health Crisis Assessment Service (MHCAS) to divert patients away from the three ED departments served by their liaison psychiatry services. People could attend MHCAS directly or be referred by the ED after initially presenting there. This started operating on 23rd March 2020. The service replicates the experience of being assessed in ED departments by providing clinical assessment by trained psychiatric healthcare professionals and is led by a full-time consultant psychiatrist based on a site owned by Camden & Islington NHS Foundation Trust.

The impact of COVID-19 and these new off-site mental health crisis assessment units on service activity is unknown. Therefore, our aim was to explore this across a large health economy in north London, UK. Specific objectives were to:

1. Describe the absolute number of ward and ED referrals to liaison psychiatry services during the first wave of the pandemic
2. Compare this activity to the same period in 2019
3. Investigate whether the proportion of all people attending EDs, regardless of their reason for presentation, who then required referral to psychiatric liaison services, changed during the first wave of the pandemic
4. Explore the impact of a new mental health crisis assessment service “MHCAS”, implemented during the first wave of the pandemic, on liaison psychiatry activity levels

METHODS

We conducted a retrospective study using routinely collected service activity data.

Study setting

Data were collated from all liaison psychiatry services across the North Central London (NCL) Sustainability and Transformation area. This is a partnership between health and social care organisations from Barnet, Camden, Enfield, Haringey, and Islington boroughs with a total population of 1.5 million people. The area comprises both inner city, outer London and suburban boroughs covering great socio-economic and ethnic diversity. There are two providers of mental health services within the sector, serving the respective boroughs: Camden and Islington NHS Foundation Trust and Barnet, Enfield and Haringey Mental Health Trust. These provide liaison psychiatry services for people aged 17 years and over across five general hospitals; Barnet General Hospital, and North Middlesex University Hospital (liaison services provided by Barnet, Enfield and Haringey Mental Health Trust) and University College London Hospital NHS Foundation Trust, The Whittington Hospital and The Royal Free Hospital (liaison services provided by Camden and Islington NHS Foundation Trust). The new MHCAS was set-up by Camden and Islington Mental Health Foundation Trust with the aim of diverting people in crisis away from the EDs they serve. All liaison psychiatry services in the sector are designated “Core 24”, providing services 24 hours per day for a hospital with an ED, but do not do outpatient work.^{4, 10} (table 1).

Table 1 approximately here

Data

We used anonymised service-level data, routinely collected by each of the five liaison psychiatry services as part of routine performance monitoring. Data was collated by week from 1st January 2019-30th September 2019 and 1st January 2020-30th September 2020. We obtained data on the number of referrals per week to liaison psychiatry services from 1) emergency departments and MHCAS and 2) wards.

We obtained publicly available data on the total number of all-cause attendances at NCL emergency departments, by month (1st January 2019-30th September 2019 and 1st January 2020-30th September 2020), from the UK NHS digital Hospital Episode Statistics (HES) website.¹¹ This is a data warehouse containing details of all admissions, outpatient appointments, and ED attendances at NHS hospitals in England.

Ethics statement

This study was performed in accordance with the Declaration of Helsinki. Ethics approval was not received for this human study because this evaluation used routine anonymised data and permission from an ethics committee was not required. The project was registered with and approved by the audit/evaluation departments of the participating mental health trusts.

Data analysis

Data were provided through routine reporting of service activity from the mental health trusts and collated into an Excel spreadsheet. We categorised data by week and calendar month. We produced simple counts of activity per week (by number of ward and ED referrals) for weeks 1-39 of each year, by the individual general hospital liaison services and then across the sector as whole. The number of ED referrals for Barnet, Enfield and Haringey Mental Health Trust comprises just patients who attended local general hospital emergency departments. For Camden and Islington NHS Foundation Trust, the data on “ED attendance” comprises patients presenting to the MHCAS, some referrals of patients who attended general hospital EDs and were then diverted to MHCAS, and other patients who were directly conveyed to MHCAS via ambulance or police, or who self-referred to the service. We calculated the total number of referrals across the sector for this nine-month period in each year and the average number of referrals per week (with standard deviation (SD)). We calculated the percentage change in activity comparing the same months in 2019 and 2020.

We extracted the number of all-cause attendances at NCL sector ED departments from HES data and calculated the percentage changes in these comparing the same months 2019-2020. We then calculated the proportion of ED attendances that were referred to liaison psychiatry services and the percentage change in this from 2019 to 2020. Graphs were produced in Excel, using a four-week moving average to smooth short-term fluctuations and allow clearer interpretation of trends.

RESULTS

Total number of referrals

In weeks 1-39 of 2019, there were a total of 12,265 referrals to NCL liaison psychiatry services. In 2020 this decreased by 16.4% to 10,247. Across the same weeks, in 2019 there were a total of 9528 referrals from ED departments which decreased by 16.4% to 7965 in 2020. In 2019 there were 2737 ward referrals which decreased by 16.6% to 2282 in 2020 (figure 1,

table 2, table 3). Across the sector (five liaison psychiatry services) in 2019, the mean number of ward referrals per week was 70.2 (SD 10.2) and this decreased to 58.5 (SD 13.2) in 2020. In 2019, the mean number of ED referrals per week was 244.3 (SD 16.5) and this decreased to 162.4 (SD 54.4) in 2020.

Figure 1 approximately here

Referrals by mental health trust

Both mental health trusts' liaison psychiatry services experienced a marked decline in referrals during the peak of the pandemic wave in March and April 2020, compared to the same period in the prior year. This was followed by a slight reduction in activity between May to July 2020 after lockdown ended (May 10th, 2020) (table 2). There was great variability in the number and types of referrals (ward or ED) received by individual liaison psychiatry teams (figure 2).

Table 2 approximately here

Figure 2 approximately here

Referral source

In March 2019 there were 309 ward referrals to liaison psychiatry services across the NCL sector, this reduced to 161 in March 2020, a 47.9% reduction. In April 2019 there were 339 ward referrals to liaison psychiatry services from wards which reduced to 188 in March 2020, a 44.5% reduction. For ED referrals, this reduction was 32.7%, comparing March 2019 (951 referrals) with March 2020 (640 referrals) and a reduction of 60.4% comparing April 2019 (1222 referrals) with April 2020 (484 referrals) (table 3).

Table 3 approximately here

Changes in the proportion of sector emergency department attendances referred to liaison psychiatry services

Compared with 2019, there was a 28.8% decrease in total all-cause attendance at sector ED departments in March 2020 and a further decrease to 52.7% in April 2020. The proportion of people who attended ED who then required referral to liaison psychiatry services increased after the first pandemic wave, by 67.1% in May 2020. The increase in the proportion of general ED attendees referred to liaison psychiatry services continued through to July 2020 (table 3).

The impact of MHCAS

The MHCAS (Camden and Islington Mental Health Trust) saw a mean number of 58 referrals per week (SD 14.1). Figure 3 demonstrates how MHCAS absorbed much of the sector ED activity. Liaison psychiatry services in the Barnet, Enfield, and Haringey Trust, which did not run an MHCAS system, showed a smaller decrease in ED referrals during the pandemic and saw a quicker return to 2019 levels of activity after March 2020.

DISCUSSION

Key findings

This study adds to a growing evidence base on the impact of COVID-19 on mental health service demand and provision and is the first to describe the impact of the pandemic on psychiatric liaison services across a large health and social care economy encompassing two large providers of mental health services. We found that although there was a decrease in both ED and ward-based liaison psychiatry referrals in the initial 2 months of the first pandemic wave, ward activity levels increased back to levels similar to those of 2019. In areas without an MHCAS service, ED referral numbers also returned to 2019 levels after the peak of the first wave. For liaison psychiatry services linked to the MHCAS, ED referrals rose again more slowly after the peak of the first pandemic wave. The proportion of all-cause patient presentations to the ED referred to psychiatric liaison services increased during and after the first pandemic wave. Our findings suggest that an alternative to ED for people in mental health crisis (MHCAS) absorbed much of the ED activity of the sector.

Findings in context

During the first pandemic wave there was a marked decrease in all-cause attendances to UK emergency departments.¹² Our findings reflect this, and recently published data on psychiatric presentations from other areas of the UK. For example, in Cambridge¹³ there was a “substantial reduction” and South London a 40% decrease.¹⁴ These findings are also reflected internationally with a 21% reduction reported in an Irish teaching hospital¹⁵ and a 37% reduction in an ED in New Zealand.¹⁶ In all of these studies, referrals followed a gradual return to 2019 levels. In our study, hospitals which did not set up an MHCAS, saw a more rapid return of ED referrals to 2019 levels.

All-cause attendance at UK ED departments dropped significantly during the first pandemic wave, prompting concerns that patients were not seeking help early enough for acute illness such as stroke or acute coronary syndrome. We found that while fewer people attended ED during and just after the pandemic, a higher proportion of these were referred to liaison psychiatry with mental health problems, for example, in May 2019, 2.0% of people presenting to ED were referred to liaison psychiatry services, compared to 3.4% in May 2020, a 67.1% increase. Although the relative percentages are small, given that NCL sector ED departments saw a total of 457,570 patients in the first nine months of 2020, this represents a large relative increase in liaison service activity which continued for three months. A similar pattern was also found in Ireland by McAndrew et al. who described an overall 30% reduction in ED attendances, but a smaller decrease in presentations from people with psychiatric problems.¹⁵ This may be due to those with more severe psychiatric symptoms presenting to ED, necessitating onward referral, whilst people with physical healthcare problems avoided ED because of concerns regarding contracting COVID-19.

Our data demonstrates that people with mental health problems continued to seek crisis care during and after the pandemic via ED and MHCAS services. However, we cannot comment on severity of illness in those presenting and whether this changed during the course of the pandemic because this data was not available. Decreased clinical activity for ward referrals has also been described; our finding of a cross-sector 47.9% and 44.5% decrease in March and April 2022, compared to the same period in 2019 is similar to the 40% reduction in ward referrals seen in a single hospital in South London.¹⁴

A survey by the UK Royal College of Psychiatrists found that 43% of psychiatrists saw an increase in urgent and emergency cases following the first COVID-19 lockdown and a corresponding fall in routine appointments.¹⁷ It may be challenging for people in crisis or with severe mental illness to cope with remote assessment and support; people may have therefore preferred to attend MHCAS services for face-to-face care, leading to the rise in MHCAS attendance demonstrated in May-July 2020.

Many mental health trusts set up alternative pathways to attending ED at the beginning of the pandemic.⁸ Our data suggests the alternative MHCAS service absorbed ED psychiatric liaison activity across the sector. The service is still running (June 2021), and its quality and

acceptability is currently under evaluation using data on number and types of contacts and qualitative evaluation of service user and staff experience. It has the advantage of moving patients in acute mental health crisis from busy ED departments which are noisy and uncomfortable and improving “flow”, preventing people with mental health problems “breaching” ED 4-hour waiting rules and giving more time for crises to be resolved without the pressure of ED time targets but there are concerns that this change stigmatises those with mental health concerns and may divert those with comorbid medical conditions inappropriately.⁸ In addition, staff were moved from general hospital liaison teams into the MHCAS and this may have reduced their ability to respond promptly to ward referrals. In the local areas serviced by MHCAS, these issues are being addressed by a clear message that the MHCAS is set up as an option for patients, but that the doors of ED remain open. Patients who attend ED are still seen briefly by medical staff and only once acute medical issues have been addressed are they referred to liaison psychiatry (MHCAS) as usual. There is currently a national debate in the UK around the future of services such as MHCAS which will need to resolve these concerns. This paper gives context and contributes data to this debate. The structural changes required to develop an MHCAS service may have had unintended consequences elsewhere in the community mental health system, for example, MHCAS may have received patients who prior to the pandemic would have been assessed by community crisis teams; liaison psychiatry services do not operate within a vacuum.¹⁸

Most policy and commissioning of liaison psychiatry services focusses on ED.^{19, 20} However, ward activity is important and underestimated. The increase in ward referrals after the first wave may have been due to neuropsychiatric consequences of COVID such as delirium⁵ or admission of patients with complex medical and psychiatric problems who presented after lockdown ended. In addition, “usual” activity would have continued during the pandemic, for example, supporting maternity services. It is important to note that our ward referral data is only for first referrals. Many of these inpatients would then require further follow-up visits, so our data likely underestimates the activity delivered.

Strengths and limitations

A strength of this paper is that we used routinely collected data from five general hospitals providing care to a population of over 1.5 million people. We were able to compare activity data during the first pandemic first wave in 2020 to a similar period in 2019 and describe the number of referrals received by the new MHCAS. Our data may be more reliable than data collected at a national level, as mental health presentations are often inaccurately coded and do not

indicate how many patients are referred on to liaison psychiatry teams.^{21, 22} Liaison psychiatry service activity levels in the NCL sector during 2019 reflects findings in other UK services¹⁰ and our data may therefore be generalisable to other metropolitan areas of the UK.

There are a number of limitations of this retrospective observational data, including a lack of detail on the case mix and demographics of patients referred. This highlights a weakness in the collection of routine data on liaison psychiatry service activity which, although mostly provided by mental health trusts, is delivered in general hospitals which are managed by separate general hospital trusts. Our data may underestimate activity. During the pandemic peak, there were liaison service reorganisations, staff shortages, and a focus on rapid assessment and discharge which may have led to under-recording. During the pandemic, liaison psychiatry teams took on extra roles within general hospitals including leading staff wellbeing programmes and staff counselling support, particularly in intensive care units but we have no data on if or how this affected patient care. We also cannot rule out the possibility that the MHCAS opening inflated numbers presenting as patients may have been more likely to seek help in this setting rather than relying on telehealth from community services.

Clinical and policy implications

Liaison psychiatry teams and mental health trusts need to improve data collection for their routine activities, particularly for ward-based work where, after referral, patients may have repeated contacts and require intensive support. Often, only the initial assessment on the ward is coded and therefore follow up visits are not coded, leading to an underestimate of ward-based activity. This has implications for staffing and funding of liaison services. Further evaluation of the advantages and disadvantages of alternatives to ED for people in mental health crisis is also required. At the time of publishing this paper, we are recovering from the second wave of the pandemic and it will be important to plan for the expected increase in liaison psychiatry referrals after this. This will occur in addition to an existing year-to-year increase in liaison psychiatry service activity,²³ but the UK is estimated to be short of at least 150 consultant liaison psychiatry posts.²⁰ The COVID-19 pandemic has highlighted the importance of the interface between mental and physical health and liaison psychiatry services are vital in bridging this gap.

Conflict of interest

ELS and JW are employed by Barnet, Enfield and Haringey Mental Health Trust, NM is employed by Camden and Islington N Foundation Trust. ELS, JW and NM work in liaison

psychiatry services. JD is employed by Camden and Islington NHS Foundation Trust and works in the MHCAS service. No other conflicts of interest are present.

Ethical considerations

This study was performed in accordance with the Declaration of Helsinki. Ethics approval was not received for this human study because this evaluation used routine anonymised data and permission from an ethics committee was not required. The project was registered with and approved by the audit/evaluation departments of the participating mental health trusts.

Declarations of interest

blinded for review- no others to add.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Acknowledgements

We would like to thank our liaison psychiatry and MHCAS teams who continued to work throughout the pandemic to provide mental health care, and Maria Jeffreys and Catherine Fitzgerald for administrative support.

REFERENCES

1. Office For National Statistics. Coronavirus and the social impacts on Great Britain, <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandwellbeing/datasets/coronavirusandthesocialimpactsongreatbritaindata/>; 2021 [accessed 20 February 2021]
2. National Confidential Inquiry into Suicide and Safety in Mental Health. National academic response to COVID-19-related suicide prevention, <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandwellbeing/datasets/coronavirusandthesocialimpactsongreatbritaindata/>; 2021 [accessed 20 February 2021]
3. Kozloff N, Mulsant BH, Stergiopoulos V, Voineskos AN. The COVID-19 Global Pandemic: Implications for People With Schizophrenia and Related Disorders. *Schizophr Bull* 2020;46:752-757.
4. Aitken P, Robens S, Emmens T. Developing Models for Liaison Psychiatry Services- Guidance, 2014.
5. Butler M, Pollak TA, Rooney AG, Michael, BD, Nicholson TR. Neuropsychiatric complications of covid-19. *BMJ* 2020;371:m3871.
6. Knock ES, Whittles LK, Lees JA, Perez-GuzmanPN, Verity R, FitzJohn RG, et al. Report 41: The 2020 SARS-CoV-2 epidemic in England: key epidemiological drivers and impact of interventions, 2021.

7. Public Health England. Deaths in the United Kingdom, <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandwellbeing/datasets/coronavirusandthesocialimpactsongreatbritaindata>; 2021 [accessed 20 February 2021]
8. Parmar N, Bolton J. Alternatives to emergency departments for mental health assessments during the COVID-19 pandemic. London, 2020.
9. Machray M., Varshney M. London Mental Health Crisis Hub Assessment Framework. London, 2020.
10. Saraiva S, Guthrie E, Walker A, Trigwell P, West R, Shuweidi F, et al. The nature and activity of liaison mental services in acute hospital settings: a multi-site cross sectional study. *BMC Health Serv Res* 2020;20:308.
11. NHS England. A&E Attendances and Emergency Admissions 2019-20, <https://www.england.nhs.uk/statistics/statistical-work-areas/ae-waiting-times-andactivity/ae-attendances-and-emergency-admissions-2019-2020/>; 2021 [accessed 25 May 2021]
12. NHS England. A&E Attendances and Emergency Admissions 2020-21, <https://www.england.nhs.uk/statistics/statistical-work-areas/ae-waiting-times-andactivity/ae-attendances-and-emergency-admissions-2020-2021/>; 2021 [accessed 25 May 2021]
13. Chen S, Jones PB, Underwood BR, Moore A, Bullmore ET, Banerjee S, et al. The early impact of COVID-19 on mental health and community physical health services and their patients' mortality in Cambridgeshire and Peterborough, UK. *J Psychiatr Res* 2020;131:244-254.
14. Butler M, Delvi A, Mujic F, Broad S, Pauli L, Pollak TA, et al. Reduced Activity in an Inpatient Liaison Psychiatry Service During the First Wave of the COVID-19 Pandemic: Comparison With 2019 Data and Characterization of the SARS-CoV-2 Positive Cohort. *Front Psychiatry* 2021;12:619550.
15. McAndrew J, O'Leary J, Cotter D, Cannon M, MacHale S, Murphy KC et al.. Impact of initial COVID-19 restrictions on psychiatry presentations to the emergency department of a large academic teaching hospital. *Ir J Psychol Med* 2021;38:108-115.
16. Joyce LR, Richardson SK, McCombie A, Hamilton GJ, Ardagh MW. Mental health presentations to Christchurch Hospital Emergency Department during COVID-19 lockdown. *Emerg Med Australas* 2021;33:324-330.
17. Royal College of Psychiatrists. Analysis of second COVID-19 RCPsych member survey – indirect harms, 2020.
18. House A, Guthrie E, Walker A, Hewson J, Trigwell P, Brennan C, et al. A programme theory for liaison mental health services in England. *BMC Health Serv Res* 2018;18:742.
19. NHS. The NHS Long Term Plan, 2019.
20. Whalley S, Aitken P, Lee W. Report of the 4th Survey of Liaison Psychiatry in England (LPSE-4). London: NHS England and the Liaison Faculty of the Royal College of Psychiatrists, 2019.
21. Udoh G, Afif M, MacHale S. The additional impact of liaison psychiatry on the future funding of general hospital services. *Ir Med J* 2012;105:331-2.
22. Baracaia S, McNulty D, Baldwin S, Mytton J, Evison F, Raine R, et al. Mental health in hospital emergency departments: cross-sectional analysis of attendances in England 2013/2014. *Emerg Med J* 2020;37:744-751.
23. Dove J, Mistry A, Werbeloff N, Osborn D, Turjanski N. Weekday and seasonal patterns in psychiatric referrals in three major London A&E departments, 2012–2014. *BJPsych Bulletin* 2018;42:5-9.

Figure Captions

Figure 1: Legend

ED 2019 — ED 2020 ————
Ward 2019 - - - Ward 2020 - - - -
Graph shows 4-week rolling averages

↓
Peak of deaths in London (week 15 of 2020)

Figure 2: Legend

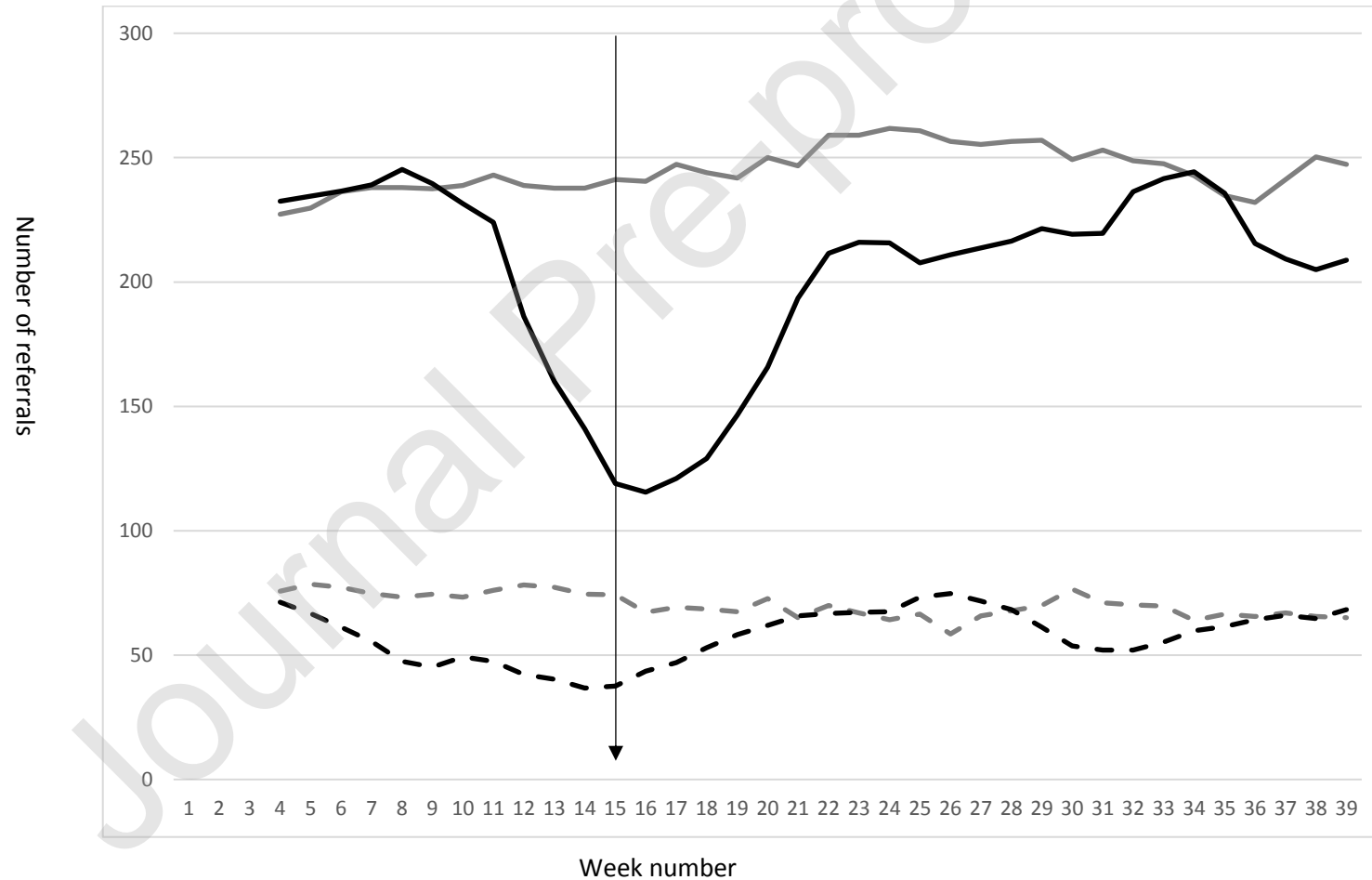
ED 2019 — ED 2020 ————
Ward 2019 - - - Ward 2020 - - - -
Graph shows 4-week rolling averages

↓
Peak of deaths in London (week 15 of 2020)

Journal Pre-proof

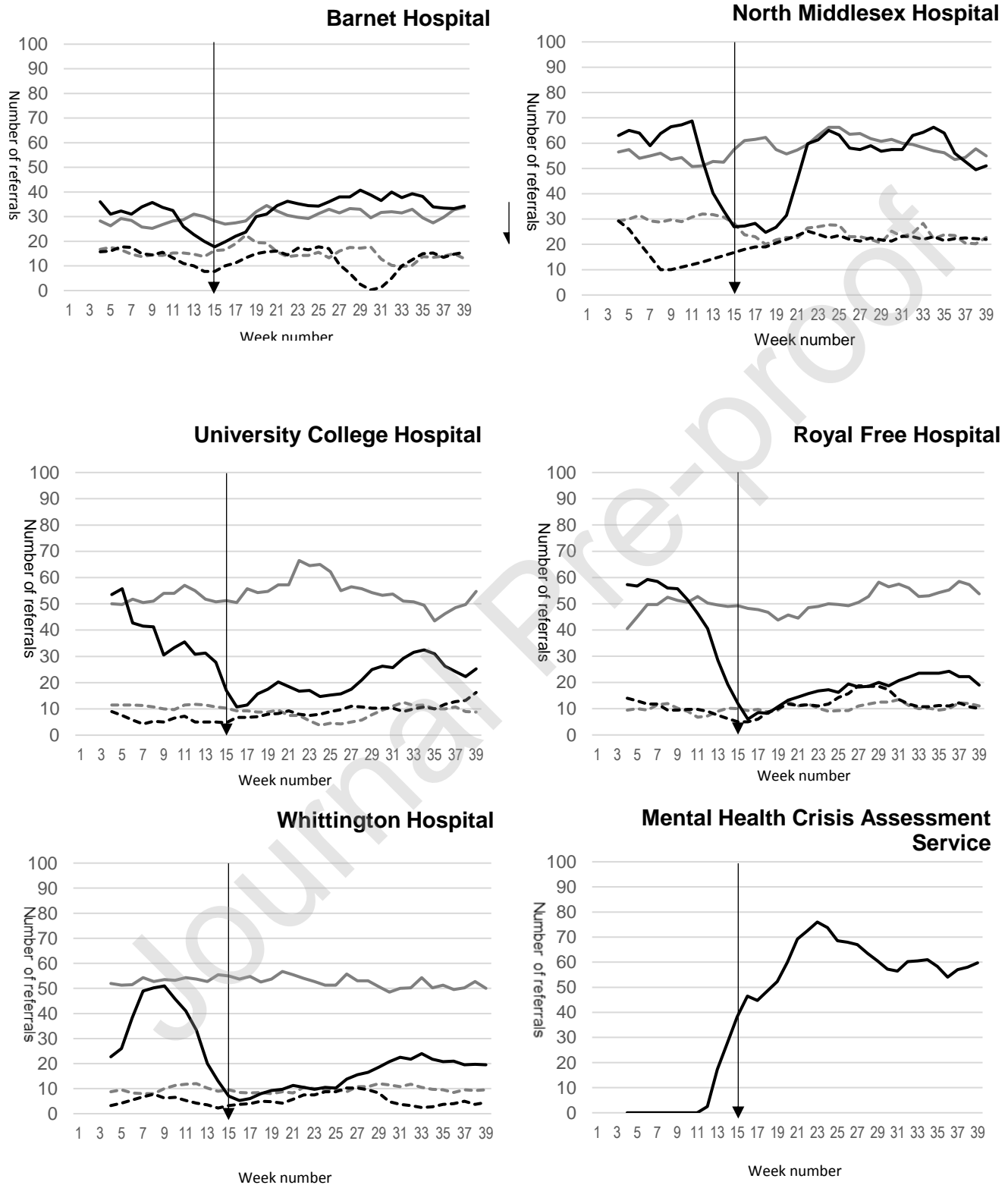
Liaison psychiatry COVID referral patterns

Figure 1: Changes in total liaison psychiatry service referrals from wards and emergency departments across the North Central London sector (January-September 2019 and 2020)



Liaison psychiatry COVID referral patterns

Figure 2: Changes in liaison psychiatry service referrals across North Central London by general hospital site (January-September 2019 and 2020)



Liaison psychiatry COVID referral patterns

Table 1. Characteristics of participating liaison psychiatry services and the acute hospitals they serve

	Liaison service provider	Type of service	MHCAS during COVID-19	Number of general hospital beds	Emergency department attendances April 2019-March 2020*
North Middlesex University Hospital	Barnet, Enfield and Haringey Mental Health Trust	Core 24	No	460	184,035
Whittington Hospital	Camden and Islington Foundation Trust	Core 24	Yes	360	107,815
Barnet Hospital	Barnet, Enfield and Haringey Mental Health Trust	Core 24	No	584	286,775 [†]
Royal Free Hospital	Camden and Islington Foundation Trust	Core 24	Yes	698	
University College Hospital	Camden and Islington Foundation Trust	Core 24	Yes	660	146,455

Legend: *Data obtained from <https://digital.nhs.uk/data-and-information/publications/statistical/hospital-accident--emergency-activity/2019-20>

[†] Emergency department services at Royal Free Hospital and Barnet Hospital are delivered by a single provider (Royal Free Hospital) so separate data are not available

Liaison psychiatry COVID referral patterns

Table 2: Liaison psychiatry service referrals across mental health trusts in North Central London (January-September 2019 and 2020)

	Barnet, Enfield and Haringey (no MHCAS available)			Camden and Islington (MHCAS available)			Sector		
	2019	2020	Δ	2019	2020	Δ	2019	2020	Δ
January	645	676	4.8%	882	825	-6.5%	1527	1501	-1.7%
February	492	507	3.0%	756	632	-16.4%	1248	1139	-8.7%
March	521	349	-33.0%	739	452	-38.8%	1260	801	-36.4%
April	663	322	-51.4%	898	350	-61.0%	1561	672	-57.0%
May	521	630	20.9%	795	700	-11.9%	1316	1330	1.1%
June	531	532	0.2%	729	611	-16.2%	1260	1143	-9.3%
July	536	586	9.3%	767	778	1.4%	1303	1364	4.7%
August	618	555	-10.2%	923	634	-31.3%	1541	1189	-22.8%
September	498	491	-1.4%	751	617	-17.8%	1249	1108	-11.3%
Total	5025	4648	-7.5%	7240	5599	-22.7%	12265	10247	-16.5%

Legend: MHCAS= mental health crisis assessment service, Δ = percentage change

Liaison psychiatry COVID referral patterns

Table 3: Liaison psychiatry service referrals from wards and emergency departments in North Central London (January-September 2019 and 2020)

	Ward			Emergency department			Sector emergency department activity			Proportion of sector Emergency Department activity referred to liaison psychiatry services		
	2019	2020	Δ	2019	2020	Δ	2019	2020	Δ	2019	2020	Δ
January	377	332	-11.9%	1150	1169	1.7%	51,886	53,635	3.4%	2.2%	2.2%	-1.7%
February	298	181	-39.3%	950	958	0.8%	49,056	48,815	-0.5%	1.9%	2.0%	1.3%
March	309	161	-47.9%	951	640	-32.7%	52,792	37,584	-28.8%	1.8%	1.7%	-5.5%
April	339	188	-44.5%	1222	484	-60.4%	50,039	23,660	-52.7%	2.4%	2.0%	-16.2%
May	280	334	19.3%	1036	996	-3.9%	51,348	29,545	-42.5%	2.0%	3.4%	67.1%
June	234	299	27.8%	1026	844	-17.7%	50,446	33,661	-33.3%	2.0%	2.5%	23.3%
July	306	268	-12.4%	997	1096	9.9%	53,367	36,906	-30.8%	1.9%	3.0%	59.0%
August	334	246	-26.3%	1207	943	-21.9%	48,890	39,184	-19.9%	2.5%	2.4%	-2.5%
September	260	273	5.0%	989	835	-15.6%	49,746	40,913	-17.8%	2.0%	2.0%	2.7%
Total	2737	2282	-16.6%	9528	7965	-16.4%	457,570	343,903	-24.8%	2.1%	2.3%	11.2%

Legend: Δ=percentage change