Mental health service use among mothers involved in public family law proceedings: linked data cohort study in South London 2007-2019

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Abstract

Background

Research in England suggests a high burden of mental health problems and substance misuse among women whose children enter care. Family courts therefore need to consider timely support for parental mental health and likely time to recovery within public family law proceedings concerning placement of a child into care ('care proceedings'). We report population-based evidence from linked, routinely collected, de-identified records on the type and severity of maternal mental health problems in relation to care proceedings.

Methods

We linked family court data and mental health service records for 2137 (66%) of women involved in care proceedings between 2007-2019 in the South London and Maudsley NHS Mental Health Trust (SLaM) catchment area. We compared their mental health service use and risk of dying with 17,096 female matched controls who accessed SLaM between 2007 and 2019, aged 16-55 years old.

Results

Most women (79%) were known to SLaM before care proceedings began. Compared to the matched controls, women had higher rates of schizophrenia spectrum disorders (19% vs 11% matched controls), personality disorders (21% vs 11%), and substance misuse (33% vs 12%). They were more likely to be admitted to a SLaM inpatient unit (27% vs 14%) or to be sectioned under the Mental Health Act (19% vs 8%). Finally, women had a 2.15 (95% CI: 1.68 to 2.74) times greater hazard of dying, compared with the matched controls, adjusted for age.

Conclusions

Given the high prevalence and severity of mental health problems among women involved in care proceedings, family law and social care policy is needed to ensure adequate and timely treatment for parent mental health problems. The increased risk of dying among those accessing mental health services highlights the critical need for post-proceeding services to ensure parents whose children enter care continue to receive support after care proceedings conclude.

Introduction

Recent evidence suggests there are high rates of mental health problems and substance misuse among women whose children enter care.[1–4] Children exposed to parental mental illness and substance misuse are more likely to experience neglect or abuse, the main drivers of children’s entry into public care.[5–8] Maternal, and indeed paternal, mental health problems and substance misuse are also common among families in serious case reviews of children who experience serious or fatal maltreatment in England.[9] Earlier treatment of these parental health problems could mitigate some of the risks that parental mental illness pose for child health and wellbeing, and lead to fewer children needing to be placed in state care, or fewer permanent placements.[10–13] However, there is limited evidence on the type, severity and timing of parental mental health problems and mental health service use in relation to court proceedings to inform action by family courts, social care services and healthcare.

To provide evidence on parental health in the context of child protection, many high-income countries and regions have successfully established linkages between data collected by child protection systems and administrative health data sets.[14–18] In South Australia, for example, the state government has worked together with researchers and local Aboriginal and Torres Strait Islander communities to establish a state-wide linkage project – the South Australia Early Childhood Data Project.[19] As well as being used for research, this linkage has directly informed redesign of the South Australian Child and Family Health Service in response to calls to improve and widen its support for families to reduce the need for child protection intervention.[19] Within the SAIL Databank, Griffiths et al used new linkages between Welsh family court data and health data on antenatal care, hospitalisations and general practitioner (GP) contacts, finding that half of women with infants in care proceedings (n = 1111) had a mental health -related hospitalisation or GP contact in the two years before birth, compared to 19% among a matched control group of other women in Wales giving birth.[18,20] The most common mental health disorders recorded among this group in the two years before birth were depression (41% vs 13% in the matched controls) and anxiety (25% vs 11%).[21] In England, there is a dearth of similarly linked health and social care data sets, stunting the evidence base on parental health in the context of child protection and its ability to inform policy.[22,23] In this study, we used data on women involved in public family law proceedings concerning the placement of a child into state care (‘care proceedings’) linked to de-identified mental health patient records from an NHS mental health trust, South London and the Maudsley (SLaM), serving a population of around 1.3 million.[24,25] In the UK, GPs are typically the first point of contact for adults experiencing mental health difficulties. Adults experiencing common mental health disorders, such as anxiety and mild depression, can also self-refer or be referred by their GP to the NHS’s Improving Access to Psychological Therapies (IAPT) service. Only those with particularly acute or complex mental health problems will meet thresholds for referral to secondary and tertiary mental health services, provided by NHS mental health trusts.[26] Two-thirds of women with children in care proceedings between April 2007 and March 2019 in the SLaM catchment area linked to a SLaM patient record. Most (91%) accessed secondary or tertiary SLaM services, suggesting high levels of specialist mental health service need among this population

Each year in England, around 24 children per 10,000 are involved in care proceedings and, despite the declining birth rate, the number of applications made to initiate care proceedings (per 10,000 children) has risen by 400% since 2010 in some local authorities.[27,28] Care proceedings are one of the most intrusive interventions into family life and are costly to the tax-payer.[29] Furthermore, a large proportion of women with children in proceedings will later return to court, often triggered by a further pregnancy.[2] Many who return experience mental health difficulties or problems with

drugs or alcohol, exacerbated by having multiple children placed into care.[2,30,31] Whole-population characterisation of maternal mental health need and service use among women involved in care proceedings in England is urgently needed to inform family justice system, children's social care, and health policy to improve responses to parental mental health need, and potentially reduce rates of initial and recurrent involvement in proceedings.[32]

Aims of the study:

We linked routinely collected records from family court and mental health services to describe the type and severity of mental health problems and substance misuse among women involved in care proceedings in parts of South London. To investigate long-term health outcomes, we also looked at women's risk of dying after care proceedings.

Methods

Data sources

Mental health service records

The South London and Maudsley NHS Mental Health Foundation Trust (SLaM) provide mental health services to patients living in the South London local authorities of Croydon, Lambeth, Lewisham, and Southwark ('the SLaM catchment area'). SLaM deliver a broad range of mental health services and operate three hospitals (Lambeth, Maudsley and Bethlem Royal); SLaM also deliver several regional and national specialist mental health services as well as providing some services to four neighbouring local authorities - Bexley, Bromley, Greenwich, and Wandsworth. Patients can be referred to SLaM by GPs, hospital services and, in some cases, social care and voluntary organisations. Some SLaM services are delivered in the community (e.g. home treatment teams and community mental health teams), though most are hospital-based inpatient or outpatient services. In addition to its secondary and tertiary care services, SLaM also provide the IAPT programme.[33]

De-identified SLaM electronic patient records are stored in the Clinical Record Interactive Search (CRIS) database to facilitate research.[34,35] CRIS contains data from every SLaM service from January 2007 onwards, though there are some records pre-2007. We used CRIS data collected between 1st January 2005 to 31st March 2020; CRIS data on dates of service events and referrals prior to January 2005 was typically poor in quality. The only exception was that we identified all diagnoses in CRIS, including those recorded before 2005. It is important to note that SLaM ceased providing substance misuse services to Lewisham (in 2010), Croydon (in 2014), and Southwark (in 2015), when these three local authorities commissioned non-SLaM providers to deliver these services.

Family court data

When local authorities make an application for a care order to the family court, they instigate care proceedings, subsequently Cafcass (Children and Family Court Advisory and Support Service) are notified. Due to their involvement, Cafcass have captured information about all care proceedings in England since 1st April 2007 in their case management system.[27] This includes information on the adults and children involved in care proceedings and the relationships between them (i.e. parent-child, sibling, grandparent-child). In this study we used an extract of Cafcass data on all women in care proceedings in the SLaM catchment area between 1 April 2007 and 31 March 2019. Coverage of data sources used in this study are described in Figure S1 of the supplementary appendix.

Study cohorts

Women in care proceedings

We used the study cohort that was previously reported in the linkage study.[25] In brief, we used Cafcass records for all women with care proceedings between April 2007 and March 2019 in Croydon, Lambeth, Lewisham or Southwark (i.e. the SLaM catchment area). Women were included in the cohort if they linked to a SLaM patient record at any point up to November 2019, when linkage was performed (n = 2137 out of 3226; 66%).[25] Linkage was performed by the SLaM Clinical Data Linkage Service (CDLS) using a rule-based method and applying the separation principle.[36] At least two-thirds of women with a child involved in care proceedings in the SLaM catchment area had been referred to or used mental health services run by SLaM at some point before linkage of this cohort in November 2019.[25] Women in the cohort were typically younger at entry to motherhood than other women in England and most had just one child recorded in Cafcass. Half of the cohort had an infant (aged <12 months old) involved in proceedings, in line with previous research.[37,38] Two-thirds experienced loss of care of at least one child via a Care Order, a Placement Order, a Child Arrangements Order, or a Special Guardianship Order. Many (38%) had two or more sets of proceedings recorded in Cafcass between 2007-2019. Further information, including differences in these characteristics between women involved in proceedings who did and did not link to a SLaM patient record, can be found in our linkage report.[25]

Creating the matched controls

To understand how the 'women in care proceedings' cohort differ from the population of mental health service users, we created a comparator cohort (n = 153,486) comprising all women of reproductive age (16-55 years old) living in the SLaM catchment area, who accessed SLaM services between 1st April 2007 and 31st March 2019 (Figure 1). SLaM do not routinely capture information on pregnancy or live birth, so we were unable to identify all women recorded within CRIS who are parents.

We included all women accessing any SLaM service, including the SLaM IAPT service. IAPT services use a purpose-built electronic patient record ('laptus') while all other SLaM services use the electronic patient record journey system (ePJS). We excluded 19,868 women with a SLaM patient record in ePJS but no address history in the SLaM catchment area, except women ever recorded as homeless (n = 43). The SLaM IAPT services are only eligible to individuals registered with a GP in the SLaM catchment area. We then removed 28,343 duplicates between laptus and ePJS via women's anonymised NHS number. NHS numbers are unique to each individual and are assigned to everyone registered for NHS care in England, Wales or the Isle of Man, or born in these areas. Finally, we excluded 2403 women who linked to Cafcass and, therefore, had been involved in care proceedings between 2007-2019 in the SLaM catchment area or in four neighbouring local authorities (Bexley, Bromley, Greenwich, Wandsworth) (Figure 1).

We matched women in the comparator cohort to women in the care proceedings cohort based on having a record from a SLaM secondary and tertiary service (ePJS only), IAPT (laptus only) or both. Women accessing IAPT typically present with mild depression and anxiety and as such may not provide good controls for women accessing the SLAM hospital services. We also matched on the calendar year of women's first SLaM contact (i.e. referral, inpatient admission, or outpatient attendance). Within each of the matching strata, women from the comparator cohort were randomly selected without replacement. Determined by the size of the smallest matching strata, we matched eight women in the comparator cohort to each woman in the care proceedings cohort, giving 17,096 matched controls.

Figure 1: Identifying a comparator cohort. Women aged 16-55 years old, accessing SLaM secondary and tertiary services and IAPT between April 2007 and March 2019, with an address history in a SLaM constituent local authority (Croydon, Lambeth, Lewisham or Southwark)

* SLaM provides the Improving the Access to Psychological Therapies (IAPT) programmes in Croydon, Lambeth, Lewisham and Southwark, which uses its own electronic patient system called IAPTus. Only patients registered to a GP within the local authority in which the IAPT programme is delivered are eligible for referral. All other SLaM services use the electronic patient journey system (ePJS) to record patient information.

CRIS = Clinical Research Interactive Search database; EPR = electronic patient record; SLaM = South London and Maudsley NHS Mental Health Foundation Trust.

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Measures

Sociodemographic characteristics

For the women in care proceedings cohort, date of birth and ethnicity were recorded in both CRIS and Cafcass data. Due to the poorer data availability in Cafcass for these fields, we used ethnicity and date of birth from CRIS where these fields were non-missing and from Cafcass otherwise.[25]

Severity and intensity of mental health service use

To better understand severity of mental health service need, we categorised SLaM service utilisation between 1st January 2005 and 31st March 2020 into four different types of activity: 1) referrals, 2) outpatient appointments, 3) inpatient admissions and 4) being sectioned under the mental health act. We further categorised referrals and outpatient appointments by whether the SLaM service was IAPT.

We categorised referrals to SLaM services into three groups: (1) accepted referrals, (2) rejected referrals, and (3) accepted referrals that ended due to ‘failure to engage’ (i.e. persistent non-attendance or poor engagement with the service).

We identified women who had at least one attended outpatient admission. We also calculated the proportion of planned outpatient admissions over this period that were missed due to non-attendance, attending too late to be seen, or patient cancellation.

CRIS captures all inpatient admissions to a SLaM service. We identified women with a SLaM inpatient admission that began or ended between 1st January 2005 and 31st March 2020. We calculated women’s average length of inpatient stay (in days) using complete inpatient stays only (i.e. admission that began and ended between 1st January 2005 and 31st March 2020).

We identified women who had been sectioned under the Mental Health Act 1983 for assessment or treatment by SLaM. This included: (1) women detained by police under section 135 or 136 to be taken to a place of safety for a mental health assessment; (2) women admitted to hospital under section 2 or 3 for assessment or treatment; and (3) women sectioned under parts of the Mental Health Act related to criminal justice (sections 35-37, 41, 46-48), which include powers to hold an individual in a secure mental health unit on remand or as part of a criminal sentence, or to transfer individuals to hospital from prison for treatment or assessment.[39]

Mental health and behavioural diagnoses

Psychiatric diagnoses were captured in structured fields recorded in the CRIS database using the World Health Organisation’s ICD-10 codes (International Statistical Classification of Diseases and Related Health Problems, 10th Revision).[40] Diagnoses were also been extracted from free-text fields using natural language processing (NLP) applications developed by the NIHR Maudsley Biomedical Research Centre.[34] We identified diagnoses for mental and behavioural disorders (i.e. all ICD-10 codes from Chapter V – Mental and behavioural Disorders) recorded at any point in CRIS up to 31st March 2020 and grouped them into seven mutually-exclusive categories (Table 1). We defined women with serious mental illness as those with a schizophrenia, schizotypal or delusional disorder or a severe mood disorder.

Diagnosis categories	ICD-10 codes
Schizophrenia, schizotypal and delusional disorders	F20-29
Severe mood disorders (i.e. bipolar affective disorder, severe or moderate depressive disorders, puerperal psychosis and postnatal depression)	F30-31, F32.1-32.3, F33.1-33.3, F34.0-34.1, F53.0-53.1
Anxiety, somatoform and stress-related disorders	F40-48
Other depressive disorders	F32.0, F32.8-32.9, F33.0, F33.4-33.9, F34.8-34.9, F38-39
Drug and alcohol -related disorders	F10-19 (excluding F17)
Personality disorders	F60-63
Other psychiatric disorders (including eating disorders, other perinatal psychiatric disorders and 'Unspecified mental illness')	F50-3, F53.8-53.9, F99
Disorders of psychological development and behavioural and emotional disorders with onset usually occurring in childhood or adolescence	F80-F89, F90-F98

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251 **Other diagnoses related to substance misuse or learning disability**

252 Women were coded as having a record of substance misuse if they had either a substance misuse -
 253 related diagnosis, using a previously developed ICD-10 code list,[41] or were known to one of SLaM's
 254 specialist services for people with alcohol or drug dependence problems. Similarly, women were
 255 coded as having a learning disability if they had a related diagnosis, using an ICD-10 code list,[42] or
 256 they had a record in CRIS under one of SLaM's specialist services for people with learning disabilities.
 257 We defined dual-diagnosis (both psychiatric and substance misuse diagnoses) as women with a
 258 record of substance misuse and at least one psychiatric diagnosis (Table 1), excluding drug and
 259 alcohol -related disorders.

260 **Specialist mental health service use**

261 To better understand the use of specialist mental health services among women involved in care
 262 proceedings in the SLaM catchment area, we identified and grouped several SLaM services together.
 263 Specialist mental health services provide tertiary care, typically delivered by psychiatrists who have
 264 specialized in the treatment of a particular group of psychiatric disorders or type of mental health
 265 care. The categories included: perinatal services (including a mother-baby unit); psychosis services;
 266 acute services (e.g. places of safety, home treatment teams, and short and long-term inpatient care);
 267 forensic services, criminal justice -related services (e.g. non-forensic services providing psychiatric
 268 care to individuals involved in criminal justice system or as part of a criminal sentence); substance
 269 misuse services; child and adolescent mental health services (CAMHS); and parenting services (e.g.
 270 CAMHS whole-family services, parenting assessment, parenting support, parent and child interaction
 271 services). These groupings were not mutually exclusive as some services spanned two or more
 272 service categories.

273 **Date of death**

274 We used the 'date of death' field in CRIS to identify any deaths up to 31st March 2020 and to derive
 275 age at death.[34] Follow-up time was calculated by subtracting date of death, or 31st March 2020 for
 276 women who did not die, from the date of women's first SLaM contact.

Statistical Analysis

We described and compared socio-demographic, diagnosis and service use measures between the women in care proceedings cohort and the matched controls. Women were followed up in the CRIS data from their first contact with SLaM (referral, inpatient admission, or outpatient attendance) to the 31st March 2020 or until death, whichever was earliest. To account for differences in the distribution of age at first SLaM contact among these two cohorts, for all discrete measures, we report age-standardised rates for the matched controls, with the care proceedings cohort as the reference population (age categories: 0-17 years old, 18-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50+). Age-standardised rates provide the expected prevalence (%) of measures among the matched controls if the distribution of age at first SLaM contact were the same as among the care proceedings cohort. For all discrete measures, the age-standardised rates were within 2 percentage points of the crude rate.

Mortality and immortal time bias

To compare mortality over follow-up between the care proceedings cohort and the matched controls, we first had to account for immortal time bias among women involved in care proceedings. Women in the care proceedings cohort whose index care proceedings began after their first SLaM contact had to be alive at least until their index proceedings began, whereas there was no such restriction among the matched controls. If we were not to take this bias into account, the difference in mortality over follow-up between study cohort and the matched controls may be underestimated. To correct for this bias, we used Cox proportional hazard regression models with death over follow-up (died = 1, alive/censored = 0) as the outcome. We included involvement in care proceedings (yes = 1, no = 0) and age at first SLaM contact (years) as model covariates. Involvement in care proceedings (yes = 1, no = 0) was included as a time-dependent covariate. This meant that, for women in the care proceedings cohort whose index proceedings (i.e. first recorded set of proceedings in the Cafcass data) began after their first SLaM contact, we split their follow-up time in two at the start date of index proceedings. The time before they entered care proceedings was coded as 0 to reflect that they were unexposed during this period (e.g. immortal time) and the time from the start of their index proceedings to the end of follow-up was coded as 1 (reflecting the period after care proceedings). We checked the proportional hazards assumption using Schoenfeld residual plots and fitted alternative models allowing the independent association between age at first SLaM contact and death to be non-linear using quadratic and natural spline functions (Figures S6 and S4, supplementary appendix). We checked for influential observations using dfbeta value plots (Figure S5, supplementary appendix).

We used the model to calculate expected mortality rates at 5 and 10 years from first SLaM contact for women in the care proceedings cohort and the matched controls, via the Aalen-Johansen method. For these predictions, we held age at first SLaM contact constant across both groups based upon the 25%, 50% and 75% quantiles of age at first SLaM contact among the care proceedings cohort. Asymptotic 95% confidence intervals for these rates were derived using the log-log transformation. We used the survival package in R.[43]

Ethics and public engagement

This study forms part of a wider data linkage project to generate evidence on the healthcare needs and healthcare use of women involved in care proceedings in England through linking routinely collected de-identified data without patient consent.[44] We received approval from the NHS Health Research Authority Research Ethics Committee (ref: 18/SC/0363) and the Confidentiality Advisory Group (ref: 18/CAG/0112) for this study and to establish the linked data set. We received approval from the CRIS Oversight Committee (ref: 19-050) and from the Cafcass Research Governance

Committee. A privacy notice on the linked data can be found here:
<https://www.maudsleybrc.nihr.ac.uk/facilities/clinical-record-interactive-search-cris/cris-data-linkages/>.

Before linking these data, we carried out several public engagement activities to gain feedback on the acceptability of linking these data for research, including a focus group involving women with past experience of care proceedings and mental health service use in South London that was hosted by the charity Pause. Pause support women at risk of having multiple children placed into care.[45] We also met with two mental health service user groups in South London, the CRIS Data Linkage Service User and Carer Advisory Group (DL-SUCAG) and the Addictions Service User Research Group (SURG),[46] to discuss this data linkage. Participant feedback from these events was supportive of the project purpose, the data linkages and helped us to identify further organisations and groups to engage with and share study findings with.

Results

Seventy-nine percent of the 2137 women in the care proceedings cohort were known to SLaM before their index set of care proceedings began, indicating frequent pre-existing or concurrent mental health need at onset of proceedings. The median time from first contact with SLaM to women's index set of care proceedings was 2.3 years (25% quantile: 5.5 years, 75%: 53 days). This means that over half of all women in care proceedings in the SLaM local authorities between April 2007 and March 2019 ($n = 1686/3226$) were known to SLaM before their index set of care proceedings began.

Matching variables

Most women (91%) in the care proceedings cohort were referred to, or accessed, SLaM secondary or tertiary mental health services at some point over follow-up. Forty-eight percent accessed specialist mental health services and IAPT services; just 9% of women in the care proceedings cohort accessed only IAPT services from SLaM. These proportions were the same among the matched controls (Table S1, supplementary appendix). Women in both cohorts were followed up for an average of 10.6 years (Table 2).

How women involved in care proceedings differed from other women accessing SLaM services

Age at first contact with SLaM

Women in the care proceedings cohort were typically younger at their first contact with SLaM than women in the matched comparator group (Figure 2). More women in the care proceedings cohort had a contact with SLaM before their 25th birthday than in the matched controls. Comparatively, more of the matched controls were first known to SLaM at 40 years old or older compared to the care proceedings cohort.

Figure 2: Age distribution of women at their first contact with SLaM (inpatient, outpatient, or referral) among the care proceedings cohort ($n = 2,137$) and the matched controls ($n = 17,096$)

Ethnicity

In both the care proceedings cohort and the matched controls, around half of women were from a white ethnic background (Figure 3). A greater proportion of women in the care proceedings cohort were from Black ethnic or mixed backgrounds. Fewer women in the care proceedings cohort had unknown ethnicity or ethnicity included in the 'Other' category, compared to the matched controls. Less than 3% of women in either cohort had Asian ethnicity.

Figure 3: Ethnicity among the care proceedings cohort (n = 2137) and matched controls (n = 17,096)

Severity and intensity of mental health service use

Around half of women in either cohort had an accepted IAPT referral (Table 2). Among those with at least one IAPT referral, the median number of accepted referrals was two per woman. Compared to the matched controls, more women in the care proceedings cohort had at least one referral to IAPT rejected and fewer women in the care proceedings cohort had an IAPT attendance. Among those with at least one planned IAPT attendance, women in the care proceedings cohort missed or cancelled a greater proportion of planned attendances on average than the matched controls. Most women accepted to IAPT services were discharged due to failure to engage at some point; again, this was higher among women in the care proceedings cohort than the matched controls.

Over 80% of women in either cohort had at least one referral accepted to secondary or tertiary mental health service at some point. Among those with at least one secondary/tertiary service referral, the median number of accepted referrals was three per woman in the care proceedings cohort, compared to two among the matched controls. Women in the care proceedings cohort were more likely to have a referral rejected at some point, compared with the matched controls. Over 85% of women in either cohort had an outpatient attendance. Among women with at least one outpatient attendance, women in the care proceedings cohort missed or cancelled more planned attendances on average than women in the matched controls. Among those with an accepted referral, twice as many women in the care proceeding cohort were discharged due to failure to engage at some point compared with the matched controls.

Over a quarter of women in the care proceedings cohort were admitted to SLaM inpatient care; more than twice as many as in the matched controls. Among women ever admitted, women in the care proceeding cohort had more admissions on average (median: 2 vs 1 inpatient admission) and stayed for longer on average (median: 27 days vs 23 days), compared with the matched controls. Twice as many women in the care proceedings cohort were sectioned under the Mental Health Act (19% vs 8%) and three times as many women were sectioned by police under 135 and 136 (11% vs 3%), compared with the matched controls.

Table 2: Other characteristics of SLaM service use over follow-up among the care proceedings cohort (n = 2137) and the matched controls (n = 17,096)

Characteristics of service use from 1 st Jan 2005 to 31 st March 2020)	Frequency (%) * or Median [25%, 75% quantile] among women using SLaM services	
	Care proceedings cohort (n = 2137)	Matched controls (n = 17,096)
Follow-up time		
Time from first SLaM contact to 31 st March 2020 or death	10.63 [7.01, 13.19]	10.59 [6.99, 13.16]
IAPT		
Any accepted referrals	1012 (47.4)	9210 (55.2)
Median number of accepted referrals per woman	2.00 [1.00, 3.00]	2.00 [1.00, 3.00]
Any rejected referrals	301 (14.1)	1612 (9.6)
Ever discharged from an active referral due to failure to engage (among those ever accepted to IAPT)	767 (75.8)	5691 (61.8)
Any IAPT attendance	748 (35.0)	7598 (45.4)
Median proportion of planned IAPT attendances that were missed or cancelled (per woman)	0.33 [0.00, 0.50]	0.22 [0.00, 0.42]
Secondary or tertiary mental health services		
Any accepted referrals	1817 (85.0)	14287 (83.7)
Median number of accepted referrals per woman	3.00 [1.00, 5.00]	2.00 [1.00, 3.00]
Any rejected referrals	726 (34.0)	4130 (24.5)
Ever discharged from an active referral due to failure to engage (among those ever accepted to secondary/tertiary services)	712 (39.2)	2874 (20.1)
Any outpatient attendances	1847 (86.4)	14882 (86.7)
Median proportion of planned outpatient attendances that were missed or cancelled (per woman)	0.17 [0.09, 0.28]	0.11 [0.00, 0.25]
Any SLaM inpatient admissions	582 (27.2)	2373 (13.4)
Median number of admissions per woman	2.00 [1.00, 4.00]	1.00 [1.00, 3.00]
Median average length of inpatient stay (days) per woman	27.00 [11.30, 52.30]	23.00 [8.00, 52.00]
Ever sectioned under the mental health act	404 (18.9)	1287 (7.2)
Section 135 or 136	226 (10.6)	530 (3.1)
Section 2 or 3	331 (15.5)	1081 (6.0)
Sections related to criminal justice	15 (0.7)	34 (0.2)

* age-standardised rates are presented in brackets '()' for the matched controls, with the study cohort as the reference population.

Note: medians are calculated from the subset of women who have ever had the qualifying event.

Mental health and behavioural diagnoses

Eighty-two percent of women in the care proceedings cohort and 77% of the matched controls had at least one mental health or behavioural diagnosis recorded in CRIS at any point up to 31st March 2020. Fifty-one percent of women in the care proceedings cohort and 39% in the matched controls had diagnoses in two or more of the categories presented in Figure 4.

Figure 4: Prevalence (%) of mental health and behavioural diagnoses (ICD-10: Chapter F) among the care proceedings cohort (n = 2137) and the matched controls (n = 17,096). Age-standardised percentages are given for the matched controls.

Rates of anxiety, stress and somatoform disorders, bipolar affective disorder and severe/moderate depressive disorders, and other depressive disorders (13% among the care proceedings cohort vs 12.3% among the matched controls) were similar between the care proceedings cohort and the matched controls (Figure 4). However, twice as many women in the care proceedings cohort were diagnosed with schizophrenia, schizotypal and delusional disorders compared to the matched controls. Similarly, twice as many women in the care proceedings cohort had a personality disorder diagnosis; in both the care proceedings cohort and the matched controls, two-thirds of women with a personality disorder diagnosis had a diagnosis of emotionally unstable personality disorder. We separated 'unspecified mental health disorder' from the 'other mental health disorders' grouping due the large number of women in both cohorts with this diagnosis. Most women with an 'unspecified mental health disorder' diagnosis (80% in the care proceedings cohort; 74% in the

matched controls) had at least one other psychiatric diagnosis recorded from the other groups presented in Table 1.

More women in the care proceedings cohort had a mental health diagnosis related to alcohol or drug use; 22% for drug-related (vs 6% matched controls) and 14% for alcohol-related (vs 6%). Thirty-three percent of women in the care proceedings cohort had a diagnosis for a serious mental illness, compared with 29% of the matched controls. Among women in the care proceeding cohort, over 50% had a diagnosis made before their index proceedings began, rising to 80% within 4 years of index proceedings (Figure S2, supplementary appendix).

Other diagnoses related to substance misuse or learning disability

Thirty-three percent of women in the care proceedings cohort had at least one diagnosis related to substance misuse or accessed SLaM's substance misuse services at some point over follow-up, compared with 12% of the matched controls. Twenty percent of women in the care proceedings cohort had dual-diagnosis (vs 7% of the matched controls). A small number of women in the care proceedings cohort had a learning disability diagnosis recorded in CRIS (5.7% vs 3.3% of the matched controls). Further investigation of dual-diagnosis highlighted that one in ten women in the care proceedings cohort (vs 3% of the matched controls) had a serious mental illness diagnosis alongside substance misuse and at least one other mental health disorder diagnosis over their life course (Figure S3, supplementary appendix).

Specialist mental health service use

Almost half of women in the care proceedings cohort accessed the SLaM acute psychiatric services (such as places of safety and inpatient care), compared to 30% of the comparator cohort (Figure 5). Consistent with the increased proportion of diagnoses of schizophrenia or substance misuse in the care proceedings cohort, more of these women used the SLaM psychosis or substance misuse services. More than four-times as many women in the care proceedings cohort accessed SLaM criminal justice-related services over follow-up, compared to matched controls. Though use of SLaM's perinatal services was higher among the care proceedings cohort than the matched controls, it is difficult to make comparisons as the number of control women who gave birth is not known. Four percent of women in the care proceedings cohort accessed the SLaM mother-baby unit.

Mortality up to 31st March 2020

Seventy-seven women (3.6%) in the care proceedings cohort and 587 women (2.6%, age-standardised) in the matched controls died over follow-up. Seventy-five percent of women in the care proceedings cohort who died were less than 48 years old at death. Three women in the matched controls (0.5% of those that died and 0.02% of the matched controls) were excluded from the modelling because their date of death was erroneously recorded as having occurred before their first SLaM contact. After performing model checks, the final model included age as a linear effect on death. After accounting for immortal time bias among the care proceedings cohort and adjusting for age at first SLaM contact, women in the care proceedings cohort had a 2.15 (95% CI: 1.68 to 2.74) times greater hazard of dying than women in the matched controls (Figure 6). From our model, women in the care proceedings cohort and aged 28 years old at their first SLaM contact (the median age at first SLaM contact among the care proceedings cohort) had an expected 5-year mortality rate of 1.29% (95% CI: 0.99 to 1.66%), compared to 0.60% (95% CI: 0.51% to 0.71%) for women in the matched control group aged 28 years old (Figure 6). The expected 10-year mortality rate was 3.12% (95% CI: 2.47 to 3.94%), compared to 1.46% (95% CI: 1.27% to 1.68%) among the matched controls.

476 Mortality rates for women of different ages at first SLaM contact are included in Table S3 of the
477 supplementary appendix.

Figure 5: Prevalence (%) of specialist mental health service use among the care proceedings cohort (n = 2,137) and the matched controls (n = 17,096). Age-standardised percentages are presented for the matched controls.

Figure 6: Estimated cumulative incidence of dying among women, who were aged 28 years old at their first SLaM contact in both the women in care proceedings cohort (n = 2,137) and the matched controls (n = 17,096)

Discussion

Summary of main findings

In this study, we described mental health service use among women involved in care proceedings in the SLaM catchment area. Of the 66% of women with a SLaM patient record, the majority had a recorded contact with a SLaM mental health service prior to court proceedings commencing, indicating pre-existing or concurrent mental health need. Overall, 54% of the 3226 women in care proceedings in the SLaM catchment area between 2007 and 2019 had a formal mental health diagnosis recorded by SLaM.

Women involved in care proceedings with a SLaM patient record were shown to have high rates of inpatient admissions, contacts with acute, psychosis, and criminal-justice related psychiatric services and admissions to hospital under the Mental Health Act compared to a matched control group of other women using mental health services. In addition, the care proceeding cohort demonstrated a higher burden of serious and complex mental illness, with twice as many women diagnosed with schizophrenia spectrum disorders, personality disorders, and substance misuse than in the control cohort, and over 50% with 2 or more diagnoses. After adjusting for age, women involved in care proceedings with a SLaM patient record also had higher mortality rates than the comparator group.

Findings in context

Our findings complement a small, but growing body of research identifying high maternal mental health need among women involved in care proceedings using routinely collected records.[1–3,21] We found higher prevalence of mental health need among women in care proceedings than previously reported in Wales: two-thirds of women in care proceedings in the SLaM catchment area accessed SLaM services at some point before March 2020 compared to 52% of women with infants in care proceedings in Wales who had hospital or GP mental health -related contacts in the two years before birth.[20] However, there are key differences between these two studies that could explain our higher prevalence. First, we included all women involved in proceedings whereas Griffith's et al focussed on women with infants in proceedings. We also used NHS mental health trust data, which meant we could rely on linkage status to identify mental health need rather than clinical diagnosis, and we followed women in the data for over 10 years; In comparison, Griffith's et al relied on clinical diagnoses made during hospitalisation and GP contacts and focussed on the 2-year period before birth. Subsequent publication from Wales has looked at types of mental health conditions experience in the two years before birth.[21] Again, comparisons are difficult due to differences discussed above. For example, Griffith's et al found that 40% of women had a depression diagnosis recorded in the two years before birth, however, in this study we split mood disorders into 'Bipolar and severe/moderate depressive disorders' and 'other depressive disorders' making comparison difficult. It is also difficult to compare rates of serious mental illness (4% among women in the Welsh study, defined as schizophrenia spectrum disorders and bipolar disorder), however, we found that 403 women (out of 3226, 12%) in care proceedings in the SLaM catchment area were ever diagnosed with a schizophrenia spectrum disorder suggesting much higher rates of serious mental illness among women involved in proceedings in South London compared to Wales. We found higher rates of anxiety among women in proceedings in South London (627 out of 3226; 19% vs 11% in Griffiths et al's study), which may be partly explained by the impact of proceedings on women's mental health as we captured diagnoses recorded before, during and after proceedings.[21,30] Finally, we found higher rates of mortality among women involved in proceedings, compared to the matched controls. While our investigations

were more crude than others (e.g. we matched on few variables and adjusted only for age), previous research into deaths among women whose children entered care in Manitoba, Canada and Sweden has shown that higher rates of death remain after adjusting for other mortality risk-factor and different control groups such as biological sisters or women whose children died.[14,47,48]

Strengths and limitations

This is one of the first UK studies to describe maternal mental health service use among women involved in care proceedings, focused on England. Though the SLaM population may vary in terms of population demographics and service availability from other parts of the UK - potentially affecting the generalisability of these findings - we found similarly high rates of mental health need among women in proceedings as were found in Wales.[20] Another key strength of this study is the use of novel linked administrative data between public family law and mental health records.[25] Analyses of routinely collected data offers unique insight into individual-level health service patterns for vulnerable mothers and mitigates common challenges with longitudinal research, such as recruitment bias, self-reporting and attrition.[34,49] However, as data in Cafcass and CRIS are primarily collected for administrative purposes and not research, this study is limited by the scope and quality of available data.

Firstly, it is unclear in these data whether a lack of diagnosis is indicative of no mental health service need or due to missing data from lack of contact or poor recording. It is also possible that clinicians are more reluctant to diagnose patients with complex and stigmatising conditions, such as personality disorders,[50] making missing data more likely. Additionally, this study is limited in understanding the context of SLaM clinical care, such as reasons for rejected referrals and patient disengagement. It is also difficult to calculate individual waiting times between referral, assessment, and treatment for women in these data.

Data on how women interact with wider health services, including A&E attendances and other hospital admissions from local, non-SLaM hospitals, are not available in this study. Many women may have mental health problems that can be adequately treated by their GP and so it is likely that we underestimate mental health need in this study. Mental health records do not consistently capture physical health issues, or characteristics that impact on health, including domestic violence, and are limited in their ability to investigate mortality, with no cause of death available. It should be acknowledged that it is not possible to identify births in CRIS, and therefore we were unable to match controls on maternal status or compare levels of perinatal service use between cohorts. Hospital maternity indicators would also allow further investigation into differences in mortality rates, which may be partly explained by motherhood status. Furthermore, due to changes in substance misuse service provision within SLaM local authorities across the course of the study, it is likely that rates of substance misuse are underestimated.

Finally, not all children enter care via public family law proceedings, and so these data do not capture those that enter via out-of-court arrangements between local authorities and carers pursuant to section 20 of the Children Act 1989 (around 50%) or those under police protection or via youth justice legal orders.[51] However, three-quarters of children in care at any one time are under a care or placement order, suggesting many children entering care via other routes go on to have care proceedings.[52]

Implications for research

Further research is needed to understand how women use healthcare before, during and after care proceedings. Evidence on how and when women come into contact with specialist mental health and substance misuse services is needed to inform service planning and to help tailor support for vulnerable mothers at risk of social care intervention. Better profiling of clinical symptoms and need would help identify those at risk, including first-time mothers and vulnerable pregnant women. In addition, understanding the barriers and enablers for women accessing and engaging with mental health services should be a research priority, especially around pregnancy and childbirth. Around half of the study cohort had an infant involved in care proceedings,[25] which raises questions around the role of perinatal specialist teams before and after social care involvement. Furthermore, people with mental health problems are more likely to have physical health problems.[53] More research is needed on the life-long health needs of birth mothers involved in care proceedings, including health factors contributing to increased mortality rates. Future linkages with other health datasets, including Hospital Episodes Statistics (HES), will be essential to understanding how these women interact with healthcare more widely.

Implications for policy and practice

Our findings support recent work from Wales in strongly making the case for placing maternal mental health central in children's social care and family court practice. In both South London and Wales, large numbers of women in care proceedings pre-existing mental health or substance misuse need. and we have shown that these needs are wide ranging and often complex.[20,21] A key question is therefore whether adult mental health specialists should be better integrated into children's social care.[54] Timely access to mental health services for women at risk of care proceedings would likely reduce the need for proceedings and improve outcomes for women and their families. The threshold for accessing specialist mental health support is high and more effort should be made to accelerate access for parents at risk of social care intervention. Current services available to mothers, such as specialist perinatal services, can be small and oversubscribed,[55] as well as limited to women who retain care of their child.

Services targeted to this group should be able to respond to complex and acute mental health need, as well as common mental health disorders and substance misuse issues.[56] Women involved in care proceedings demonstrate higher rates of non-engagement with services, highlighting a need for flexible and relationship-based approaches. Furthermore, given the high rates of domestic violence and other forms of gender-based violence, services must be trauma-informed.[23] In recognising the complexity of need, services need to be multi-disciplinary and work across long-term physical and mental health problems. Current commissioning of substance misuse services in South London from non-SLAM providers has contributed to poorly integrated care models within SLAM, and more is needed to be done to optimise collaboration between specialist services.[57] Finally, mental health services should consider how to meaningfully engage women involved in care proceedings, including those facing additional barriers such as criminal justice involvement.

Conclusions

To conclude, there are high rates of mental health problems and substance misuse issues, as well as increased risk of death, among women whose children enter care. Joint family law, social care and health policy is needed to ensure appropriate and effective treatment for women involved in care proceedings.

Bibliography

1. Griffiths LJ, Johnson RD, Broadhurst K, Cusworth L, Bedston S, Jones K, et al. Born into care: One thousand mothers in care proceedings in Wales. 2020. Available: https://www.nuffieldfjo.org.uk/app/nuffield/files-module/local/documents/1000_mothers_report_english.pdf
2. Broadhurst K, Mason C, Bedston S, Alrouh B, Morriss L, McQuarrie T, et al. Vulnerable Birth Mothers and Recurrent Care Proceedings. 2017. Available: https://www.nuffieldfoundation.org/sites/default/files/files/rc-final-summary-report-v1_6.pdf
3. Harwin J, Alrouh B, Ryan M, Tunnard J. Changing Lifestyles, Keeping Children Safe: an evaluation of the first Family Drug and Alcohol Court (FDAC) in care proceedings. 2014. Available: https://www.brunel.ac.uk/__data/assets/pdf_file/0007/366370/FDAC_May2014_FinalReport_V2.pdf
4. Masson J, Pearce J, Bader K, Bader K, Marsden J, Westlake D. Care profiling study. Minist Justice Rsearch Ser 4/08. 2008.
5. Stith SM, Liu T, Davies LC, Boykin EL, Alder MC, Harris JM, et al. Risk factors in child maltreatment: A meta-analytic review of the literature. *Aggression and Violent Behavior*. 2009. doi:10.1016/j.avb.2006.03.006
6. Mulder TM, Kuiper KC, van der Put CE, Stams G-JJM, Assink M. Risk factors for child neglect: A meta-analytic review. *Child Abuse Negl*. 2018;77: 198–210. doi:<https://doi.org/10.1016/j.chiabu.2018.01.006>
7. O'Donnell M, Maclean MJ, Sims S, Morgan VA, Leonard H, Stanley FJ. Maternal mental health and risk of child protection involvement: Mental health diagnoses associated with increased risk. *J Epidemiol Community Health*. 2015. doi:10.1136/jech-2014-205240
8. Hammond I, Eastman AL, Leventhal JM, Putnam-Hornstein E. Maternal mental health disorders and reports to child protective services: A birth cohort study. *Int J Environ Res Public Health*. 2017. doi:10.3390/ijerph14111320
9. Brandon M, Sidebotham P, Belderson P, Cleaver H, Dickens J, Garstang J, et al. Complexity and challenge: a triennial analysis of SCRs 2014-2017. London; 2020. Available: <https://www.gov.uk/government/publications/analysis-of-serious-case-reviews-2014-to-2017>
10. Pierce M, Hope HF, Kolade A, Gellatly J, Osam CS, Perchard R, et al. Effects of parental mental illness on children's physical health: Systematic review and meta-analysis. *British Journal of Psychiatry*. 2020. doi:10.1192/bjp.2019.216
11. Nevriana A, Pierce M, Dalman C, Wicks S, Hasselberg M, Hope H, et al. Association between maternal and paternal mental illness and risk of injuries in children and adolescents: nationwide register based cohort study in Sweden. *BMJ*. 2020. doi:10.1136/bmj.m853
12. Pierce M, Abel KM, Muwonge J, Wicks S, Nevriana A, Hope H, et al. Prevalence of parental mental illness and association with socioeconomic adversity among children in Sweden between 2006 and 2016: a population-based cohort study. *Lancet Public Heal*. 2020. doi:10.1016/S2468-2667(20)30202-4
13. Canfield M, Radcliffe P, Marlow S, Boreham M, Gilchrist G. Maternal substance use and child protection: a rapid evidence assessment of factors associated with loss of child care. *Child*

- 648 Abus Negl. 2017;70: 11–27. doi:10.1016/j.chiabu.2017.05.005
- 649 14. Wall-Wieler E, Vinnerljung B, Liu C, Roos LL, Hjern A. Avoidable mortality among parents
650 whose children were placed in care in Sweden: A population-based study. *J Epidemiol*
651 *Community Health*. 2018. doi:10.1136/jech-2018-210672
- 652 15. Orr C, Fisher C, Sims S, Preen D, Glauert R, O'Donnell M. Hospitalisations for maternal assault
653 are associated with increased risk of child protection involvement. *Child Abus Negl*. 2019.
654 doi:10.1016/j.chiabu.2019.05.007
- 655 16. Prindle JJ, Hammond I, Putnam-Hornstein E. Prenatal substance exposure diagnosed at birth
656 and infant involvement with child protective services. *Child Abus Negl*. 2018;76: 75–83.
657 doi:10.1016/j.chiabu.2017.10.002
- 658 17. Ubbesen MB, Petersen L, Mortensen PB, Kristensen OS. Temporal stability of entries and
659 predictors for entry into out-of-home care before the third birthday: A Danish population-
660 based study of entries from 1981 to 2008. *Child Youth Serv Rev*. 2013.
661 doi:10.1016/j.childyouth.2013.05.020
- 662 18. Johnson RD, Ford D V, Broadhurst K, Cusworth L, Jones K, Akbari A, et al. Data Resource:
663 population level family justice administrative data with opportunities for data linkage. *Int J*
664 *Popul Data Sci*. 2020. doi:10.23889/ijpds.v5i1.1339
- 665 19. Pilkington R, Montgomerie A, Grant J, Giialamas A, Malvaso C, Smithers L, et al. An innovative
666 linked data platform to improve the wellbeing of children— the South Australian Early
667 Childhood Data Project. Canberra; 2019. Available:
668 [https://www.aihw.gov.au/getmedia/75c9f692-c72c-438d-b68b-91318f780154/Australias-](https://www.aihw.gov.au/getmedia/75c9f692-c72c-438d-b68b-91318f780154/Australias-Welfare-Chapter-8-summary-18Sept2019.pdf.aspx)
669 [Welfare-Chapter-8-summary-18Sept2019.pdf.aspx](https://www.aihw.gov.au/getmedia/75c9f692-c72c-438d-b68b-91318f780154/Australias-Welfare-Chapter-8-summary-18Sept2019.pdf.aspx)
- 670 20. Griffiths LJ, Johnson RD, Broadhurst K, Bedston S, Cusworth L, Alrouh B, et al. Maternal
671 health, pregnancy and birth outcomes for women involved in care proceedings in Wales: a
672 linked data study. *BMC Pregnancy Childbirth*. 2020;20: 697. doi:10.1186/s12884-020-03370-4
- 673 21. Griffiths LJ, Johnson RD, Broadhurst K, John A. Born into care: One thousand mothers in care
674 proceedings in Wales. A focus on maternal mental health. London; 2021. Available:
675 <https://www.nuffieldfjo.org.uk/resource/born-into-care-maternal-mental-health>
- 676 22. Jay MA, Woodman J, Broadhurst K, Gilbert R. Who cares for children? Population data for
677 family justice research. 2017. Available: [http://wp.lancs.ac.uk/observatory-scoping-](http://wp.lancs.ac.uk/observatory-scoping-study/files/2017/10/FJO-NATIONAL-DATA-SCOPING-FINAL.pdf)
678 [study/files/2017/10/FJO-NATIONAL-DATA-SCOPING-FINAL.pdf](http://wp.lancs.ac.uk/observatory-scoping-study/files/2017/10/FJO-NATIONAL-DATA-SCOPING-FINAL.pdf)
- 679 23. Family Rights Group. Care Crisis Review: options for change. London; 2018. Available:
680 https://www.frg.org.uk/images/Care_Crisis/CCR-FINAL.pdf
- 681 24. Office for National Statistics. Estimates of the population for the UK, England and Wales,
682 Scotland and Northern Ireland. Office for National Statistics;
- 683 25. Pearson R, Jewell A, Wijlaars L, Bedston S, Finch E, Broadhurst K, et al. Linking data on women
684 in public family law court proceedings concerning their children to mental health service
685 records in South London. *Int J Popul Data Sci*. 2021;6. doi:10.23889/ijpds.v6i1.1385
- 686 26. NHS England. How to access mental health services. 2019 [cited 4 Feb 2021]. Available:
687 [https://www.nhs.uk/using-the-nhs/nhs-services/mental-health-services/how-to-access-](https://www.nhs.uk/using-the-nhs/nhs-services/mental-health-services/how-to-access-mental-health-services)
688 [mental-health-services](https://www.nhs.uk/using-the-nhs/nhs-services/mental-health-services/how-to-access-mental-health-services)
- 689 27. Bedston SJ, Pearson RJ, Jay MA, Broadhurst K, Gilbert R, Wijlaars L. Data Resource: Children
690 and Family Court Advisory and Support Service (Cafcass) public family law administrative

- records in England. Int J Popul Data Sci. 2020;5. doi:10.23889/ijpds.v5i1.1159
28. Office for National Statistics. Vital statistics in the UK: births, deaths and marriages. 2019 [cited 2 Jun 2020]. Available: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/vitalstatisticspopulationandhealthreferencetables>
29. Broadhurst K, Mason C. Maternal outcasts: Raising the profile of women who are vulnerable to successive, compulsory removals of their children - a plea for preventative action. J Soc Welf Fam Law. 2013. doi:10.1080/09649069.2013.805061
30. Broadhurst K, Mason C. Child removal as the gateway to further adversity: Birth mother accounts of the immediate and enduring collateral consequences of child removal. Qual Soc Work. 2020;19: 15–37. doi:10.1177/1473325019893412
31. Broadhurst K, Mason C. Birth Parents and the Collateral Consequences of Court-ordered Child Removal: Towards a Comprehensive Framework. Int J Law, Policy Fam. 2017;31: 41–59. doi:10.1093/lawfam/ebw013
32. Grant T, Huggins J, Graham JC, Ernst C, Whitney N, Wilson D. Maternal substance abuse and disrupted parenting: Distinguishing mothers who keep their children from those who do not. Child Youth Serv Rev. 2011. doi:10.1016/j.chilgyouth.2011.07.001
33. The National Collaborating Centre for Mental Health. The Improving Access to Psychological Therapies Manual. 2019. Available: <https://www.england.nhs.uk/publication/the-improving-access-to-psychological-therapies-manual/>
34. Perera G, Broadbent M, Callard F, Chang CK, Downs J, Dutta R, et al. Cohort profile of the South London and Maudsley NHS Foundation Trust Biomedical Research Centre (SLaM BRC) Case Register: Current status and recent enhancement of an Electronic Mental Health Record-derived data resource. BMJ Open. 2016. doi:10.1136/bmjopen-2015-008721
35. Stewart R, Soremekun M, Perera G, Broadbent M, Callard F, Denis M, et al. The South London and Maudsley NHS Foundation Trust Biomedical Research Centre (SLAM BRC) case register: Development and descriptive data. BMC Psychiatry. 2009. doi:10.1186/1471-244X-9-51
36. Kelman CW, Bass AJ, Holman CDJ. Research use of linked health data - A best practice protocol. Aust N Z J Public Health. 2002. doi:10.1111/j.1467-842X.2002.tb00682.x
37. Broadhurst K, Alrouh B, Mason C, Ward H, Holmes L, Ryan M, et al. Born into Care: newborn babies subject to care proceedings in England. London; 2018. Available: [https://www.nuffieldfjo.org.uk/app/nuffield/files-module/local/documents/Born into Care_Final Report_10 Oct 2018.pdf](https://www.nuffieldfjo.org.uk/app/nuffield/files-module/local/documents/Born%20into%20Care_Final%20Report_10%20Oct%202018.pdf)
38. Alrouh B, Broadhurst K, Cusworth L, Griffiths L, Johnson RD, Akbari A, et al. Born into care: newborns and infants in care proceedings in Wales. 2019. Available: <https://www.nuffieldfjo.org.uk/resource/born-into-care-wales>
39. Mental Health Act 1983, c. 20. UK; [cited 19 Nov 2020]. Available: <https://www.legislation.gov.uk/ukpga/1983/20/contents>
40. World Health Organisation, World Health Organization. International Statistical Classification of Diseases and Related Health Problems - 10th Revision. © World Heal Organ 2011. Geneva; 2011.
41. Pearson RJ, Jay MA, Wijlaars LPMM, De Stavola B, Syed S, Bedston SJ, et al. Association between health indicators of maternal adversity and the rate of infant entry to local authority

- 734 care in England: a longitudinal ecological study. *BMJ Open*. 2020;10. doi:10.1136/bmjopen-
735 2019-036564
- 736 42. Lin E, Balogh R, Cobigo V, Ouellette-Kuntz H, Wilton AS, Lunskey Y. Using administrative health
737 data to identify individuals with intellectual and developmental disabilities: A comparison of
738 algorithms. *J Intellect Disabil Res*. 2013. doi:10.1111/jir.12002
- 739 43. Therneau TM. survival: A Package for Survival Analysis in R. R Packag version 238. 2020.
- 740 44. The health needs of mothers and children in family court cases. In: Nuffield Foundation
741 [Internet]. [cited 19 Nov 2020]. Available: [https://www.nuffieldfoundation.org/project/the-](https://www.nuffieldfoundation.org/project/the-health-needs-of-mothers-and-children-in-family-court-cases)
742 [health-needs-of-mothers-and-children-in-family-court-cases](https://www.nuffieldfoundation.org/project/the-health-needs-of-mothers-and-children-in-family-court-cases)
- 743 45. Boddy J, Bowyer S, Godar R, Hale C, Kearney H, Preston O, et al. Evaluation of Pause. 2020.
744 Available:
745 [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_d](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/932816/Pause_-_Sussex.pdf)
746 [ata/file/932816/Pause_-_Sussex.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/932816/Pause_-_Sussex.pdf)
- 747 46. Jewell A, Pritchard M, Barrett K, Green P, Markham S, McKenzie S, et al. The Maudsley
748 Biomedical Research Centre (BRC) data linkage service user and carer advisory group:
749 creating and sustaining a successful patient and public involvement group to guide research
750 in a complex area. *Res Involv Engagem*. 2019;5: 20. doi:10.1186/s40900-019-0152-4
- 751 47. Wall-Wieler E, Roos LL, Nickel NC, Chateau D, Brownell M. Mortality among Mothers Whose
752 Children Were Taken into Care by Child Protection Services: A Discordant Sibling Analysis. *Am*
753 *J Epidemiol*. 2018. doi:10.1093/aje/kwy062
- 754 48. Wall-Wieler E, Roos LL, Bolton J, Brownell M, Nickel N, Chateau D. Maternal Mental Health
755 after Custody Loss and Death of a Child: A Retrospective Cohort Study Using Linkable
756 Administrative Data. *Can J Psychiatry*. 2018. doi:10.1177/0706743717738494
- 757 49. Bedston S, Pearson R, Jay MA, Broadhurst K, Gilbert R, Wijlaars L. Data Resource: Children
758 and Family Court Advisory and Support Service (Cafcass) public family law administrative
759 records in England. *Int J Popul Data Sci*. 2020;5. doi:10.23889/ijpds.v5i1.1159
- 760 50. Campbell K, Clarke K, Massey D, Lakeman R. Borderline Personality Disorder: To diagnose or
761 not to diagnose? That is the question. *Int J Ment Health Nurs*. 2020;29: 972–981.
762 doi:10.1111/inm.12737
- 763 51. UK Government. Children Act 1989. England & Wales; 1989. Available:
764 <http://www.legislation.gov.uk/ukpga/1989/41>
- 765 52. Department for Education. Statistics: looked-after children. 2019 [cited 26 Sep 2019].
766 Available: <https://www.gov.uk/government/collections/statistics-looked-after-children>
- 767 53. Firth J, Siddiqi N, Koyanagi A, Siskind D, Rosenbaum S, Galletly C, et al. The Lancet Psychiatry
768 Commission: a blueprint for protecting physical health in people with mental illness. *The*
769 *Lancet Psychiatry*. 2019. doi:10.1016/S2215-0366(19)30132-4
- 770 54. Webb R, Uddin N, Ford E, Easter A, Shakespeare J, Roberts N, et al. Barriers and Facilitators to
771 Implementing Perinatal Mental Health Care in Health and Social Care Settings: A Systematic
772 Review. *ResearchGate*; 2020. Available:
773 [https://www.researchgate.net/publication/342354548_Barriers_and_Facilitators_to_Implem](https://www.researchgate.net/publication/342354548_Barriers_and_Facilitators_to_Implementing_Perinatal_Mental_Health_Care_in_the_NHS_and_other_Health_and_Social_Care_Settings_A_Systematic_Review)
774 [enting_Perinatal_Mental_Health_Care_in_the_NHS_and_other_Health_and_Social_Care_Set](https://www.researchgate.net/publication/342354548_Barriers_and_Facilitators_to_Implementing_Perinatal_Mental_Health_Care_in_the_NHS_and_other_Health_and_Social_Care_Settings_A_Systematic_Review)
775 [tings_A_Systematic_Review](https://www.researchgate.net/publication/342354548_Barriers_and_Facilitators_to_Implementing_Perinatal_Mental_Health_Care_in_the_NHS_and_other_Health_and_Social_Care_Settings_A_Systematic_Review)
- 776 55. Smith MS, Lawrence V, Sadler E, Easter A. Barriers to accessing mental health services for

- women with perinatal mental illness: Systematic review and meta-synthesis of qualitative studies in the UK. *BMJ Open*. 2019. doi:10.1136/bmjopen-2018-024803
56. Public Health England. Better care for people with co-occurring mental health and alcohol/drug use conditions - A guide for commissioners and service providers. London; 2017. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/625809/Co-occurring_mental_health_and_alcohol_drug_use_conditions.pdf
57. ACMD Recovery Committee. Commissioning impact on drug treatment. 2017. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/642811/Final_Commissioning_report_5.15_6th_Sept.pdf

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Mental health service use among mothers involved in public family law proceedings: linked data cohort study in South London 2007-2019.

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Figure S1: Coverage of the data used in this study

Table S1: Distribution of the matching variable among women using SLAM hospital psychiatric service, IAPT, or both in the two study cohorts

Matching variables	Frequency (%) or Median [25%, 75% quantile] among women using SLaM services	
	Women in care proceedings (n = 2137)	Matched controls (n = 17,096)
Electronic patient record system		
ePJS record only	922 (43.1)	7376 (43.1)
IAPT record only	189 (8.8)	1512 (8.8)
Both	1026 (48.0)	8208 (48.0)
Follow-up time		
Time from first SLaM contact to end of study (31 st March 2020) or death	10.63 [7.01, 13.19]	10.59 [6.99, 13.16]

Table S2: SLaM referrals, discharges, and outpatient attendances over follow-up among the care proceedings cohort (n = 2137) and the matched controls (n = 17,096)

Characteristics of service use from 1 st Jan 2005 to 31 st March 2020)	Frequency (%) or Median [25%, 75% quantile] among women using SLaM services	
	Women in care proceedings (n = 2137)	Matched controls (n = 17,096)
Referrals and discharges		
Any accepted referrals	2041 (95.5)	16274 (95.6)
Median number of accepted referrals per woman	3.00 [2.00, 6.00]	2.00 [1.00, 4.00]
Any rejected referrals	871 (40.8)	5123 (30.3)
Ever discharged from an active referral due to failure to engage	1236 (57.8)	7459 (44.7)
Outpatient attendances		
Any SLaM outpatient attendance	2050 (95.9)	16606 (97.1)
Median number of attendances per woman	25.00 [7.00, 91.00]	16.0 [5.00, 46.00]
Median percentage of planned attendance that were not attended or cancelled by the patient per woman	20% [11%, 33%]	16% [4%, 30%]

Figure S2: Timing of diagnoses relative to women's index set of care proceedings among women in the care proceedings cohort with a diagnosis before 31st March 2020 (n = 1747 out of 2137, 82%), by diagnosis type

The 'Other mental health disorders' and 'Disorders of psychological development or with onset usually occurring in childhood/adolescence' categories could not be shown due to small cell counts (< 10)

Figure S3: Women with multiple diagnoses among women in the care proceedings cohort (n = 2137) and the matched controls (n = 17,096)

• Includes anxiety disorders, other depressive disorders, personality disorders, disorders of psychological development or with onset usually occurring in childhood/adolescence, unspecified mental health disorders and diagnoses in the 'Other mental health disorders' category.

Figure S4: Checking for non-linear effect of age at first SLaM contact on mortality up to 31st March 2020 among women in the care proceedings cohort (n = 2137) and the matched controls (n = 17,096)

A likelihood ratio test between the model with age as a quadratic effect and age as a linear effect showed no evidence of a non-linear relationship between death over follow-up and age at first SLaM contact.

Figure S5: dfbeta values plot for model covariates (age at first SLaM contact – left) ; membership of the care proceedings cohort – right) in the cox model investigating hazard of mortality up to 31st March 2020 among women in the care proceedings cohort (n = 2137) and the matched controls (n = 17,096)

Figure S6: Schoenfeld residuals plot for model covariates (membership of the care proceedings cohort – top; age at first SLaM contact – bottom) in the cox model investigating hazard of mortality up to 31st March 2020 among women in the care proceedings cohort (n = 2137) and the matched controls (n = 17,096)

Table S3: Estimated 5 and 10-year mortality rates among the care proceedings cohort (n = 2137) and the matched controls (n = 17,096) for women aged 21, 28, and 36 years old at first SLaM contact

Time since first SLaM contact (years)	Age at first SLaM contact	Estimated mortality rate	
		Care proceedings cohort	Matched controls
5	21 years	0.73% (0.56 to 0.97)	0.34% (0.28 to 0.42)
5	28 years	1.29% (0.99 to 1.66)	0.60% (0.51 to 0.71)
5	36 years	2.43% (1.90 to 3.12)	1.14% (0.99 to 1.31)
10	21 years	1.79% (1.39 to 2.30)	0.84% (0.70 to 1.01)
10	28 years	3.12% (2.47 to 3.94)	1.46% (1.27 to 1.68)
10	36 years	5.85% (4.67 to 7.32)	2.77% (2.50 to 3.07)

*the ages 21, 28 and 36 are the 25%, 50% (median) and 75% quantiles of age at first SLaM contact among the care proceedings cohort.