# Report 3

## Reducing Inequalities in Perinatal Mental Health Care

## Exploration of inequalities in identification and treatment of perinatal mental health concerns: A description of key similarities and differences across the West Yorkshire region

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*This report is the third of five reports produced as a programme of research to understand the inequalities in identification and treatment of perinatal mental health in order to develop recommendations and adaptations to systems to address these inequalities. This research was led by Born in Bradford and the Universities of York and Huddersfield and funded by Wakefield CCGs on behalf of West Yorkshire Health and Care Partnership, in collaboration with the Perinatal Mental Health Steering Group.*

**Approved by:**

| Name | Version no. | Date |
|---|---|---|
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# Contents

# Executive summary

The aim of this report was to explore inequalities in identification and treatment of perinatal mental health (PMH) concerns and describe the differences across the West Yorkshire Health and Care Partnership (WYHCP) NHS services.

Data available from both the Maternity Services Data Set (MSDS) and directly from local electronic health records is unreliable and are often in conflict. Issues identified limit what can be known in terms of prevalence and the extent of inequalities such as those for ethnic minority women, women with little or no English language and women from particularly high or low levels of deprivation (per Indices of Multiple Deprivation (IMD) 2015 (GOV.UK National Statistics, 2015)).

Information obtained from specialist PMH services hosted by Bradford District Care NHS Foundation Trust (BDCFT), Leeds and York Partnership NHS Foundation Trust (LYPFT) and South West Yorkshire Partnership NHS Foundation Trust (SWYPFT), indicates that approximately 7% of WYHCP women were referred to receive specialist PMH support, and 5% were offered support. The level of need identified using the BiBBS cohort (Dickerson et al., 2016), representing a subset of the Bradford population, is substantially higher: through completion of the PHQ-8 (Kroenke et al., 2009) for research purposes, 32% of women disclose at least mild symptoms of depression and 14% disclose clinically important symptoms (scoring in the range classified as moderate or greater). BiBBS data revealed that while women with more severe symptoms are most frequently identified by healthcare professionals (within maternity, health visiting or general practice), a substantial proportion of those women do not have coded indication of poor mental health in the electronic health record. This means either that women are not identified by healthcare professionals, or that data are not captured in an accessible format – both scenarios result in a partial view of prevalence and an under-estimation of the issue.

The MSDS data indicates women from less deprived areas (IMD 2015) are less likely to be asked the prediction and detection 'identification' questions for poor mental health (including questions about family or personal history of poor mental health, the depression identification questions (DIQ, formerly Whooley questions; Whooley et al., 1997) and the GAD-2 scale, derived from the GAD-7 (Kroenke et al., 2007)) at the maternity booking appointment, however this pattern is only indicated when data from multiple Trusts is combined. Collation of information from Connected Bradford (Sohal et al., 2022) and directly from specialist mental health services enables exploration of deprivation in the perinatal pathway beyond the maternity booking appointment: women from the most deprived neighbourhoods (IMD 2015 deciles 1 and 2) were the least likely to receive prescription medication and attended fewer specialist PMH clinical support contacts on average.

Across the WYHCP, no ethnic differences pertaining to assessment of poor mental health using the identification questions at the maternity booking appointment were revealed (per the MSDS), though data obtained from specialist PMH services hosted by BDCFT and SWYPFT indicated that White[1] women are more likely to have mental health concerns identified and subsequently receive treatment (the same pattern was not identified in data obtained from LYPFT). These data also revealed that on average, White women wait for nine days more than women of any other ethnic group for support from LYPFT, while no difference in wait time was found between ethnic groups for

[1] Including both White British and White Other ethnic groups

women receiving support from SWYPFT. Data obtained via the BiBBS cohort provides further insight for a subset of the perinatal population in Bradford, indicating that while there is little variation in administration of mental health identification questions by ethnic group (ranging from 93-96%) at the maternity booking appointment, PMH concerns are identified most frequently in White British women; these women are also more likely to have a specialist referral and a prescription. These data suggest PMH concerns may be more prevalent amongst the White British population, however this programme of research provides a more holistic view, highlighting the danger of reliance on currently available data alone – it is not possible to conclude that women from ethnic minority groups do not experience poor PMH, only that these cases may not be identified in the electronic health record. Possible factors contributing to these patterns are identified in other elements of this programme of research.

### *Recommendations*:

1. All care providers should record key inequality data, including ethnic group and spoken English language ability, accurately and consistently with local audit to understand use of categories such as 'Not stated' or 'Unknown'. MSDS submissions should be validated against local data to ensure the national view is representative.

2. All care providers should have the ability to record electronically in a coded format, the outcomes of PMH identification questions and subsequent assessments using measures such as the PHQ-9 (Kroenke et al., 2001) and GAD-7. Information should be accessible and reportable at all time points. Following this, capture of this information should be mandatory and contributory to key performance indicators, and NHS Digital should explicitly require indication of poor mental health (i.e. the outcome of the assessment) at both the level of initial identification of concern and the outcome of further assessment in the MSDS.

3. All care providers should develop the infrastructure required to routinely monitor local prevalence of poor PMH, broken down by key risk factors for inequality.

4. Further work should be completed to understand inequalities in access to specialist PMH services by referral source and variation in wait time.

# 1. Background

Data and intelligence were gathered from perinatal services across the West Yorkshire Health and Care Partnership (WYHCP) in order to explore identification and capture of PMH difficulties by key inequalities including: ethnicity, deprivation, and English language ability. These inequalities were assessed with reference to the maternal population both at the WYHCP level, and by NHS Trust.

Datasets used for this work included:

- The Maternity Services Data Set (MSDS; routinely submitted to NHS Digital), extracted by the West Yorkshire and Harrogate LMS local maternity system (LMS) for: Airedale Foundation NHS Trust (AFT), Bradford Teaching Hospitals NHS Foundation Trust (BTHFT), Calderdale and Huddersfield NHS Foundation Trust (CHFT), Leeds Teaching Hospitals NHS Trust (LTHT) and Mid Yorkshire Hospitals NHS Trust (MYHT). Data for the year 2020 were used for review, as these were the most complete across all Trusts
- Born in Bradford's Better Start Bradford (BiBBS; Dickerson et al., 2016) birth cohort, providing in-depth assessment of mental health at 26-28 weeks gestation and longitudinal electronic health data linkage. Data for women recruited between January 2016 and December 2019 were used
- Bespoke reports created by the Leeds York Partnership NHS Foundation Trust (LYPFT), South West Yorkshire Partnership NHS Foundation Trust (SWYPFT), Bradford District Care NHS Foundation Trust (BDCFT), CHFT, LTHT, BTHFT; these included the period from April 2019 – March 2021
- Connected Bradford (Sohal et al., 2022), providing linked, routinely collected electronic data for over 700,000 individuals from the Bradford district in an anonymised database. A limited sample of perinatal women was isolated for the purpose of these analyses; women were booked for maternity care between August 2018 and July 2019, and the postnatal period therefore extended to 2020

Findings from each dataset are explored in turn and comparisons are made where appropriate.

Throughout this report, inequalities have been explored in terms of how closely the characteristics of people in a group of interest (e.g. those with poor PMH) match the population overall; this indicates how representative the group is. If people with a particular characteristic (e.g. little or no English) are more common in a group of interest than in the total population, this is reported as 'over-representation' and if less often, 'under-representation'. Inequality is not indicated if characteristics are balanced across groups (and one group is therefore representative of the other).

# 2. Maternity Service Data Set (MSDS)

## 2.1 MSDS: Maternity population profile

MSDS data provided by the West Yorkshire and Harrogate LMS in support of this work were limited to the year 2020 as data were the most comprehensive in this year for all sites across the partnership. According to the MSDS, in 2020 approximately 31,620 women were booked to receive maternity care from the five providers within the WYHCP; the number of women booked by each

provider ranged from 2060 (AFT) to 10790 (LTHT). Table 1 provides more detail. Regional variation was high both in terms of the characteristics of the population served by each Trust, and the reliability of data submitted. Other characteristics including first language (English), complex social factors (per the NICE Clinical guideline [CG110] definition: https://www.nice.org.uk/guidance/cg110), disability status, employment status and social support were explored, though concerns with reliability of data inhibit presentation at local and partnership level. Ethnicity, deprivation, and language are explored and the population of the partnership is described below.

*Table 1. Number of women comprising the booked maternity population, by provider (n, %)*

| **Provider** | **n** | **%** |
|---|---|---|
| WYHCP | 31620 | 100 |
| Airedale Foundation NHS Trust | 2060 | 7 |
| Bradford Teaching Hospitals NHS Foundation Trust | 5785 | 18 |
| Calderdale and Huddersfield NHS Foundation Trust | 5650 | 18 |
| Leeds Teaching Hospitals NHS Trust | 10790 | 34 |
| Mid Yorkshire Hospitals NHS Trust | 7340 | 23 |

## 2.2 MSDS: Time of booking

The majority of women completed a full booking assessment before 12 weeks gestation (83%, range: BTHFT, 77% – AFT, 87%), 13% completed the assessment between 12 and 26 weeks, and 4% were booked after 26 weeks. LTHT booked the greatest proportion of women after 26 weeks gestation (5%). Using the MSDS, it is not possible to account for transferred care where women may have been registered to receive care (and have had a mental health assessment) before being transferred to another hospital and having an additional booking assessment; LTHT provide a regional service and are likely to receive a greater number of transferred patients, booking at this site later in pregnancy.

## 2.3 MSDS: Ethnicity

More than half of women in receipt of maternity care from the partnership were White British (57%) and 20% were Asian or Asian British, the remaining population comprised women categorised as 'White Other', 'Black or Black British', 'Mixed ethnicity', 'Other ethnic groups' or 'Not stated' including missing information (Figure 1). Representation of women within these groups varied markedly between Trusts; AFT and MYHT reported the highest proportions of White British women (76% & 68% respectively) and BTHFT the lowest (29%). BTHFT care for the largest proportion of Asian or Asian British women (41%), while LTHT care for the smallest (14%). LTHT instead provide care for the highest proportions of Black or Black British (8%) and White Other (9%) women. Figure 2 provides insight into the ethnic breakdown by provider. The proportion of women with 'Not stated' or missing ethnicity varied across the partnership, ranging from zero (AFT) to 16% reported by BTHFT (Table 2).

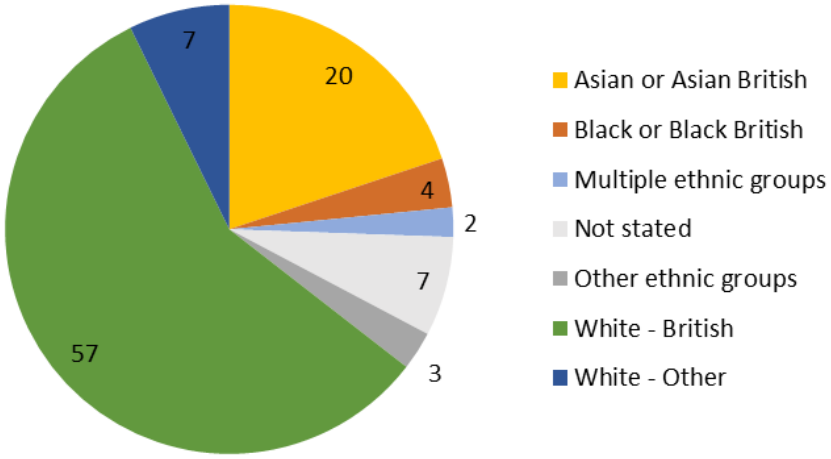



*Figure 1. Ethnic breakdown of booked maternity population across the partnership (MSDS; %)*

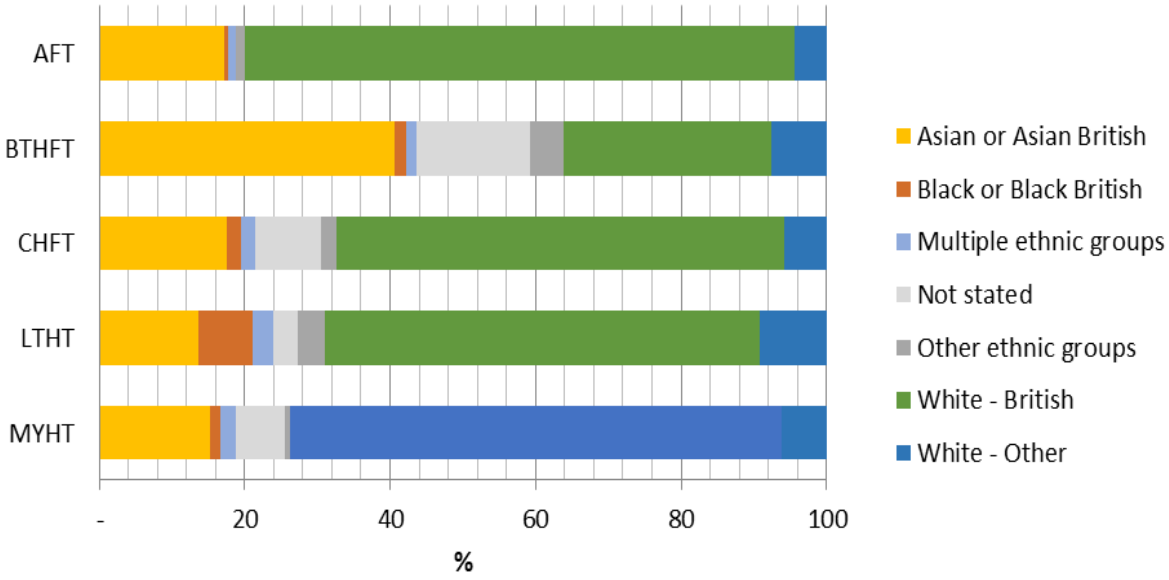



*Figure 2. Ethnic breakdown of booked maternity population by care provider (MSDS; %)*

*Table 2. Proportion of booked maternity population missing ethnicity category by provider (MSDS)*

| **Provider** | **%** |
|---|---|
| WYHCP | 7 |
| Airedale Foundation NHS Trust | 0 |
| Bradford Teaching Hospitals NHS Foundation Trust | 16 |
| Calderdale and Huddersfield NHS Foundation Trust | 9 |
| Leeds Teaching Hospitals NHS Trust | 3 |
| Mid Yorkshire Hospitals NHS Trust | 7 |

## 2.4 MSDS: Deprivation

Across the whole partnership population, almost 30% of women were registered to a home postcode in a neighbourhood in the most deprived decile in England according to the Index of Multiple Deprivation 2015 (IMD 2015; GOV.UK National Statistics, 2015), and 69% of women lived within deprivation deciles 1-5 (most deprived 50% of neighbourhoods). More than half of women in receipt of care from BTHFT (51%) and almost one third of LTHT women (31%) reside within the most deprived decile, while in AFT, CHFT and MYHT less than 20% of the population experience the same level of deprivation (Figure 3).

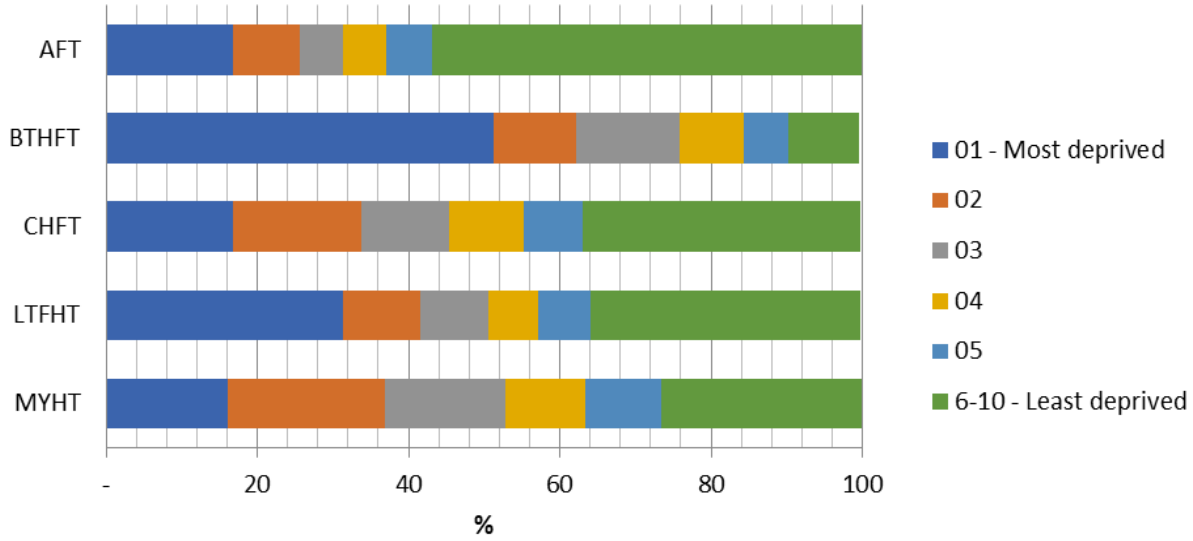



*Figure 3. Deprivation breakdown of booked maternity population by care provider (IMD 2015 decile; %)*

## 2.5 MSDS: First language English

The MSDS requires whether or not a patient's first language is English and the patient's preferred language, but not explicitly a key risk factor for inequality: spoken English language ability and/or the need for an interpreter. WYHCP language data in the MSDS were found to be unreliable when compared with information reported locally by maternity Trusts, with notable differences in the way the information is captured in the electronic health record. For example, BTHFT MSDS data indicate that only 3% of women speak English as a first language, and while the local BTHFT maternity data capture system does not have a directly equivalent field, 18% of women were considered to have some difficulty understanding spoken English in the same time period (per the bespoke BTHFT maternity report). CHFT MSDS data indicate that 100% of women speak English as a first language, while data obtained directly suggest this is true for only 86%. Exploration of other communication needs is also limited; while list items available for submission of preferred language include sign language and Makaton, this indicator provides the only reference to barriers in communication due to deafness or learning disability.

## 2.6 MSDS: Mental health identification questions

The MSDS comprises a single variable relating to mental health, completed at the antenatal booking appointment. This indicates only whether the mental health identification questions (including questions about family or personal history of poor mental health, the depression identification questions (DIQ,formerly Whooley questions; Whooley et al., 1997) and the GAD-2+1 scale) were administered at the maternity booking appointment rather than the outcome of the questions. However, collection and submission of this information from a single time-point provides an incomplete picture given that NICE guidance encourages that assessment be considered at subsequent antenatal contacts and in the early postnatal period (NICE Clinical guideline [CG192]: https://www.nice.org.uk/guidance/cg192). Additionally, the outcome of the mental health assessment is not required for completion of the national dataset, and only some Trusts capture the information electronically in coded fields which can be interrogated (i.e. with defined response options rather than a text box for comments). It is therefore not possible to understand prevalence at a national or WYHCP level from this dataset, or from bespoke local reports.

Figure 4 presents the MSDS data at organisation level within the WYHCP. When compared to locally available data, this highlighted issues with data quality and completeness, calling in to question the reliability of this indicator both locally and nationally. For example, in data obtained from the organisation directly, CHFT indicate use of the mental health identification questions with 72% of women rather than 98% per the MSDS, and LTHT report a lower proportion of women assessed in the MSDS compared with data obtained directly (90% versus 97% respectively).

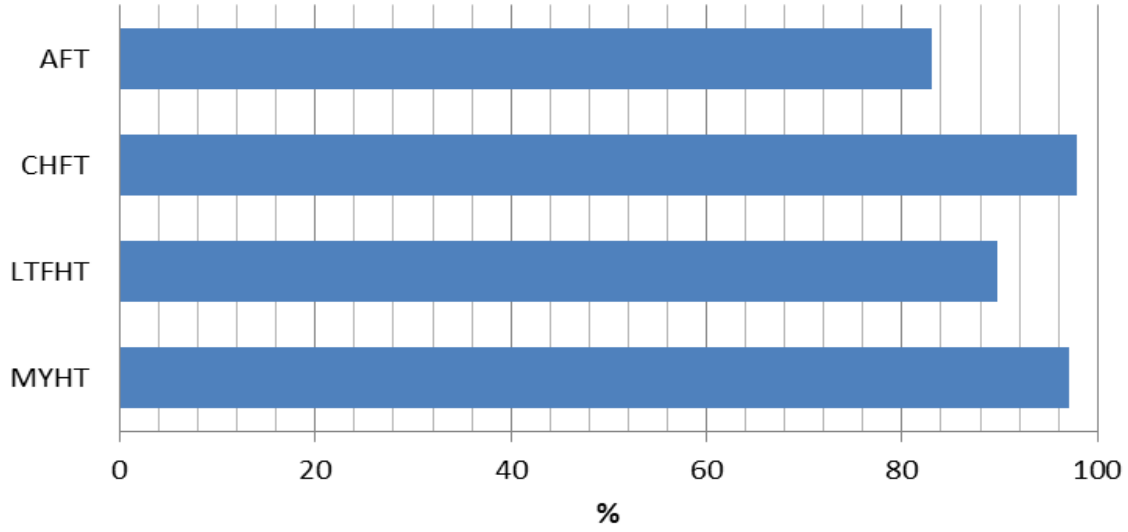



*Figure 4. Proportion of booked maternity population with mental health identification questions by provider, excluding BTHFT*

Submissions from BTHFT indicate that only 2% of women were assessed for poor mental health at the booking assessment in 2020. As a result of the implausibility of the proportion reported by BTHFT, MSDS data were excluded from analysis in this section and the term 'overall' indicates the

partnership minus BTHFT[2]. Overall, across WYHCP, 93% were reported to have been asked the identification questions, with a reported range from 83 – 98%. More work should be completed with each organisation to validate data submitted.

## 2.7 MSDS: Mental health identification questions, assessment of inequality

The timing of the booking appointment does not seem to impact the likelihood of being assessed with the identification questions at this contact; 86% of women who booked before 12 weeks gestation had this level of assessment, compared to 84% of women who booked after 12 weeks.

## 2.8 MSDS: Mental health identification questions and ethnicity

There was little variation in assessment by ethnicity with most ethnic groups ranging between 93% and 96% (Figure 5). The only notable difference was in the 'Not stated' category, but this is skewed in the WYHCP view by LTHT data where use of the identification questions was only recorded for 42% of women with 'Not stated' ethnicity. Given that 5% of women across the WYHCP fall into this category, it is important to understand under what circumstance the category is applied and acknowledge the barriers pertaining to collection of ethnicity information so that these can be overcome. See Appendix 1 for more insight into distribution of women who were assessed by ethnic group, relative to the overall proportion at each Trust.

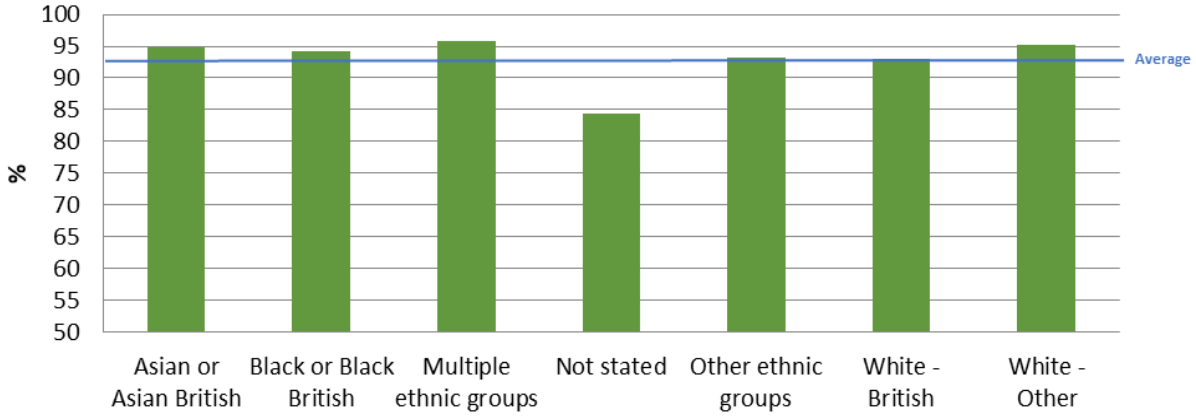



*Figure 5. Proportion of booked maternity population (WYHCP) with mental health identification questions, by ethnic group*

## 2.9 MSDS: Mental health identification questions and deprivation (IMD 2015)

There were no apparent differences in use of mental health identification questions by deprivation, with the exception of AFT which appeared to assess more women from the most deprived areas than women from the least deprived areas (IMD 2015 deciles 1-5 compared with deciles 6-10; 76% versus 90% respectively).

[2] BTHFT contribute almost 20% of women overall, with the highest proportion of non-White British women and the highest proportion of women from the most deprived decile, their exclusion here therefore skews reporting at the partnership level.

## 2.10 MSDS: Mental health identification questions, ethnicity and deprivation intersect

Data were available for assessment of interaction between ethnicity and deprivation, however small numbers within some subgroups limit the ability to make reliable comparisons and no clear patterns were found.

# 3. BiBBS Cohort

## 3.1 BiBBS cohort: prevalence of poor PMH

The BiBBS cohort provides an in-depth view of the PMH pathway experienced by women receiving BTHFT maternity care, via linkage of routinely collected data. Pregnant women are recruited explicitly from three ethnically diverse and deprived wards in Bradford, collectively known as the Better Start Bradford (BSB) areas: Bowling and Barkerend, Bradford Moor, Little Horton. A sample of 2372 pregnancy records were linked, comprising women booked by maternity and recruited to the cohort study between 2016 and 2019. This range was selected to provide the largest possible pre-pandemic dataset. Women in the cohort complete a baseline research questionnaire during pregnancy, and consent to linkage to their routine health records. BiBBS is therefore able to identify PMH concerns identified in self-reported questionnaires by the women using the PHQ-8 (Kroenke et al., 2009) and GAD-7 (Kroenke et al., 2007) scales, and in clinical records from maternity, HVs and GPs.

When women were asked about their mental health in a self-report questionnaire completed for research purposes at the point of recruitment to the cohort, most commonly at approximately 26-28 weeks gestation, 32% reported mild symptoms of depression and 14% reported clinically important symptoms (categorised as 'moderate' or severe, according to the PHQ-8). 20% of women reported mild symptoms of anxiety and 10% reported clinically important symptoms ('Moderate' or severe according to the GAD-7). The total proportion of women indicating clinically important symptoms of poor mental health on PHQ-8 and/or GAD-7 was 17%.

## 3.2 BiBBS cohort: Ethnicity

The BiBBS baseline questionnaire also provides the opportunity to explore differences by ethnic group in finer detail; 'White Other' and 'Asian or Asian British' have been refined to 'White Central/Eastern European' and 'Asian or Asian British Pakistani' respectively, as these are the predominant groups within those categories.

White British women were the most likely to report clinically important symptoms of either depression or anxiety (25%) and were over-represented in the subset of women with symptoms when compared with the total BiBBS population (25% versus 11% of total BiBBS population; Table 3); conversely, this means that women from ethnic groups other than White British disclosed symptoms less frequently and were under-represented.

## 3.3 BiBBS cohort: Migration

26% of the BiBBS population were recent migrants, having been in the UK for less than one quarter of their life at the time of recruitment to the cohort. Women in this group were under-represented amongst those reporting clinically important symptoms of depression or anxiety (20% disclosed symptoms relative to 26% in total population). This indicates that poor mental health is less prevalent in this group, or that these women are the least likely to disclose concerns.

*Table 3. Ethnic breakdown of the total BiBBS cohort population and of women disclosing clinically important symptoms of depression or anxiety (%)*

| **Ethnic group** | **BiBBS Cohort (%)** | **Clinically important symptoms (%)** |
|---|---|---|
| Total | 100 | 17 |
| Asian or Asian British Pakistani | 62 | 16 |
| Other | 23 | 16 |
| White British | 11 | 25 |
| White Central/Eastern European | 3 | 3 |
| Missing | < 1 | 8 |

## 3.4 BiBBS cohort: English spoken language ability

Women with little or no English were also under-represented in the population reporting clinically important symptoms – although 21% of the total BiBBS population reported a first language other than English, within the subset of women disclosing clinically important symptoms, only 17% recorded a first language other than English.

# 4. BiBBS cohort: Linked electronic health records

For each of the local health care providers: the BTHFT maternity service, BDCFT health visiting service, and all GP practices in Bradford, the electronic health record comprises both structured and unstructured data. The structured, coded element is accessible for data linkage within the BiBBS cohort. All coded data items or clinical terms (Read codes) pertaining to assessment and identification of PMH concerns within each service have been examined and combined to form 'composite' indicators; these bring together information from different elements of the record to provide the most complete view of PMH data capture within each service. For example, within general practice, the composite indicator includes any codes indicative of mental health discussion or assessment (e.g. 'XaLQw: Discussion about maternal wellbeing - postnatal depression'), referrals for specialist support (e.g. 'XaMhM: Referral to primary care mental health team') or diagnostic codes (e.g. 'XaCIt: Moderate depression'). Evidence of targeted assessment, intervention for a mental health concern or a diagnostic code in the maternal health record within the perinatal period was considered to be an indication of poor perinatal mental health.

Each dataset is explored using this approach in turn.

## 4.1 BiBBS cohort: Linked electronic health records – Maternity

Initial exploration of the maternity dataset used BiBBS data from 2019 alone to align most closely with the MSDS while constrained by the limits of the BiBBS dataset. This view was then extended to explore groups with small numbers.

Based on linked maternity records, in 2019 96% of BiBBS women were assessed for poor mental health using the identification questions. Drawing on previous work completed with the BTHFT maternity dataset, prevalence of mental health concerns is estimated using the composite indicator, tailored to the local maternity electronic health record. Using the same composite indicator, 8% of women were identified as having mental health concerns at the booking appointment and this increased to 10% when including data from subsequent maternity contacts.

### 4.1.1 BiBBS cohort: Linked electronic health records – Maternity, ethnicity

Of the 10% of the BiBBS cohort with indication of poor mental health in the maternity EHR, 21% were White British (relative to 11% in the total population); this means that White British women are over-represented in the subset of women with poor PMH. Pakistani women form a smaller component of the population with poor PMH than of the overall population (55% and 62% respectively), while the Other ethnic category is balanced relative to the total population. The number of women identified as White Other overall is too small to report findings.

### 4.1.2 BiBBS cohort: Linked electronic health records – Maternity, deprivation (IMD 2015)

95% of the BiBBS population live in areas ranked as the most or second most deprived nationally according to the IMD (2015). Of those with indication of poor PMH in the EHR, 91% lived in one of these areas, while 9% lived in areas of less deprivation (IMD 2015 deciles 3-10); women residing in areas considered less deprived were therefore over-represented in the population of those with indication of poor PMH. This feature is not demonstrated in BTHFT MSDS data and may result from a number of factors, for example the difference in approach to data analysis or the particular geography of the eligible population.

## 4.2 BiBBS cohort: Linked electronic health records – Health Visiting

Routine data linkage for women recruited to the BiBBS cohort enabled exploration of the role of the health visiting service in assessment and identification of poor PMH for women in Bradford.

Using the tailored composite indicator of poor PMH, health visiting data alone suggests 15% of BiBBS women experience poor mental health in the postnatal period. This is greater than the proportion identified in the maternity record (10%, above) and while comparable to the overall proportion of BiBBS women indicating clinically important symptoms according to the PHQ-8 or GAD-7 assessments completed for research (14%; page 11), only 27% of women with clinically important symptoms also had evidence of poor mental health in the structured electronic health visiting record. The difference in the timing of assessment (most commonly 26-28 weeks gestation versus 6-8 weeks postnatally) should be taken into account and more work should be done to understand experience and presentation through the period.

### 4.2.1 BiBBS cohort: Linked electronic health records – Health Visiting, ethnicity

94% of women in the BiBBS cohort were assessed by a health visitor and this proportion was maintained across all ethnic groups. However, White British women were over-represented in the subset of women identified as having mental health concerns when compared with the total health visiting population; 11% of women in the health visiting population were categorised as White British, while 16% of women identified as having mental health concerns were White British. Conversely, the proportion of women from the Other ethnic group with indication of poor mental health in their record was smaller than the total health visiting Other population: (19% with indication versus 23% overall). In contrast with findings from maternity data, the no disparity was identified for Pakistani women.

### 4.2.2 BiBBS cohort: Linked electronic health records – Health Visiting, deprivation (IMD 2015)

No differences were found for women from areas of different levels of deprivation for assessment or identification in the routine health record.

## 4.3 BiBBS cohort: Linked electronic health records – General Practice

Assessment, identification and management of poor PMH in general practice were also explored through routine data linkage for the BiBBS cohort population using a tailored composite indicator.

GP data indicates that 14% of BiBBS women were both assessed for poor PMH and identified with mental health difficulties; this suggests that formal assessment is only captured in the data system if concerns are identified. Although similar to the proportion identified within the HV service (15%, page 13), only 42% of women with indication of poor PMH in the HV record also had indication in the GP record.

11% of BiBBS women were prescribed medication associated with management of common mental disorders. Women with moderate or more severe symptoms of depression according to the PHQ-8 completed with BiBBS researchers were assessed, identified and prescribed medication more frequently than women indicating no or mild symptoms: 34% of women disclosing clinically important symptoms to researchers had record of mental health assessment during the perinatal period compared with 15% indicating no or mild symptoms, and 31% of women indicating clinically important symptoms to researchers also had indication of poor mental health in the GP record (compared with 11% with no or mild symptoms). 24% of symptomatic women were prescribed associated medication, compared with 9% of women who did not disclose the same level of symptoms to researchers. As with health visiting data, the difference in the timing of assessment by a health care professional (HCP) and via the cohort (where recruitment is most commonly at 26-28 weeks gestation, and assessment by a HCP may occur at any point in the perinatal period) should be taken into account, as women may experience or present with concerns at different time points.

This work was validated using the Connected Bradford platform, which comprises data from 86 GP practices in Bradford and provides insight into the Bradford population as a whole, as opposed to the limited view BiBBS presents (restricted to three wards); similar patterns were found across the district for each element explored: assessment, identification and prescribing.

### 4.3.1 BiBBS cohort: Linked electronic health records – General Practice, ethnicity

White British women were more likely to have evidence of assessment for poor PMH in the GP record than other ethnic groups and the difference was sustained in the subset of women with clinically important symptoms of depression (BiBBS PHQ-8). White British women were also over-represented in the group prescribed medication for mental health conditions in the perinatal period (31%) when compared with the total population (11%), and women from Pakistani and Other ethnic groups were under-represented in this sample: 49% of Pakistani and 18% of Other women with clinically important symptoms were prescribed medication (relative to total population proportions of 62% and 23% respectively; Table 3).

### 4.3.2 BiBBS cohort: Linked electronic health records – General Practice, deprivation (IMD 2015)

Women from the two most deprived IMD deciles were prescribed medication for mental health conditions in the perinatal period less frequently than women from neighbourhoods with any other classification of deprivation. This is consistent with the findings from linkage to the maternity EHR (section 4.1.2).

## 4.4 PMH data from other WYHCP areas

It was not possible to access data from other organisations at a sufficient level to create a similar representation of poor mental health as provided by the BiBBS cohort, though LTHT were able to provide completion rates of the PHQ-9 (Kroenke et al., 2001) and GAD-7 scales from local maternity booking appointment data. Completion of the PHQ-9 at LTHT indicates that identification questions revealed mental health concerns and therefore required further investigation; this was true for 11% of the booked maternity population. LTHT data suggested that the same number of women completed the GAD-7 as were assessed with the DIQ, reinforcing the need to fully understand data capture processes for each indicator on a site-by-site basis. Scores from these scales were not accessible, so the level of mental health concern identified by LTHT was not explored.

# 5. Specialist perinatal mental health (PMH) services

## 5.1 Specialist PMH services: Referrals

Data were obtained from the Bradford District Care NHS Foundation Trust (BDCFT) Specialist Mother and Baby Service, the Leeds York Partnership NHS Foundation Trust (LYPFT) PMH Service and the South West Yorkshire Partnership NHS Foundation Trust (SWYPFT) PMH Teams. Population characteristics of women in receipt of referral to and support from these specialist mental health services were compared with those explored via the MSDS. Maternity Trusts have been combined where multiple Trusts feed into a single specialist service.

Between April 2019 and February 2021, almost 54,000 women were booked to receive maternity care from a provider within the partnership. Approximately 7% of women were referred to one of the featured specialist PMH services, 5% were offered at least one supportive contact and 2% received more than three supportive contacts, indicating they were engaged with the service (conversely, 3% were not).

Referral source data were available from LYPFT and SWYPFT, providing insight into identification of need within universal services. While the distribution of referrals from maternity services is similar between specialist services, more Leeds Community Healthcare Trust health visitors by proportion made a referral to the LYPFT PMH service than general practitioners in the same area. Health visiting was also a more common referral source for LYPFT than for SWYPFT (27% versus 19%; Figure 6). Other referral sources included: A&E and other acute care services, the single point of access (SPA) service, other mental health services including IAPT and CAMHS, internal hospital wards and departments, social care professionals and colleagues from the police and housing sectors. No VCSO organisations were identified explicitly, indicating either a gap in data, or in referral processes.

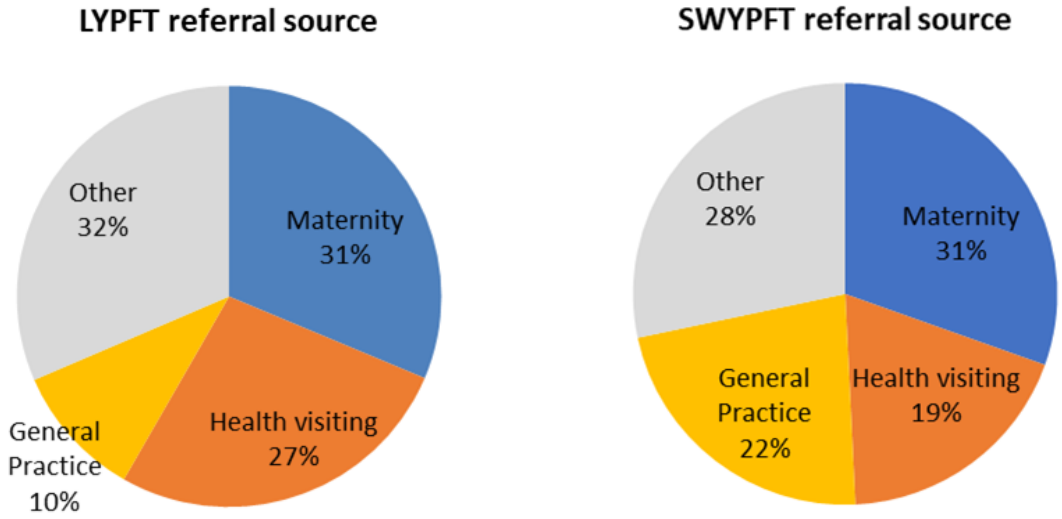



*Figure 6. Referrals to specialist mental health services by source (%)*

## 5.2 Specialist PMH services: Ethnicity

Ethnicity data from specialist PMH services (BDCFT, SWYPFT, LYPFT) was provided in two categories to ensure suppression of small numbers: 'White', including White British and White Other, and 'Other ethnic groups', including all groups not categorised as 'White'.

Inequalities by ethnic group are indicated in Figure 7. Deviation from the proportions of White and 'Other ethnic group' women in the total maternity booking population indicates variation in the offer and access of targeted support in the perinatal period.

BDCFT and SWYPFT were more likely to receive referrals, offer support and provide more than three contacts to women categorised as White: the BTHFT maternity booking population comprised 57% White women, and 65% of in receipt of more than three BDCFT contacts were White; the combined CHFT & MYHFT maternity booking populations comprised 75% White women, and 86% of women in receipt of more than three SWYPFT contacts were White. LYPFT data indicated the opposite pattern: 30% of women booked by the LTHT maternity service were categorised as 'Other ethnic group' and this group was over-represented in the population receiving more than 3 support contacts (37%). This is consistent with the indication that women not categorised as White were most likely to be assessed for mental health concerns at the maternity booking appointment in LTHT.

Data from LYPFT and SWYPFT allowed exploration of waiting times between referral acceptance and the first clinical support contact. On average, White women wait for nine days more than women of any other ethnic group for support from LYPFT, while no difference was found between ethnic groups for women receiving support from SWYPFT. LYPFT and SWYPFT provided a similar number of clinical support contacts on average, and no difference was found between ethnic groups supported by either service.

## 5.3 Specialist PMH services: Deprivation (IMD 2015)

Women living in neighbourhoods associated with the two most deprived IMD 2015 deciles (1 and 2) were compared with women from all other neighbourhoods in the related area (Figure 8). Women living in the most deprived deciles were over-represented in the SWYPFT and LYPFT specialist referral populations (35% booked by CHFT & MYHT versus 44% referred to SWYPFT, and 41% booked by LTHT versus 47% referred to LYPFT), though this difference did not persist to receipt of specialist support. It is not known whether these patterns are indicative of real differences in identification of women with mental health concerns by IMD and the possible reasons should be explored following review of a larger dataset to ensure the difference is sustained. No difference was present between the combined AFT/BTHFT maternity booking population and the BDCFT specialist referral population.

Average waiting times and the number of clinical support contacts were also explored by IMD decile for LYPFT and SWYPFT. While women residing in areas associated with IMD deciles 1 and 2 received eight support contacts on average from both services compared with ten contacts for women in all other IMD deciles, a mean difference of 6 days was found between women in the most deprived two deciles and women from any other area, where more deprived women waited for a shorter period for care from LYPFT.

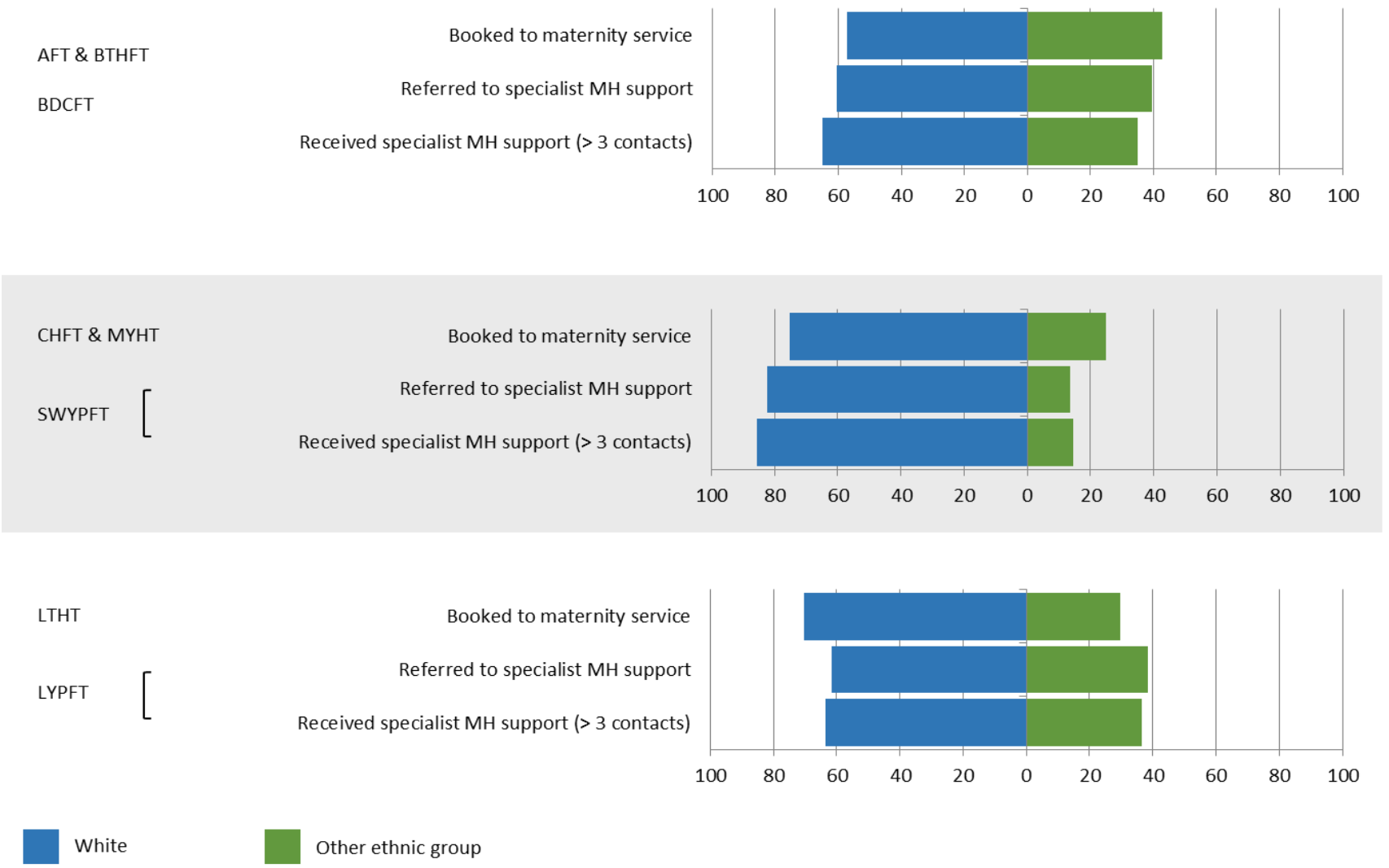



*Figure 7. Ethnic breakdown of the booked maternity population, the population referred for specialist mental health support, and the population in receipt of specialist mental health support in each area (%)*

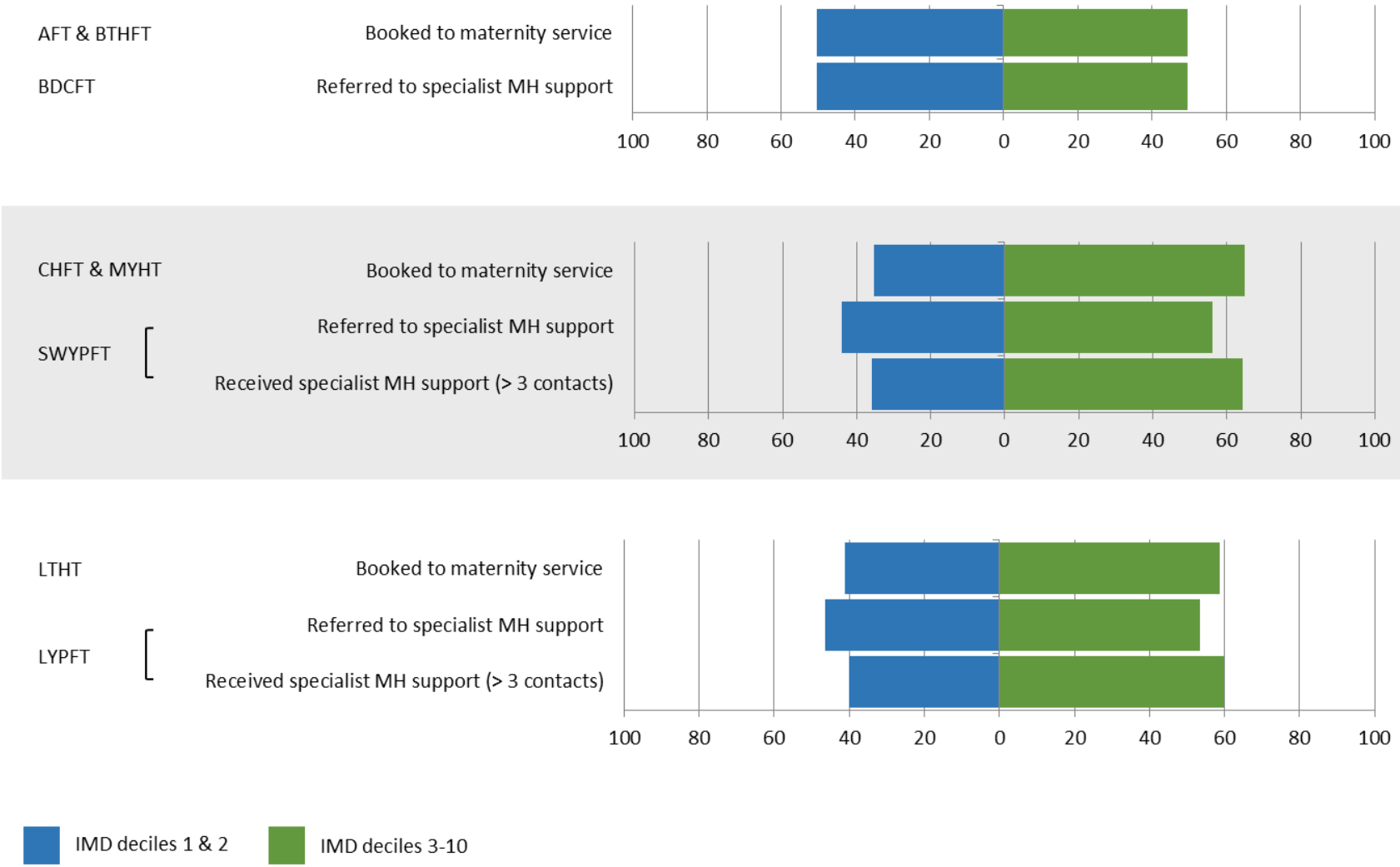



*Figure 8. Deprivation breakdown of booked maternity population, referred for specialist mental health support, and received specialist mental health support (%)*

## 6. Context – data systems and access

- Individual service providers were approached for data and though data were made available by some, it has not been possible to include all information in this report; data were omitted if values seemed implausible and if information obtained conflicted with the MSDS, the relevant local contact has been made aware.
- Accessing and analysing data obtained from the maternity booking appointment alone gives an incomplete view of the perinatal experience (note the increase in prevalence from 8% at booking to 11% by the time of the postnatal discharge assessment at BTHFT). Most maternity providers expressed interest in collating information from the whole pathway, but advised that the infrastructure was not in place at the time of the request or within the timeline for this project.
- It is not possible to obtain prevalence estimates for PMH conditions via MSDS data as the only PMH data item records whether PMH prediction and detection questions were asked and not the outcome of these questions or the outcome of any further assessment, such as the PHQ-9. Reliable prevalence estimates are also not available on the PMH Fingertips dashboard as they are calculated from national prevalence estimates and ONS births data, and do not account for area variation in mental health or sociodemographic factors. There are no other publicly available sources of routine PMH health data in England.
- The possibility of accessing platforms built with the aim of collating multiple datasets from either the local area (e.g. Connected Bradford, the Leeds Data Model) or multiple areas (e.g. the Yorkshire and Humber Care record) was explored. It was only possible to obtain information from Connected Bradford within the time frame of the project; the required infrastructure was not available within other platforms to enable collation and sharing of PMH data.
- Although all sites captured maternal language data in some form, this information was not routinely accessed and analysed for the purpose of internal routine monitoring of inequalities in PMH within Trusts, and was therefore not readily available to share.
- Limited capacity of both healthcare professionals and analyst teams was cited most frequently as a barrier to collating and sharing information.
- Barriers to collection and reporting of key information about the population (ethnicity, language ability etc.) consistently not only impact the ability of this report to summarise and draw conclusions, but also the ability of organisations to reach and provide support to all groups equally.

## 7. Conclusion

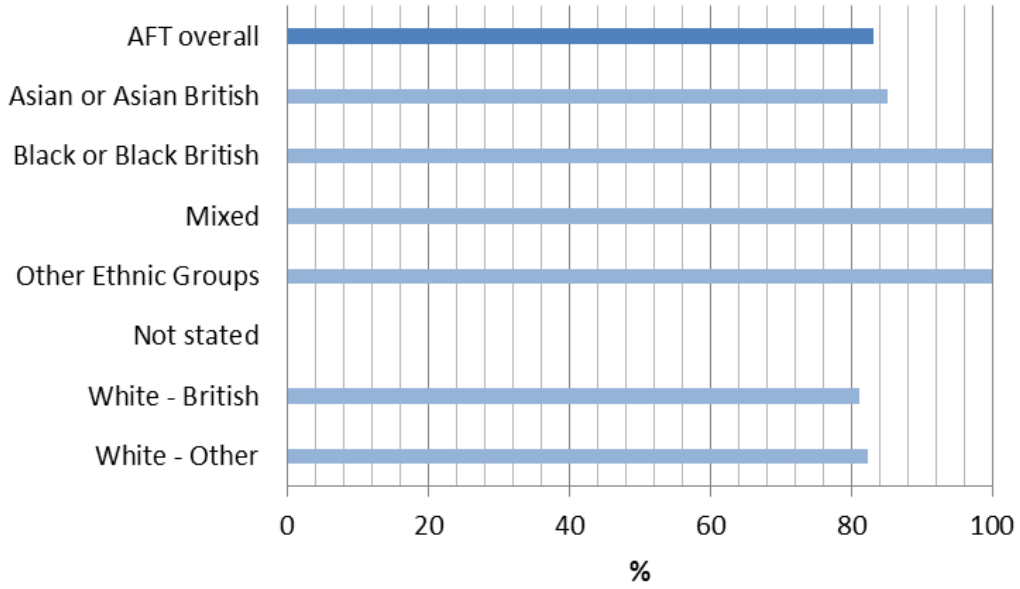
Across multiple data sources, White British women are consistently over-represented in the subset of the population identified with poor PMH. However, to reliably explore prevalence of poor PMH and gain greater understanding of inequalities, it is imperative that key data items such as mental health assessment outcomes, English language ability and ethnicity are available and accessible across the WYHCP. This report, alongside the other elements of this programme of research, highlights the danger of reliance on currently available data alone – limitations and recommendations have been identified.

# Appendices

## Appendix 1

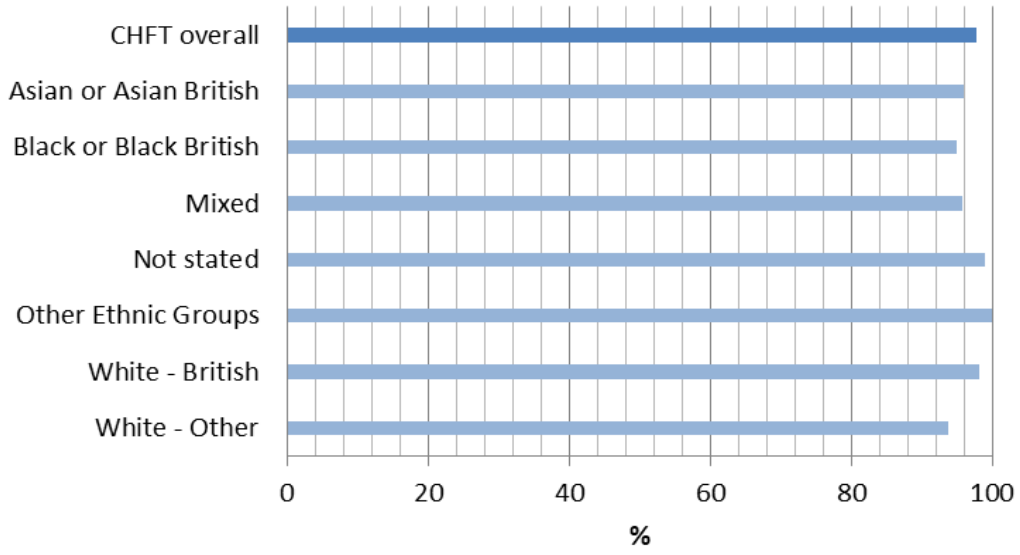
**Use of mental health identification questions at the maternity booking appointment by ethnic group, relative to provider total (%)**

a) **Airedale Foundation NHS Trust**

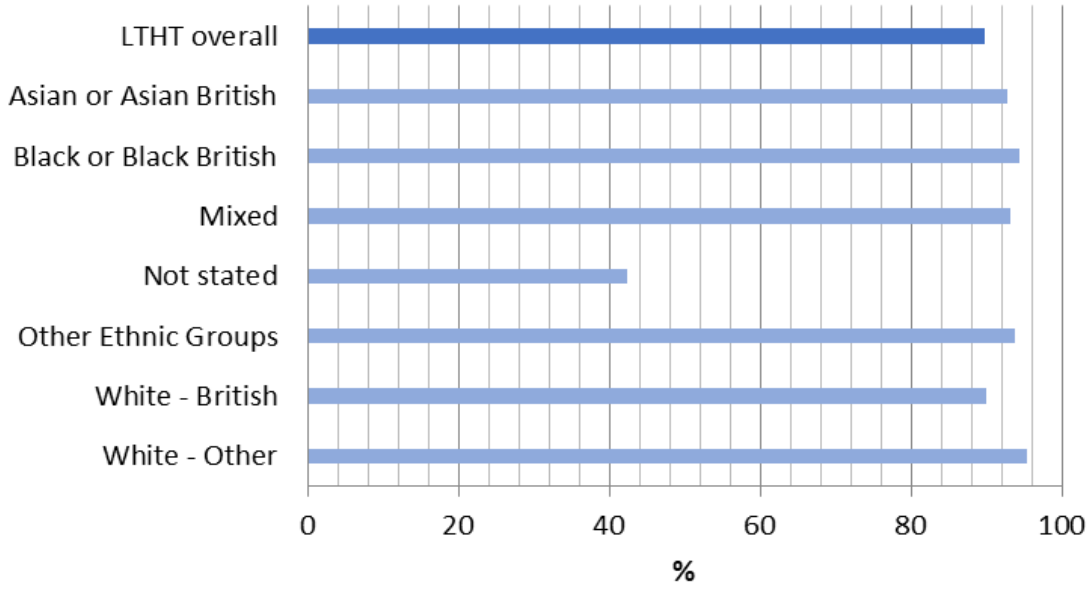



Note: numbers less than 100 in all categories other than White British and Asian or Asian British, additional source data should be explored to understand representativeness in these groups at AFT

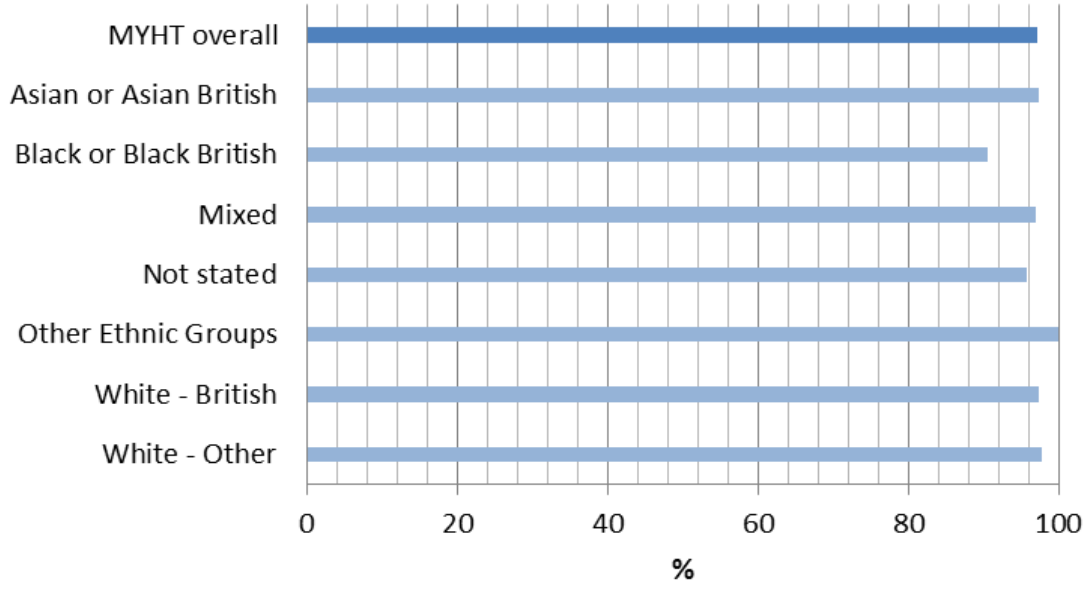
b) **Calderdale & Huddersfield NHS Foundation Trust**



c) **Leeds Teaching Hospitals NHS Trust**




d) **Mid Yorkshire Hospitals NHS Trust**

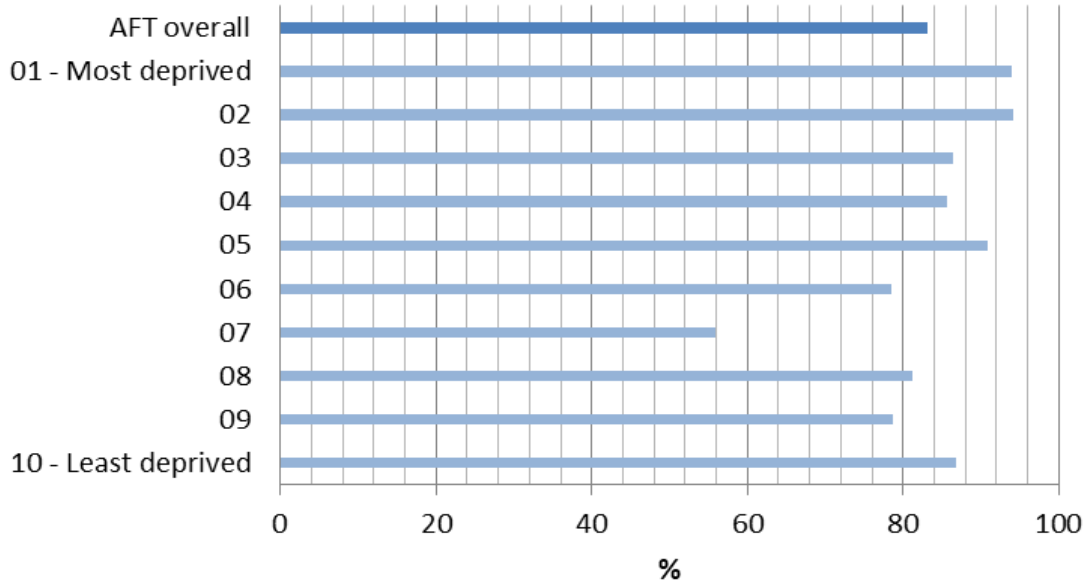



Note: small number of women in Other Ethnic Groups category; it is not possible to make reliable conclusions

## Appendix 2

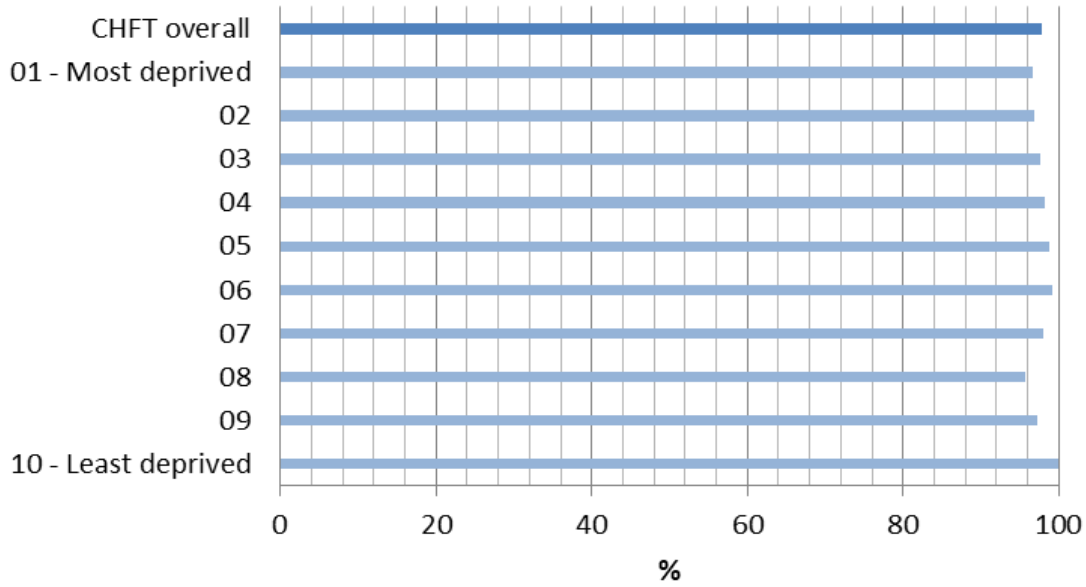
**Use of mental health identification questions at the maternity booking appointment by IMD 2015 decile, relative to provider total (%)**

a) **Airedale NHS Foundation Trust**

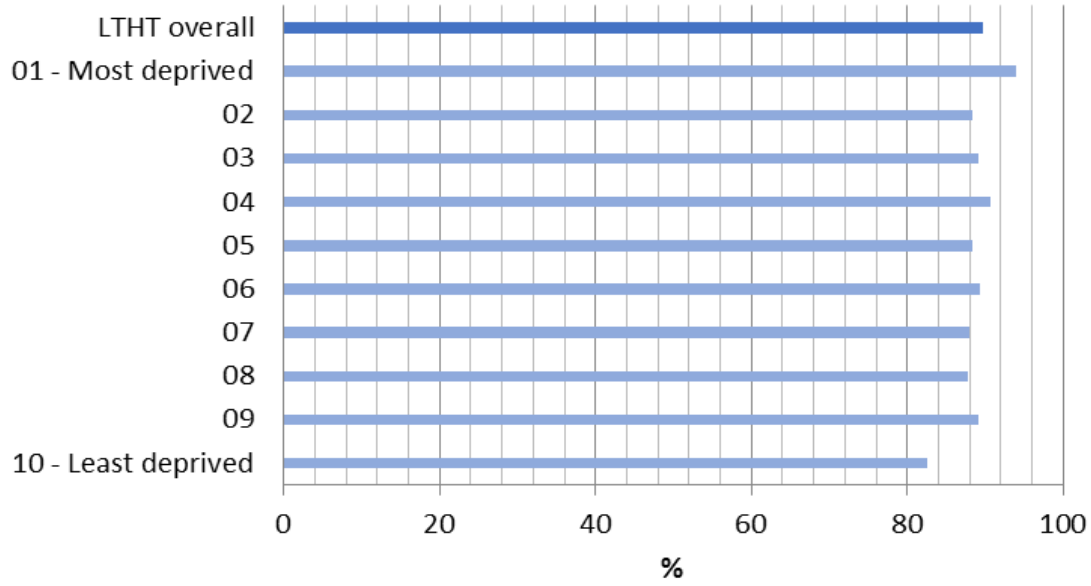



Note: small numbers may exaggerate variation; deciles 3, 4 and 5 each contribute less than 10% of the AFT population

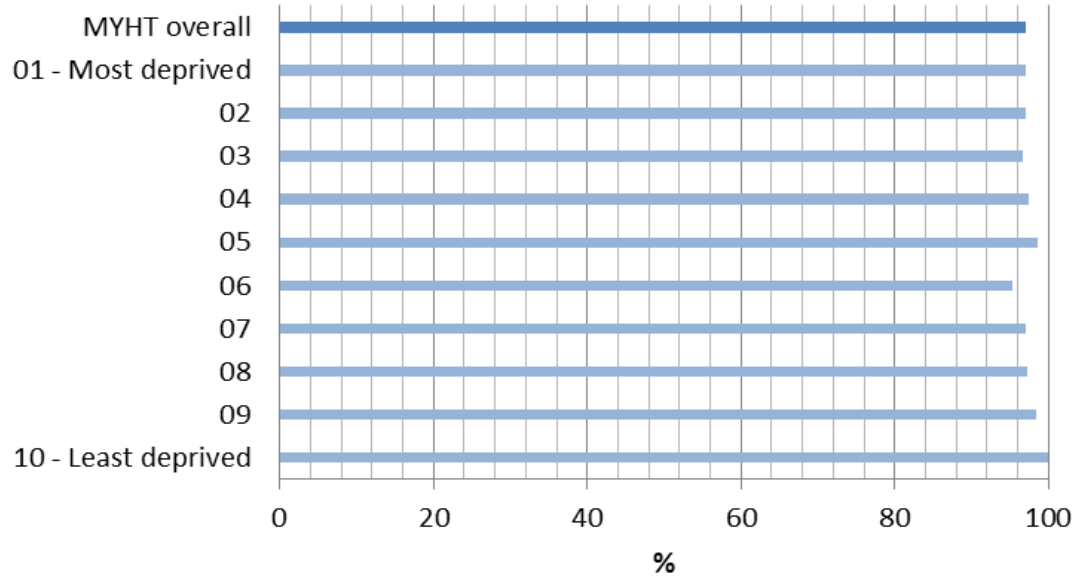
b) **Calderdale & Huddersfield NHS Foundation Trust**



c) **Leeds Teaching Hospitals NHS Trust**




d) **Mid Yorkshire Hospitals NHS Trust**



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