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Geographical variation in perceptions, attitudes and barriers to mental health care-seeking across the UK: a cross-sectional study

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ABSTRACT

Objectives To examine the relative importance of the drivers of mental health care-seeking intention and how these, along with intention itself, are geographically distributed across integrated care systems (ICS) and health boards (HBs) in the UK. Also, to examine the degree of acceptance of virtual modes of care.

Design Community-based cross-sectional survey.

Participants and setting A national online survey of 17 309 adults between August and September 2021 recruited via a research technology company, Lucid. Sample size quotas were set to ensure coverage across the UK and match population distributions for gender, age and ethnicity. After exclusions, 16 835 participants remained (54% female, 89% white).

Main outcome measures Care-seeking intention, using a continuous measure of likelihood and a categorical measure of estimated time to seek professional help for a future mental health difficulty.

Results 20.5% (95% CI 19.8% to 21.2%) reported that they would significantly delay or never seek mental healthcare, ranging from 8.3% to 25.7% across ICS/HBs. Multilevel regression analysis showed mental health knowledge was the most predictive of care-seeking intention, followed by attitudes towards others with mental illness and a combination of stigma, negative attitudes to treatment and instrumental barriers to accessing care. The model explained 17% of the variance. There was substantial geographical variation in prevalence of preclinical symptoms of depression and anxiety, attitudes to mental health, and barriers to care, leading to complex ICS/HB profiles. Remote and self-guided therapies did not pose as a major barrier to care with more than half of respondents likely or very likely to use them.

Conclusions Our locally relevant and actionable findings suggest possible interventions that may improve care-seeking intention and indicate which of these interventions need to be geographically tailored to have maximal effect.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ Our survey is the most comprehensive and geographically granular to date in assessing the key factors that influence mental health care-seeking intention, using academically validated scales.
⇒ Examining results at the level of integrated care systems (ICS) and health boards (HB) (ICS/HBs) across the UK, where decisions about health and social care are made, ensures that findings are actionable.
⇒ We use a non-probability sampling procedure, quota sampling, to recruit participants, which can produce sampling biases.
⇒ The inferences around causality we can make based on the associations found in our multilevel regression model are limited due to the cross-sectional data, and there are likely unknown predictors/covariates not captured that would increase the predictive power of the model.
⇒ Some ICS/HBs have a smaller sample size of participants meaning that we have less confidence in the estimates.

INTRODUCTION

Mental health problems are among the leading causes of disease burden worldwide.[1] The COVID-19 pandemic has significantly worsened the mental health crisis across all ages[2] and increased the immediate need for accessible and effective treatments and support. However, a substantial proportion of people are unable or unwilling to access mental healthcare.[3 4] It is important to understand the reasons why people are delaying or refusing to seek help when needed, and where reluctance and the barriers to care are the most prevalent. This is essential in the development of strategies to improve mental health care-seeking and identifying communities that need the most immediate intervention.

To understand why people fail to seek care, most research has focused on mental illness stigma.[3 5–8] Negative societal perceptions and beliefs around mental illness may lead to a fear of judgement or manifestation of shame and embarrassment among individuals with mental health difficulties, consequently deterring them from seeking help.[6 7 9]

Conversely, positive beliefs of acceptance and tolerance towards others with mental illness have been shown to be associated with increased likelihood to seek care in the individual themselves.[8] However, there is a wide array of barriers beyond stigma that should be considered holistically. General negative attitudes towards mental health professionals and services are also prominent barriers—these are often referred to as attitudinal barriers.[10–13] Attitudinal barriers can include the need for autonomy or not wanting to talk about feelings, distrust in medical professionals, not believing in the efficacy of treatments and not believing that one has a problem that needs treatment.[10–12] Several structural factors also hinder mental health support access. This may be associated with the location, transport and availability of mental health services as well as the cost of access and long waiting lists for support.[6 10–12 14–16] One's knowledge and awareness about mental health difficulties, that is, mental health literacy, impacts the recognition of mental health problems and symptoms, consequently resulting in some of those suffering not accessing support.[10 12] Furthermore, general knowledge can also increase awareness of the importance of mental health treatment.[8] There are also large differences in care-seeking behaviour across different demographics of individuals, for example, generally (though results are mixed) older age, female gender, a marital status of divorced, separated or widowed, and non-white ethnicities have been shown to be associated with increased care-seeking and health service utilisation.[17 18] In order to understand the influence of this wide array of drivers, obtaining relative effects of these factors will point to the types of interventions that might produce maximal improvements to care-seeking intention. However, we must move beyond one-size-fits-all interventions which often are not as impactful as interventions tailored to the specific needs of subpopulations.[19] Geographically granular data can give us insights into 'pockets of prevalence' at a level that can be targeted by local policies.

While national statistics present geographically granular data on mental health disease prevalence and service utilisation, with evidence that geographical variation does exist,[20–22] no such data exist for care-seeking intention and its drivers. As opposed to utilisation measures, which cannot disentangle between care-seeking behaviour and service provisioning and accessibility, it is important to isolate the individual perceptual aspect of care-seeking, along with the drivers, to inform the development of locally tailored behavioural interventions.

Examining the variation in care-seeking intention at the level of integrated care systems (ICS) in England, and health boards (HB) in Scotland, Northern Ireland and Wales research at the level of ICS/HBs is timely and required, as research at this geographical level is sparse. ICSs and HBs are geographically based partnerships between National Health Service (NHS) organisations and local authorities, designed to encourage collaboration and integration of services to improve population health. ICSs across England have been developing for several years but were only put on a statutory footing in 2022.[23] HBs in Scotland, Wales and Northern Ireland work in a similar way, though they have long been established. Since ICSs and HBs focus on integrating primary, secondary and community healthcare, these are appropriate geographical levels to implement healthcare campaigns and interventions to improve care-seeking, especially given the new statutory establishment of ICSs in England.

Increasingly, treatment providers are attempting to improve access by offering virtual modes of care, such as remote sessions via telephone or online video conferencing and self-guided programmes such as internet-based cognitive behavioural therapy.[24 25] While these can remove some aspects of stigma, accessibility and cost barriers, and act as a solution to the under-resourcing of mental healthcare, lack of experience with technology, concerns about data security and trust in the effectiveness of these services pose new potential concerns.[26]

There are three aims in the current study:

1. We aim to compare relative effects of the drivers and barriers to mental health care-seeking intention, and understand the extent to which these factors are important beyond sociodemographics.
2. We aim to examine the geographical variation of intention and its complex mix of drivers and barriers across ICS in England, and HB in Scotland, Northern Ireland and Wales.
3. We aim to examine the degree of acceptance and trust in virtual modes of care, and how this varies across ICS/HBs.

METHOD

Sample

UK adults aged 18+ were sampled from 17 August 2021 to 9 September 2021 via a research technology company (Lucid; https://luc.id/). Lucid has a marketplace of diverse suppliers each with a variety of recruitment/sourcing methods including ads and promotions across various digital networks, search engines, word of mouth and membership referrals, social networks, online and mobile games, affiliate marketing, banner ads, offer walls, television (TV) and radio ads, and offline recruitment.

Sample size quotas were set to ensure adequate coverage across 179 UK International Territorial Level (ITL) 3 regions, with N=100 set for each ITL3 region. This meant that the total sample size quota was 17 900. Soft quotas were set for gender, age and ethnicity based on UK Office for National Statistics (ONS) population estimates. Quotas were based on the UK 18+ population where possible (age, gender[27]), and for the entire UK population for ethnicity.[28] Sampling to reach these quotas required the use of screener questions for participants which required gender, age, ethnicity and the first part of their postcode. During recruitment, we remained flexible and pragmatic to reaching these sampling targets acknowledging the difficulty in reaching N=100 in

smaller ITLs such as Na h-Eileanan Siar (Western Isles) and Fermanagh and Omagh. After keeping the survey open for over 3 weeks, we closed the survey once we felt that survey uptake had substantially declined to virtually 0. 17 309 participants completed the survey online.

Speeders (those whose survey completion time was less than one-third of the median length of interview for all participants), straightliners (those who responded with the same answer for long sections of the survey, eg, for all of the knowledge, attitudes and barriers scales) or bad open-enders (those who provided nonsense responses to free text questions) were excluded from the analysis.

Patient and public involvement

Members of the public were participants in our online survey. They provided us with their anonymised individual data (responses to survey questions), needed for subsequent analysis. Beyond that, neither patients nor the public were involved in the design of the study, the dissemination of the study results, or any other part of the research. All UK adults over the age of 18 from the general population were eligible to take part in the survey and the exclusion criteria were those living outside the UK and those under 18. No patients were involved and patients were not part of the eligibility criteria.

MEASURES

Covariates

Age, gender, ethnicity, highest educational qualifications, work status, marital status, religion and income were collected as demographic covariates. Deprivation is used as an area-level covariate. We obtained Indices of Multiple Deprivation (IMD) rankings for lower layer super output areas (LSOAs) in England[29] and Wales[30] and data zones in Scotland.[31] To calculate an indicator of deprivation using the IMD at ICS/HB level, we follow government guidelines for calculating local authority deprivation summaries: we examine the proportion of neighbourhoods (LSOAs/data zones) in a larger area (ICS/HB) that are in the most deprived 10% of neighbourhoods in each nation. Since Northern Ireland has 1 HB covering the whole nation, we assign the IMD proportion of neighbourhoods in Northern Ireland Health Board in the most deprived 10% nationally to 10% by default.

Prevalence of symptoms of depression and anxiety

We assessed symptoms of depression and anxiety using the Patient Health Questionnaire-2 (PHQ-2)[32] and the Generalised Anxiety Disorder 2 (GAD-2)[33], respectively. These two-item questionnaires are used to prescreen for depression and anxiety as a first step approach, indicating who should be further evaluated by the PHQ-9 and GAD-7 to determine if they meet criteria for a diagnosis. In both questionnaires, participants were asked how often they were bothered by depression/anxiety-related problems in the past 2 weeks to which they responded 'not at all' (scored 0), 'several days' (scored 1), 'more than half the days' (scored 2) or 'nearly every day' (scored 3). PHQ-2 and GAD-2 scores were obtained by adding the response score for each question. Both scores range from 0 to 6, with those scoring 3 or greater being identified as possible prescreened clinical cases. Discriminant validity has been shown to be excellent for the PHQ-2 (with area under the curve (AUC) at 0.80–0.82), and acceptable for the GAD-2 (with AUC at 0.74–0.75).[34] Acceptable sensitivity (0.64 for PHQ2 and 0.71 for GAD2) and specificity (0.85 for PHQ2 and 0.69 for GAD2) has been identified at a threshold of ≥3 for both.[34] Both measures were internally consistent in the current sample, with Cronbach's alpha of 0.86 and 0.88, respectively, which is above the minimum acceptable threshold of 0.7.

Care-seeking intention

We assessed care-seeking intention using a continuous likelihood scale and a categorical choice scale. Participants rated on a scale from 0 to 10 'If you were to experience psychological, emotional or mental health difficulties that were significantly affecting your day-to-day functioning, how likely would you be to seek professional help (general practitioner (GP), other NHS, private health)?'. This is a single-item scale. This scale was adapted from a previous scale used in a comparable study.[8] To allow for interpretable mapping (ie, mapping percentage of people who would delay or never seek care would be more understandable than mapping the average likelihood to seek care rating in that area or percentage of people who rated 7 or above), participants were also asked 'If you were to experience psychological, emotional or mental health difficulties that were significantly affecting your day-to-day functioning, when would you seek professional help?'. This single-item question had categorical responses of 'As soon as possible (eg, within a month)', 'If problems persist over several months (eg, 1–6 months)', 'would seek care within 6 months', and 'never'. We dichotomised this response by grouping those that responded 'As soon as possible (eg, within a month)' and 'If problems persist over several months (eg, 1–6 months)' as the 'would seek care within 6 months' group and grouping those who responded 'If problems persist for a long time (eg, more than 6 months)' and 'never' as the 'would significantly delay or never seek care' group. We chose to dichotomise the variable based on the importance of timing of care-seeking. Different mental health difficulties require professional help at different times. For example, the NHS recommends seeking help if individuals experience symptoms of depression for most of the day, every day, for more than 2 weeks,[35] while for GAD, although the advice is to seek help sooner, the individual is most likely to be diagnosed if they have had symptoms for 6 months or more.[36] Other mental health conditions require treatment after longer periods, for example, prolonged grief disorder is diagnosed as experiencing grief for a year and experiencing symptoms at least every day for a month prior to diagnosis.[37] As our care-seeking variable pertains to any mental illness, we use a rough averaged proxy that

it would be a concern if care-seeking was delayed for more than 6 months.

Perceptual and contextual drivers of care-seeking intention

Mental health-related knowledge was measured by the Mental Health Knowledge Schedule (MAKS)[38] which comprised two six-item parts. The first part covered stigma-related mental health knowledge areas. Respondents were given statements such as 'most people with mental health problems want to have paid employment.' to which they rated on a 5 point scale from 'agree strongly' to 'disagree strongly', with an additional option to respond 'don't know'. The second part required the respondents to classify various conditions as a mental illness or not. A sum total is taken of the first six items so that higher MAKS scores indicate greater knowledge. Test–retest reliability has been shown to be moderate (at 0.71 using Lin's concordance statistic, exceeding the criterion of 0.70 for acceptable test–retest reliability).[38] Validity has been supported by extensive review by experts.[38] MAKS has a Cronbach's alpha of 0.79 in the current sample.

Attitudes towards others with mental illness were assessed using the Community Attitudes towards the Mentally Ill (CAMI) scale.[39] Participants were given statements for which they rated on a 5-point scale 'agree strongly' (100) to 'disagree strongly' (0), and also given the option of 'don't know'. The CAMI consists of two subscales that take the mean of the items. The first is related to tolerance and support of community care where a higher score represents more positive attitudes, with items such as 'we need to adopt a far more tolerant attitude towards people with mental illness in our society'. The second is related to prejudice and exclusion where a higher score represents more negative attitudes, with items such as 'people with mental illness don't deserve our sympathy'. Test–retest reliability has been shown to be stable in a number of studies, with intraclass correlation coefficients (ICCs) ranging from 0.81 to 0.95.[40] Construct validity has been shown by significant correlations between CAMI and MAKS and between CAMI and Reported and Intended Behaviour Scale (RIBS).[40] CAMI has a Cronbach's alpha of 0.76 and 0.89 in the current sample for the tolerance and support subscale and the prejudice and exclusion subscale, respectively.

We assess perceived barriers to accessing mental healthcare using the Barrier to Care Evaluation (BACE) scale.[13] For the purpose of this community-level survey, in prior correspondence with Professor Sir G. Thornicroft in 2021, we obtained permission to change the wording of BACE from 'Have any of these issues ever stopped, delayed or discouraged you from getting, or continuing with, professional care for a mental health problem?' to 'Would any of these issues …'. The BACE scale measures the degree to which different stigma related, treatment attitude-related and logistics-related barriers would cause people to delay future care-seeking. Respondents are given 30 barriers to which they rate 'not at all', 'a little', 'quite a lot' and 'a lot'. Issues that would stop, delay or discourage care-seeking 'a lot' were classified as 'major barriers'. BACE measures can be used to calculate an overall mean score and three subscales, all ranging from 0 to 3. The first subscale contains 12 items, such as 'feeling embarrassed or ashamed', which measures the extent to which stigma and discrimination are barriers to care ('treatment stigma'). The second contains 10 items, such as 'fear of being put in hospital against my will', which are attitudinal barriers, meaning negative attitudes towards mental health professionals and services that would delay care-seeking. The third contains eight items, such as 'problems with transport or travelling to appointments.', which are instrumental barriers, meaning barriers such as transportation, finances, childcare and work issues. The BACE items have been found to have acceptable test–retest reliability (with weighted kappa values ranging from 0.61 to 0.80 for most of the items and Lin's concordance statistic at 0.816).[13] Content validity was ensured by coverage of the extant literature during scale development and assessed in comparisons with free text responses.[13] BACE has a Cronbach's alpha of 0.94, 0.86 and 0.87 in the current sample for the stigma, attitudinal and instrumental subscales, respectively.

External experience of mental illness

We assessed external experiences of mental illness using the first four items of the RIBS.[41] Participants were asked if they were currently living with or lived with, currently working with or worked with, currently have or had a neighbour or currently have or had a close friend with a mental health problem. Item retest reliability based on a weighted kappa ranged from 0.62 to 1.0 for the entire RIBS scale suggesting moderate/substantial agreement.[41] Strong consensus validity has also been found, as rated by service users/consumers and international experts in stigma research.[41] The first four items of the RIBS scale have a Cronbach's alpha of 0.713 in the current sample.

Channels and modes

We examined the receptiveness of participants towards different channels and modes of mental health support. Participants rated how likely they were to reach out to the following channels: health and mental health (MH) professionals (GP, accidents and emergencies (A&E), practitioner at NHS Talking Therapies), voluntary and community organisations (non-government organizations (NGOs) and charities such as Mind), support teams at your workplace, university or school, family, friends, social media networks and peer-to-peer networks, anonymous online communities, on a 5-point scale from 'very unlikely' to 'very likely', with an additional 'don't know option. With the same scale, participants were asked how likely they were to access the following modes of support: telephone appointments, one-to-one video call appointments (eg, Zoom and Microsoft teams), group video call appointments (eg, Zoom and Microsoft teams), one-to-one face-to-face sessions, group face-to-face sessions, self-help materials (eg, mobile apps, books, websites,

self-help/computerised therapy), urgent mental-health helplines/24/7 crisis lines (eg, SHOUT, Samaritans).

ANALYSIS

All analyses were conducted on R. Survey responses were weighted using a poststratification weighting scheme to adjust for unit non-response and to make estimates representative of the population, at regional level, in terms of the key demographics of age, sex, ethnicity and highest educational qualifications, using marginal distributions obtained from ONS,[27] Annual Population Survey[28] and 2011 Census.[42] Weights smaller than 0.3 or larger than 4 were trimmed to avoid extreme weights influencing estimates for a small number of participants.

For the individual-level predictive modelling, we impute missing data using multiple imputation by chained equations[43 44] to generate 50 imputed datasets. Multilevel linear regression models with individuals (level 1) nested within ICS/HBs (level 2) were built to examine the relative effects of knowledge (MAKS composite; level 1), attitudes towards others with mental illness (prejudice and tolerance subscales from CAMI; level 1), barriers (stigma, attitudinal and instrumental barrier subscales from BACE; level 1) and external experiences (living with, working with, having a neighbour and being close friends with someone with mental illness from RIBS; level (1) on likelihood to seek mental healthcare, with demographics (level 1), area level deprivation (level 2) and average levels of prescreening symptoms of depression and anxiety (an average of the PHQ2 and GAD2 score; level (1) as covariates. These variables were selected for input into the model based on a comprehensive review of the existing literature to ensure the model included all important predictors of care-seeking. In a multilevel linear regression, the parameters vary at more than one level. We will focus on the fixed effects parameters to identify the most important predictors of likelihood to seek mental healthcare, but also present random effects (variance components) to account for clustering of data within ICS/HBs. Leyland AH, Groenewegen[45] and Owen *et al*[46] provide more details on the methodology and specification of multilevel models. Model parameter estimates are chosen to optimise the restricted maximum likelihood (REML) criterion, where the part of the data used for estimating variance components is separated from that used for estimating fixed effects, ensuring unbiased estimates of variance components. REML is preferable when the number of parameters is large or the primary interest is obtaining estimates of model parameters, while the alternative ML should be used if comparing multiple models which is not a priority of our current study. We assess the models using ICC, Akaike information criterion (AIC) and Bayesian information criterion (BIC). We assess multicollinearity by examining correlations and using the generalised variance-inflation factor (GVIF), calculated to the power of 1/(2×df) where df is the df associated with the term.[47] The GVIF handles multilevel categorical variables. We find evidence of multicollinearity between the three BACE subscales, according to the correlations ranging from 0.79 to 0.95 (online supplemental table 1) for imputed data (online supplemental table 2) for unimputed data and GVIF^1/(2×df) close to or larger than 2 (online supplemental table 3), therefore, we use the overall BACE subscale in our model. In our predictive model, we standardise the continuous predictors to allow us to examine relative effects. Absolute effects are presented in the unstandardised model in online supplemental materials.

We estimate geographical variation at the level of ICS/HBs, which are partnerships between NHS providers and services and local authorities. ICSs and HBs focus on integrating primary, secondary and community healthcare. We believe these are the best routes to implement campaigns, strategies and interventions to improve care-seeking intention, and attitudes to mental health. In total there are 42 ICS in England, 14 HBs in Scotland, 7 HBs in Wales and 1 HB in Northern Ireland. We collected the outer postcode of each respondent, which we used to assign to ICS/HB using a postcode to ICS/HB lookup.[48] When outer postcodes could be matched to more than one ICS/HB, they were assigned to the ICS/HB which had a greater number of full postcodes corresponding to that outer postcode. We present mean and prevalence levels for 61 ICS/HBs. We do not present estimates for Western Isles (N=4), Shetland (N=12) and Orkney (N=15) due to small numbers of respondents. Inference for weighted estimators is complex, so we, therefore, used bootstrapping to define CIs, as this method allows the variability of the weights to be taken into account, which is essential. We followed the approach of Canty and Davison.[49] Bootstrapping creates multiple resamples (with replacement) from a single set of observations, and computes the effect size of interest (mean or prevalence) on each of these resamples. The bootstrap resamples of the effect size can then be used to determine the 95% CI.

RESULTS

Of the 17 309 adults who completed the survey, 474 participants were excluded from the analysis as speeders, straightliners or bad open-enders. Among the 16 835 included participants, the average age was 44 (range 18–96), 54% were female, 11% were non-white, 38% had an undergraduate or postgraduate degree, or other professional qualification, 63% were in employment, and 30% had an income above £45 000. The original sample recruited was close to UK level proportions for age, sex, ethnicity and regional distribution, which improved further on applying a weighting strategy (online supplemental table 4). 33.5% (95% CI 32.9% to 34.5%) and 34.8% (95% CI 34.1% to 35.6%) screened for depression and anxiety respectively. 20.5% (95% CI 19.8% to 21.2%) reported that they would delay for more than 6 months or not seek care at all if they were to experience mental

health difficulties. Descriptives of variables are shown in online supplemental table 5.

Multilevel linear regression analysis on mental health care-seeking intention

Of the perceptual and contextual drivers of mental health care-seeking intention, mental health knowledge has the largest (positive) association with likelihood of care-seeking (β 0.49, 95% CI 0.45 to 0.54), followed by barriers to care (β −0.37, 95% CI −0.42 to −0.33) and tolerance for people with mental illness (β 0.22, 95% CI 0.17 to 0.26; table 1). Worryingly, those who reported higher levels of prescreening symptoms of depression and anxiety were less likely to seek help (β −0.25, 95% CI −0.29 to −0.20). Adding in all the potential drivers more than doubles the explanatory power of the model from 8% in a model with demographic covariates alone to 17% explained variance. The full model also has lower AIC and BIC than the demographics only model, indicating a better fit. Older, female, more educated, Christian, married, divorced, separated or widowed and higher-income individuals were associated with greater likelihood of care-seeking. Adding the perceptual and contextual drivers removes the significant effect of qualifications and income, indicating potential mediation effects. The exploration of mediation effects was beyond the scope of the current study but would be an interesting future direction of exploration. Interestingly, socioeconomic deprivation at ICS/HB level is not predictive of care-seeking.

Geographical distribution of mental health care-seeking intention and its drivers

We identify significant variation in the prevalence of prescreening symptoms of depression and anxiety, mental health care-seeking intention and the drivers of intention across ICS/HBs in the UK (table 2). This spatial variation is much less obvious when examining prevalence at the level of the nine regions in England and the three other nations in the UK (online supplemental table 6). Critically, figure 1 (online supplemental table 7) shows it is not uncommon for people to prescreen for depression or anxiety and report they would delay for more than 6 months or never seek care. Mapping this combined measure gives a comprehensive picture of areas at immediate risk of unmet need. The degree of potential unmet need varies drastically even between two neighbouring ICS/HBs, for example, 6.7% (95% CI 3.9% to 9.3%) in Birmingham and Solihull ICS while black country and West Birmingham ICS has the highest risk in the UK (17.5%, 95% CI 13.1% to 21.4%).

There is substantial geographical heterogeneity in the attitudes towards others with mental illness and barriers that influence care-seeking intention (figure 2). While these factors are correlated at ICS/HB level (online supplemental table 8), geographical profiles are complex. Notably, while mental health knowledge is the most predictive of care-seeking intention, there is actually very minimal variation across the ICS/HBs (table 2).

Beyond composite scores, we also show substantial variation in the prevalence of individual barriers that would stop, delay or discourage mental health care-seeking across ICS/HBs (figure 3 and online supplemental table 9). The top three most prevalent barriers to mental health care-seeking in the UK were all attitudinal (ie, negative attitudes towards mental health professionals and services): 'dislike of talking about my feelings, emotions or thoughts.' (19.5% rated this as a barrier that would stop, delay or discourage care-seeking a lot (major barrier); 95% CI 18.9% to 20.2%), 'fear of being put in hospital against my will.'(19.4%; 95% CI 18.7% to 20.1%) and 'wanting to solve the problem on my own.' (19.3%; 95% CI 18.7% to 20%). In figure 3, we display the distribution across ICS/HBs of these top three barriers, along with the most prevalent major stigma barrier ('feeling embarrassed or ashamed.' 17.5%; 95% CI 16.9% to 18.1%) and the most prevalent major instrumental barrier ('not being able to afford the financial costs involved.' 18.1%; 95% CI 17.6% to 18.8%). Each of the top five ICS/HBs with the highest percentage who would delay or never seek care highlighted in figure 3 has distinct barrier profiles, indicating distinct interventions would be required.

Channels and modes of support

In-person one-to-one therapy with a mental health professional was the most preferred mode of mental health support in the UK: 63.4% (95% CI 62.6% to 64.2%) reported that they were likely or very likely to seek this support from a mental health professional and 71.0% (95% CI 70.5% to 71.8%) said they were likely/very likely to access in-person one-to-one therapy. Remote and self-guided therapies were the second and third most preferred modes of support with substantial interest in these newer channels (58.8% (95% CI 57.9% to 59.6%) and 51.4% (95% CI 50.6% to 52.3%), respectively). Respondents with higher household income (over £45 000) were more likely to access remote therapies compared with respondents with lower household income (under £45 000; 65.6% (95% CI 64.2% to 67.0%) compared with 56.8% (95% CI 55.7% to 57.8%)). Even in the lowest household income band (under £25 000), more than half of respondents were likely or very likely to seek remote care (53.4% (95% CI 51.8% to 54.9%)). Interestingly, group therapy sessions were less preferred, whether in person (27.7%, 95% CI 27.0% to 28.5%) or via video (20.3%, 95% CI 19.6% to 20.9%).

We found that for almost all HBs (online supplemental table 10), participants were most likely to turn to a professional for support for mental health issues (ranging from 51.2% in North London Partners in Health and Care to 77.5% of respondents in Forth Valley who reported that they were likely or very likely). HBs varied in their inhabitant's degree of likelihood to use other channels of support. For example, in London, participants were more likely to use support teams at the workplace, university or school, social media networks and peer-to-peer networks and anonymous online communities than other areas.

Table 1 Multilevel regression results for change in likelihood to seek mental healthcare (range 0–10) per SD for individual-level continuous variables and relative dose for categorical variables, with a random effect for the ICS/HB of residence of the respondent

	Model 1: demographic only		Model 2: demographics, symptoms and perceptual and contextual drivers	
Predictors	**Effect size (95% CI)**	**P value**	**Effect size (95% CI)**	**P value**
Fixed effects				
(Intercept)	6.71 (6.54 to 6.88)	<0.001*	6.59 (6.42 to 6.76)	<0.001*
Demographics (level 1)				
Age	0.61 (0.56 to 0.66)	<0.001*	0.38 (0.32 to 0.43)	<0.001*
Male respondent (reference: female)	−0.33 (−0.42 to −0.25)	<0.001*	−0.16 (−0.24 to −0.07)	<0.001*
Qualifications: 1–3/ apprenticeship (reference: no qualifications/other)	0.12 (0.00 to 0.24)	0.045	0.06 (−0.06 to 0.17)	0.34
Qualifications: 4 (reference: no qualifications/other)	0.26 (0.13 to 0.39)	<0.001*	0.07 (−0.06 to 0.19)	0.30
Economically inactive or student (reference: economically active)	−0.05 (-0.14 to 0.05)	0.326	−0.05 (−0.14 to 0.05)	0.33
Religion: no religion (reference: Christian)	−0.24 (−0.33 to −0.14)	<0.001*	−0.31 (−0.40 to −0.22)	<0.001*
Religion: other or not stated (reference: Christian)	−0.41 (−0.59 to −0.24)	<0.001*	−0.35 (−0.52 to −0.18)	<0.001*
Ethnicity: Asian (reference: white)	−0.02 (−0.22 to 0.19)	0.883	0.22 (0.02 to 0.41)	0.03
Ethnicity: black (reference: white)	−0.31 (−0.56 to −0.06)	0.016	−0.12 (−0.36 to 0.12)	0.34
Ethnicity: mixed ethnicity (reference: white)	−0.39 (−0.74 to −0.05)	0.026	−0.28 (−0.61 to 0.05)	0.09
Ethnicity: other (reference: white)	−0.59 (−1.01 to −0.17)	0.006	−0.28 (−0.68 to 0.12)	0.17
Marital status: married or in civil partnership (reference: single)	0.49 (0.39 to 0.60)	<0.001*	0.54 (0.44 to 0.64)	<0.001*
Marital status: separated, divorced or widowed (reference: single)	0.40 (0.27 to 0.54)	<0.001*	0.44 (0.30 to 0.57)	<0.001*
Income	0.12 (0.07 to 0.17)	<0.001*	0.07 (0.02 to 0.11)	0.004
Area level deprivation (level 2)				
Proportion of neighbourhoods in ICS/HB in top 10% most deprived	0.13 (−0.60 to 0.87)	0.723	0.17 (−0.53 to 0.86)	0.64
Prescreening symptoms of depression and anxiety (level 1)				
Average PHQ-2 and GAD-2 score			−0.25 (−0.29 to −0.20)	<0.001*
Perceptual and contextual drivers of care-seeking intention (level 1)				
Knowledge (MAKS composite)			0.49 (0.45 to 0.54)	<0.001*
Tolerance for people with mental illness (CAMI subscale)			0.22 (0.17 to 0.26)	<0.001*
Prejudice and exclusion towards people with mental illness (CAMI subscale)			−0.07 (−0.12 to -0.03)	0.001*

Continued

Table 1 Continued

	Model 1: demographic only	Model 2: demographics, symptoms and perceptual and contextual drivers	
Barriers to accessing care (BACE overall composite)		−0.37 (−0.42 to -0.33)	<0.001*
External experiences of mental illness (level 1)			
Living/lived with someone with mental illness (reference: no)		0.02 (−0.07 to 0.12)	0.63
Work/worked with someone with mental illness (reference: no)		0.01 (−0.08 to 0.11)	0.75
Has/had neighbour with mental illness (reference: no)		0.06 (−0.03 to 0.15)	0.21
Has/had a close friend with mental illness (reference: no)		0.16 (0.06 to 0.25)	0.002
Random effects			
σ^2	7.40	6.72	
$\tau_{00\ ICS/HB}$	0.02	0.02	
Model metrics			
ICC	0.003	0.003	
AIC	83 110.45	81 540.72	
BIC	83 249.61	81 749.46	
$N_{ICS/HB}$	64	64	
Observations	16 835	16 835	
Marginal R^2/Conditional R^2	0.081/0.084	0.168/0.170	

σ^2 specifies the residual variance of the model. $\tau_{00\ ICS/HB}$ specifies the variance due to the ICS/HB groups (level 2).
*Indicates p<0.0012 (Bonferroni corrected α, to correct for multiple testing for all the significance of 41 coefficients across the 2 models).
AIC, Akaike information criterion; BIC, Bayesian information criterion; CAMI, Community Attitudes towards the Mentally Ill; GAD-2, Generalised Anxiety Disorder-2; HB, health board; ICC, intraclass correlation coefficient; ICS, integrated care systems; MAKS, Mental Health Knowledge Schedule; PHQ-2, Patient Health Questionnaire-2.

Some areas, such as Northamptonshire ICS (62.1%; 95% CI 54.8% to 69.8%) and Dorset ICS (60.7; 95% CI 54.7% to 68.1%) showed a greater openness to using self-help materials (eg, mobile apps, books, websites, self-help/computerised therapy).

DISCUSSION

Principal findings

One in five people are reluctant to seek mental healthcare. Knowledge about mental health, attitudes towards others with mental illness and barriers to care-seeking, which are all perceptual and contextual factors that are amenable to change, all have an association with mental health care-seeking intention, indicating the need to look at these holistically. We found mental health knowledge to have the greatest association with care-seeking intention but minimal geographical variation across ICS/HBs in the UK. We found substantial geographical variation and complex profiles in the distribution of prescreening symptoms of depression and anxiety, care-seeking intention, attitudes towards others with mental health and specific stigma-related, attitudinal (negative attitudes towards treatments) and instrumental barriers to care. While in-person one-to-one therapy with a mental health professional was the most preferred mode of mental health support, more than half of respondents were open to virtual forms of therapy, such as video and telephone sessions and self-guided programmes. Patterns of preference for different modes of mental health support also varied across ICS/HBs. Overall, our locally relevant and actionable data and findings suggest possible interventions that may improve care-seeking intention, and indicate which of these interventions need to be geographically tailored to have maximal effect.

Strengths and weaknesses of the study

There are several strengths in this study. Our survey is the most comprehensive and geographically granular to date in assessing the key factors that influence mental health care-seeking intention, using academically validated scales. We examine distributions at the level of ICS/HBs, where decisions about hospital and community-based services, physical and mental health, and health and social care are made. Our sample size was large and stringent quotas were set to ensure coverage across all

Table 2 Prevalence of prescreening symptoms of depression and anxiety, mental health care-seeking intention and perceptual and contextual drivers of care-seeking intention across integrated care systems/health boards (ICS/HB) across the UK

	UK mean (95% CI)	Mean (SD) across ICS/HB*	ICS/HB with lowest mean or prevalence (95% CI)	ICS/HB with highest mean or prevalence (95% CI)
Prevalence of prescreening symptoms of depression and anxiety				
Symptoms of depression (PHQ-2 mean; 0–6 scale) N_{NA}=800	2.05 (2.02 to 2.08)	2.01 (0.21)	1.59 (1.20 to 2.00) Somerset ICS	2.43 (2.15 to 2.70) Greater Glasgow and Clyde Health Board
Prescreened for depression (PHQ-2≥3 prevalence) N_{NA}=800	33.5% (32.9% to 34.5%)	32.9% (4.4%)	22.4% (14.1% to 31.4%) Somerset ICS	43.7% (33.8% to 53.1%) Gloucestershire ICS
Symptoms of anxiety (GAD-2 mean; 0–6 scale) N_{NA}=768	2.15 (2.12 to 2.19)	2.14 (0.21)	1.56 (1.03 to 2.11) Powys Teaching Health Board	2.56 (2.28 to 2.86) Greater Glasgow and Clyde Health Board
Prescreened for anxiety (GAD2≥3 prevalence) N_{NA}=768	34.8% (34.1% to 35.6%)	34.5% (4.1%)	24.3% (16.9% to 33.8%) Forth Valley Health Board	41.4% (37.7% to 46.9%) Greater Manchester Health and Social Care Partnership
Prescreened for either depression or anxiety (prevalence) N_{NA}=759	43.4% (42.6% to 44.3%)	42.8% (4.7%)	30.5% (18.7% to 42.9%) Powys Teaching Health Board	51.4% (45.8% to 56.5%) The Black Country and West Birmingham ICS
Care-seeking intention				
Would delay for more than 6 months or not seek at all (prevalence) N_{NA}=0	20.5% (19.8% to 21.2%)	20.2% (3.1%)	8.3% (3.6% to 14.2%) Forth Valley Health Board	25.7% (19.5% to 33.5%) Shropshire and Telford and Wrekin ICS
Likelihood of seeking care (mean; 0–10 scale) N_{NA}=0	6.86 (6.82 to 6.91)	6.90 (0.27)	6.20 (5.92 to 6.51) The Black Country and West Birmingham ICS	7.81 (7.14 to 8.33) Forth Valley Health Board
Perceptual and contextual drivers of care-seeking intention				
Mental health knowledge (MAKS mean; 6–30 scale) N_{NA}=0	21.7 (21.6 to 21.7)	21.7 (0.3)	21.0 (20.71 to 21.34) East London Health and Care Partnership	22.9 (22.05 to 23.75) Borders Health Board
Tolerance and support subscale (CAMI mean; 0–100 scale) N_{NA}=218	71.9 (71.7 to 72.3)	72.4 (2.6)	65.7 (63.83 to 68.12) East London Health and Care Partnership	79.4 (73.84 to 84.72) Borders Health Board
Prejudice and exclusion subscale (CAMI mean; 0–100 scale) N_{NA}=215	28.3 (27.8 to 28.6)	27.1 (4.1)	18.9 (13.25 to 26.13) Borders Health Board	39.5 (36.41 to 41.99) East London Health and Care Partnership
Barriers (BACE mean; 0–3 scale) N_{NA}=0	1.14 (1.13 to 1.15)	1.13 (0.09)	0.87 (0.74 to 1.03) Forth Valley Health Board	1.32 (1.25 to 1.40) East London Health and Care Partnership

Continued

Table 2 Continued

	UK mean (95% CI)	Mean (SD) across ICS/HB*	ICS/HB with lowest mean or prevalence (95% CI)	ICS/HB with highest mean or prevalence (95% CI)
Stigma-related barriers (BACE subscale mean; 0–3) N_{NA}=0	1.15 (1.13 to 1.16)	1.14 (0.10)	0.86 (0.72 to 1.03) Forth Valley Health Board	1.34 (1.22 to 1.49) Swansea Bay University Health Board
Attitudinal barriers (BACE subscale mean; 0–3) N_{NA}=0	1.20 (1.19 to 1.21)	1.19 (0.08)	0.93 (0.82 to 1.07) Forth Valley Health Board	1.34 (1.24 to 1.48) Swansea Bay University Health Board
Instrumental barriers (BACE subscale mean; 0–3) N_{NA}=0	1.04 (1.03 to 1.05)	1.02 (0.09)	0.79 (0.64 to 0.99) Borders Health Board	1.27 (1.19 to 1.35) East London Health and Care Partnership
External experience of mental illness (RIBS)				
Living with or lived with someone with mental health problem (prevalence) N_{NA}=841	40.2% (39.5% to 41.1%)	40.6% (4.0%)	31.7% (24.5% to 38.0%) Coventry and Warwickshire ICS	49.1% (43.5% to 54.7%) Norfolk and Waveney Health and Care Partnership
Working with or worked with someone with mental health problem (prevalence) N_{NA}=2322	34.0% (33.3% to 34.9%)	34.5% (4.1%)	26.6% (16.3% to 37.95%) Dumfries and Galloway Health Board	45.9% (37.3% to 54.8%) Tayside Health Board
Currently have or ever had neighbour with mental health problem (prevalence) N_{NA}=4505	25.5% (24.9% to 26.3%)	25.4% (3.9%)	18.2% (8.6% to 29.7%) Powys Teaching Health Board	35.4% (28.9% to 40.8%) Greater Glasgow and Clyde Health Board
Currently have or ever had close friend with mental health problem (prevalence) N_{NA}=1437	51.5% (50.9% to 52.5%)	52.0% (4.8%)	42.8% (33.8% to 53.5%) Frimley Health and Care ICS	65.4% (50.9% to 79.7%) Borders Health Board

*Mean across 61 ICS/HBs, excluding 3 HBs with low sample sizes.
CAMI, Community Attitudes towards the Mentally Ill; GAD-2, Generalised Anxiety Disorder-2; MAKS, Mental Health Knowledge Schedule; N_{NA}, number of participants with missing data for variable; PHQ-2, Patient Health Questionnaire-2.

179 ITL regions, allowing estimates in 61 out of 64 ICS/HBs, excluding only 3 remote Scottish HBs. We produce adjustment weights using regional distributions instead of national, which again results in more accurate representation of the estimates at the ICS/HB level.

However, there are also limitations. Quota sampling is a non-probability sampling procedure which means that not all members of the population have an equal chance of participating in the study. Quota sampling is believed to be closest in representativeness to probability sampling,[50 51] compared with the other non-probability sampling methods. Studies have also shown that both quota sampling and probability sampling are often subject to similar levels of selection bias.[43] Probability sampling is not feasible with respect to cost and time when aiming to recruit with adequate coverage across all the ICS/HBs in the UK. The speed and breadth of our data collection from quota sampling was also desirable given the exploratory nature of this study.

The sample sizes within each ICS/HB ranged from 70 to 820. These are large in the context of the breadth of our survey, but even larger sample sizes can provide more precise estimates with smaller CIs. We showed a broad coverage of demographics and made a concerted effort to reach population distributions of demographics at the UK and regional level, but this was more difficult to achieve at lower geographical levels. Therefore, we do not break down our ICS/HB results by demographic subgroups, but this would be the next step given the significant prediction of demographics on care-seeking

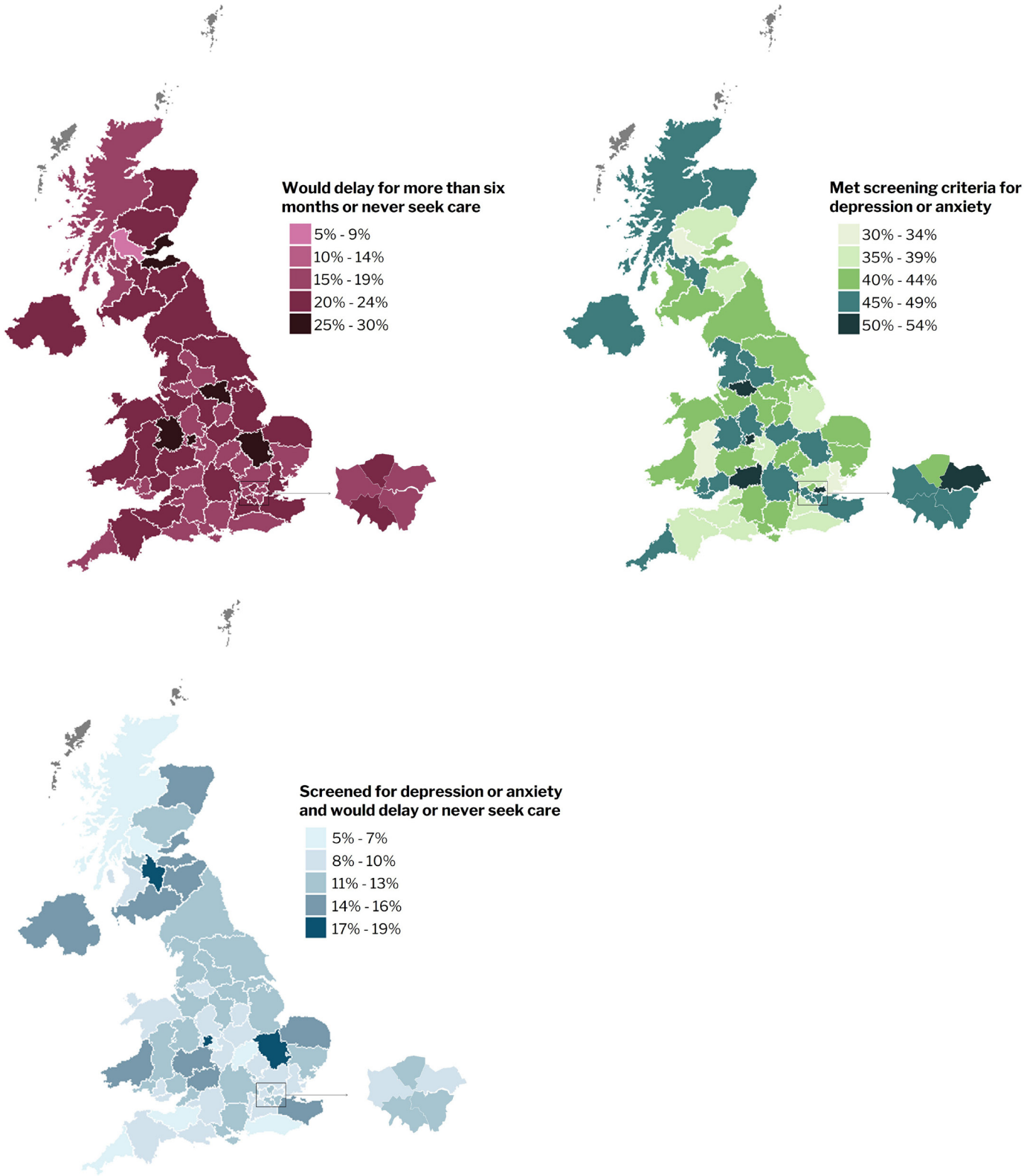

Figure 1 Prevalence of reluctance to seeking mental healthcare and those who met screening criteria for depression or anxiety, and a combined measure of individuals who were screened for depression or anxiety and also reported that they would delay or never seek care. Regions represent ICS/HBs. Darker colours represent greater risk. HBs, health boards; ICS, integrated care systems.

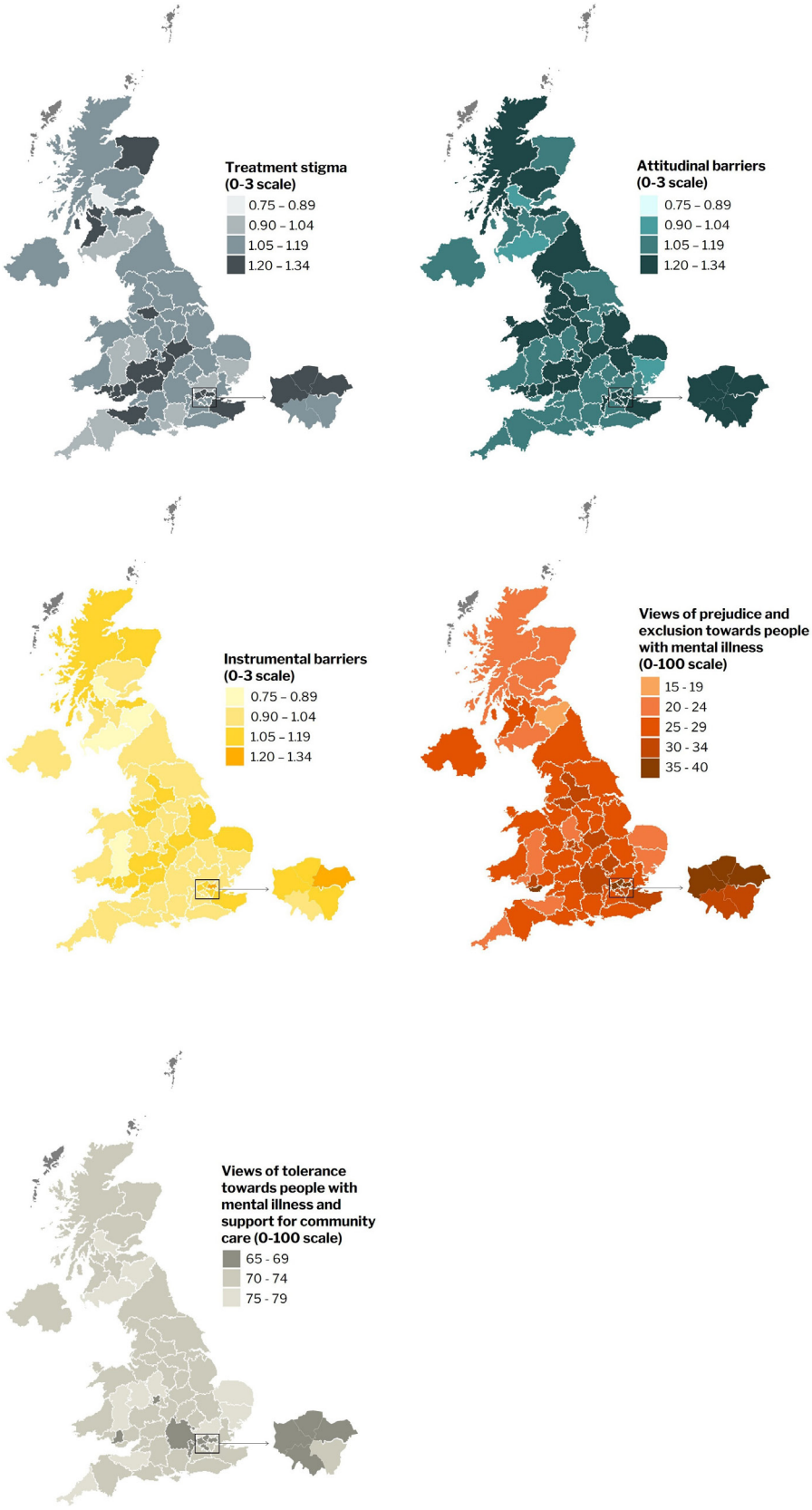

Figure 2 Geographical variation in the prevalence of barriers to mental healthcare access and attitudes to mental health. Darker colours represent more negative attitudes and barriers.The geographical variation in knowledge (MAKS) is not displayed given the lack of a meaningful range in average scores across ICS/HBs (table 2), compared with the range at the individual level across the UK (see online supplemental table 5). We do not display components of the experience scale (RIBS) given the lack of significant association in our individual multilevel model (table 1), the lack of correlation with ICS/HB likelihood to seek care and the lack of variation indicated by the overlapping CIs between the maximum and minimum prevalence ICS/HBs (table 2).

Figure 3 Distribution of prevalence of top attitudinal, stigma and instrumental barriers across ICS/HBs.On the dotplot, the position of the grey dots on the line indicates prevalence in ICS/HBs. The legend displays the top five ICS/HBs with the highest % who would delay for more than 6 months or never seek care for a mental health difficulty. The radar plot displays the prevalence of the top barriers in the same five ICS/HBs. HBs, health boards; ICS, integrated care systems.

intention, even when controlling for the perceptual and contextual drivers of care-seeking.

Our measures are all based on self-report. This is the best way to assess perceptions of the individual but we recognise the influence of recall bias and social desirability. In order to keep the length of the survey acceptable for respondents, we chose to use the PHQ2 and GAD2 as opposed to the full PHQ9 and GAD7 to assess depression and anxiety respectively. Inferences made from the two-item scales tend to be less accurate than the longer scales,[52 53] and both are recommended to be used as 'prescreening' or 'first step' tools before further assessment using the longer scales. Throughout we refer to individuals as having 'prescreening' symptoms rather than diagnosing them with depression and/or anxiety. With respect to the multilevel regression model, the inferences around causality we can make based on the associations found are limited due to the cross-sectional data. While this is the most comprehensive model predicting care-seeking to date, there are likely unknown predictors/covariates not captured that would increase the predictive power of the model.

We find that more than half of respondents even in the lowest household income band (under £25 000) are open to remote forms of care. However, a limitation of this current study is that our income measure can only be a rough proxy for socioeconomic status and we cannot fully identify those living in poverty and experiencing social deprivation. Digital poverty is an inability to interact with digital platforms and the online world fully due to socioeconomic disadvantages.[54] And those experiencing digital poverty are often also most in need of healthcare support.[55] Understanding openness to remote forms of care across those who are and are not experiencing digital poverty was beyond the scope of this study, but is an important area of future research. As remote forms of care are increasingly used, further research needs to examine if and how individuals living with digital poverty are being left behind.

Comparison of findings with other studies

Our findings replicate and expand on previous comparable studies, with knowledge being the most predictive of care-seeking.[8] The variance explained in our model is greater at 17% compared with the previous 7% found by Rüsch *et al*,[8] likely due to the addition of demographic covariates, including education, religion, marital status, income and neighbourhood deprivation, and the addition of barriers to care-seeking. Older, female, more educated, Christian, married, divorced, separated or widowed and higher income individuals, along with individuals with lower levels of prescreening symptoms of depression and anxiety, were associated with greater likelihood of care-seeking in our study. These symptomatology and demographic differences reflect patterns found in previous studies, though demographic results have been shown to be mixed in the past.[8 17 18] The 17% of variance explained in our current model is moderate and similar to models predicting mental health care-seeking in other contexts.[8 56 57] While the current survey implemented is the most comprehensive survey on mental health care-seeking to care, there are still potential factors not captured in our survey that may explain more of the variance in care-seeking intention. For example, certain contextual factors such as actual proximity to mental healthcare services, accessibility of public transportation, local funding of mental health resources and community cohesion, are not captured in the current study, but could be important.

Previous studies have examined mental health service uptake in England, showing wide geographical variation, using public health service utilisation data.[13 14] As opposed to uptake measures, which cannot disentangle between care-seeking behaviour and service provisioning and accessibility, we are able to isolate the individual perceptual aspect, and, for the first time, identify geographical variation in the drivers. The geographical variation found could be due to structural and societal characteristics. Policies within each ICS/HB could lead to differences in the degree of systemic discrimination against people with mental illnesses.[58] Discriminatory practices on mental health, for example, allocating reduced funding to mental health services,[59] could feed into local attitudes. Media coverage of mental illness also varies by geographical region[60] which influences attitudes and perceptions. Furthermore, communities could differ in their levels of social cohesion, inclusivity and social participation, which may influence the degree of integration of people with mental illnesses in communities and therefore familiarity with mental illnesses.[61]

Implications for policy and practice

The Time to Change programme was an effective campaign run in England from 2007 to 2021, that decreased stigma against mental illness and promoted social inclusion of those with mental illness.[5] Our findings suggest that such interventions need to be continued as there is still substantial hesitation to care-seeking in many parts of the UK, and that they need to be implemented in a geographically tailored way to have maximal effect. Campaigns to reduce stigma need to be incorporated holistically with other strategies to improve attitudes towards mental health treatments and policies to reduce structural barriers to care. The fact that mental health knowledge is the most predictive of care-seeking intention but there is very minimal geographical variation across ICS/HBs suggests that this may be one factor that could benefit from a UK-level intervention, without the need for localised tailoring.

Our findings also emphasise the importance of detailed surveying of the range of perceptual and contextual drivers of care, and that this needs to be geographically granular covering all parts of the UK: national and even regional-level statistics cannot give actionable insights that local public health leaders can use to implement change. We have used our locally relevant and actionable data to develop a public and free to use data explorer (https://mentalhealth.surgoventures.org/uk), providing health leaders with deep local insights into the needs of people dealing with mental health challenges in their communities and allowing comparison across ICS/HBs across the UK.

Our analysis on the preferred modes and channels of support provide interesting insights into people's openness towards using remote forms of care. These serve as a strategy that could be used to tackle the issues of treatment provider shortages and excessively long wait times for mental illness treatment,[62 63] which are serious barriers to care (exacerbated by COVID-19) once people have the intention to access it. However, as discussed above, further research is needed to examine the experiences and attitudes of those living in digital poverty, and care must be taken to prevent the widening of the existing digital divide in care access.[55] Our data also suggest areas in the UK that may benefit more from interventions to improve mental health or mental healthcare access implemented through the workplace or through social media, such as London, while other areas may see greater uptake of self-guided programmes, for example, in Northamptonshire and Dorset, if they were to be made readily available and accessible.

Unanswered questions and future research

While our research identified the relative impact of perceptual and contextual drivers on care-seeking intention, methods which provide insights into causality now need to be used to confirm the factors that will causally impact intention. Furthermore, it will be important to explore mediation and moderation pathways to care-seeking intention. While we have provided novel insights into the variability of care-seeking intention and its drivers, further research needs to go deeper to provide even greater hyperlocal insights, for example, down to local authority levels, and especially in investigating the differences between demographic groups and those most vulnerable to mental illness. Having found the existence

of geographical variation, we now need a deeper understanding of how the social and environmental context influences this variation, as this will give insights into novel interventions.

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Contributors RAHW (guarantor): designed the study and data collection programme, developed survey instrument, analysed the data and provided all the results for this manuscript, interpreted findings, wrote the current manuscript, provided final approval of current manuscript. PS: wrote the funding applications, designed the study and data collection programme, supported survey instrument development, supported data analysis, interpreted findings, critically reviewed and revised the current manuscript drafts, provided final approval of current manuscript. TT: managed the funding, applied for ethics approval, designed the study and data collection programme, developed survey instrument, supported data analysis, interpreted findings, critically reviewed and revised the current manuscript drafts, provided final approval of current manuscript. ZK: conducted literature review, supported survey instrument development, critically reviewed and revised the current manuscript drafts, provided final approval of current manuscript. HK: interpreted findings, critically reviewed and revised the current manuscript drafts, provided final approval of current manuscript. SKS: wrote the funding applications, managed the funding, provided reports to grant funders, designed the study, interpreted findings, critically reviewed and revised the current manuscript drafts, provided final approval of current manuscript. The corresponding author attests that all listed authors meet authorship criteria, that no others meeting the criteria have been omitted and acts as a guarantor.

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Geographical variation in perceptions, attitudes and barriers to mental health care-seeking across the UK: an observational study

Supplementary Tables

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Supplementary Table 1 Pearson correlations across individuals across likelihood to seek mental health care, symptoms of depression and anxiety, perception, mental health knowledge, attitudes to mental health and barriers and mental healthcare (imputed dataset)

	E2	Average PHQ2 and GAD2	PHQ2	GAD2	MAKS	Tolerance (CAMI)	Prejudice (CAMI)	Overall BACE	Stigma (BACE)	Instrumental (BACE)	Attitudinal (BACE)
E2	1.00	-0.19	-0.19	-0.16	0.25	0.22	-0.13	-0.22	-0.20	-0.15	-0.25
Average PHQ2 and GAD2	-0.19	1.00	0.94	0.94	-0.05	-0.03	0.05	0.33	0.31	0.32	0.30
PHQ2	-0.19	0.94	1.00	0.76	-0.08	-0.05	0.07	0.31	0.28	0.31	0.28
GAD2	-0.16	0.94	0.76	1.00	-0.02	-0.02	0.02	0.31	0.29	0.30	0.28
MAKS	0.25	-0.05	-0.08	-0.02	1.00	0.43	-0.26	-0.07	-0.06	-0.08	-0.07
Tolerance (CAMI)	0.22	-0.03	-0.05	-0.02	0.43	1.00	-0.31	-0.10	-0.10	-0.10	-0.08
Prejudice (CAMI)	-0.13	0.05	0.07	0.02	-0.26	-0.31	1.00	0.12	0.11	0.15	0.08
Overall BACE	-0.22	0.33	0.31	0.31	-0.07	-0.10	0.12	1.00	0.95	0.91	0.93
Stigma (BACE)	-0.20	0.31	0.28	0.29	-0.06	-0.10	0.11	0.95	1.00	0.79	0.82

Instrumental (BACE)	-0.15	0.32	0.31	0.30	-0.08	-0.10	0.15	0.91	0.79	1.00	0.80
Attitudinal (BACE)	-0.25	0.30	0.28	0.28	-0.07	-0.08	0.08	0.93	0.82	0.80	1.00

Note. All correlations are significant with $p<0.05$

Supplementary Table 2 Pearson correlations across individuals across likelihood to seek mental health care, depressive and anxiety symptoms, perception, mental health knowledge, attitudes to mental health and barriers and mental healthcare (unimputed dataset)

	E2	Average PHQ2 and GAD2	PHQ2	GAD2	MAKS	Tolerance (CAMI)	Prejudice (CAMI)	Overall BACE	Stigma (BACE)	Instrumental (BACE)	Attitudinal (BACE)
E2	1.00	-0.19	-0.20	-0.16	0.25	0.22	-0.13	-0.22	-0.20	-0.15	-0.25
Average PHQ2 and GAD2	-0.19	1.00	0.94	0.94	-0.05	-0.04	0.05	0.34	0.31	0.33	0.31
PHQ2	-0.19	0.94	1.00	0.75	-0.07	-0.04	0.07	0.32	0.29	0.31	0.29
GAD2	-0.16	0.94	0.75	1.00	-0.01	-0.02	0.02	0.32	0.30	0.31	0.29
MAKS	0.25	-0.05	-0.07	-0.01	1.00	0.43	-0.25	-0.07	-0.06	-0.08	-0.07
Tolerance (CAMI)	0.22	-0.04	-0.04	-0.02	0.43	1.00	-0.31	-0.10	-0.10	-0.10	-0.08

Prejudice (CAMI)	-0.13	0.05	0.07	0.02	-0.25	-0.31	1.00	0.13	0.11	0.16	0.09
Overall BACE	-0.22	0.34	0.32	0.32	-0.07	-0.10	0.13	1.00	0.95	0.91	0.93
Stigma (BACE)	-0.20	0.31	0.29	0.30	-0.06	-0.10	0.11	0.95	1.00	0.79	0.82
Instrumental (BACE)	-0.15	0.33	0.31	0.31	-0.08	-0.10	0.16	0.91	0.79	1.00	0.80
Attitudinal (BACE)	-0.25	0.31	0.29	0.29	-0.07	-0.08	0.09	0.93	0.82	0.80	1.00

Note. All correlations are significant with $p<0.05$

Supplementary Table 3 Generalized variance-inflation factor

	GVIF	Df	GVIF^(1/(2*Df))
Age	2.14	1.00	1.46
Gender	1.11	1.00	1.05
Qualifications	1.20	2.00	1.05
Work status	1.30	1.00	1.14
Religion	1.66	2.00	1.14
Ethnicity	1.64	4.00	1.06
Marital status	1.50	2.00	1.11
Income	1.25	1.00	1.12
Average PHQ2 and GAD2	1.36	1.00	1.17
Knowledge (MAKS)	1.31	1.00	1.14
Tolerance (CAMI)	1.35	1.00	1.16
Prejudice (CAMI)	1.25	1.00	1.12
Stigma (BACE)	3.83	1.00	1.96
Instrumental (BACE)	3.47	1.00	1.86
Attitudinal (BACE)	3.99	1.00	2.00
Living/lived with someone with mental illness (reference: no)	1.37	1.00	1.17

Work/worked with someone with mental illness (reference: no)	1.38	1.00	1.17
Has/had neighbour with mental illness (reference: no)	1.35	1.00	1.16
Has/had close friend with mental illness	1.52	1.00	1.23
% LSOAs in most deprived 10% nationally (IMD)	1.01	1.00	1.00

Supplementary Table 4. Sample Descriptions

	Recruited participants before exclusions n (%)	**Participants after exclusions n (%)**	**Participants trimmed weight adjusted n (%)**	**UK population (18+) * (%)**
Age groups (years)				
18 - 24	2412 (14.0%)	2293 (13.6%)	1985 (11.8%)	10.6%
25 - 34	3494 (20.3%)	3330 (19.8%)	3119 (18.5%)	17.0%
35 - 44	3098 (18.0%)	3030 (18.0%)	2867 (17.0%)	16.0%
45 - 54	3099 (18.0%)	3067 (18.2%)	2958 (17.6%)	16.9%
55 - 64	2784 (16.2%)	2768 (16.4%)	2719 (16.1%)	15.8%
65+	2351 (13.6%)	2347 (13.9%)	3188 (18.9%)	23.7%
Sex				
Female	9316 (54.0%)	9144 (54.3%)	8754 (52.1%)	51.09%
Male	7860 (45.6%)	7630 (45.3%)	8017 (47.6%)	48.91%
NA	62 (0.4%)	61 (0.4%)	54 (0.3%)	NA
Ethnicity				
White	15205 (88.2%)	14881 (88.4%)	14612 (86.8%)	87.9%
Mixed	354 (2.1%)	343 (2.0%)	249 (1.5%)	1.3%
Indian	305 (1.8%)	286 (1.7%)	460 (2.7%)	2.6%
Pakistani or Bangladeshi	394 (2.3%)	375 (2.2%)	369 (2.2%)	2.0%
Black	538 (3.1%)	531 (3.2%)	527 (3.1%)	3.0%

Other	381 (2.2%)	366 (2.2%)	554 (3.3%)	3.2%
NA	61 (0.4%)	53 (0.3%)	63 (0.4%)	NA
Region				
North East (England)	728 (4.2%)	716 (4.3)	677 (4.0%)	4.1%
North West (England)	1972 (11.4%)	1936 (11.5%)	1856 (11.0%)	11.0%
Yorkshire and The Humber (England)	1220 (7.1%)	1196 (7.1%)	1306 (7.8%)	8.2%
East Midlands (England)	1187 (6.9%)	1144 (6.8%)	1188 (7.1%)	7.3%
West Midlands (England)	1502 (8.7%)	1460 (8.7%)	1474 (8.8%)	8.8%
East of England	1462 (8.5%)	1438 (8.5%)	1514 (9.0%)	9.3%
London	2125 (12.3%)	2043 (12.1%)	2307 (13.7%)	13.1%
South East (England)	2143 (12.4%)	2097 (12.5%)	2247 (13.3%)	13.7%
South West (England)	1241 (7.2%)	1216 (7.2%)	1392 (8.3%)	8.6%
Wales	1092 (6.3%)	1065 (6.3%)	867 (5.2%)	4.8%
Scotland	1872 (10.9%)	1844 (11.0%)	1496 (8.9%)	8.4%
Northern Ireland	694 (4.0%)	680 (4.4%)	513 (3.1%)	2.7%

*https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/analysisofpopulationestimatestoolforuk
https://www.nomisweb.co.uk/census/2011/ks201uk

Supplementary Table 5. Descriptive statistics for outcome and predictor variables

	Mean (SD)	**Range**
Symptoms of depression and anxiety		
PHQ2	2.07 (2.02)	0 - 6
GAD2	2.22 (2.03)	0 - 6
Care-seeking intention		
Likelihood to seek mental healthcare	6.84 (2.82)	0 - 10
Perceptual and contextual drivers of care seeking intention		
Knowledge (MAKS composite)	21.81 (3.17)	9 - 30
Tolerance for people with mental illness (CAMI subscale)	72.26 (18.11)	0 - 100
Prejudice and exclusion towards people with mental illness (CAMI subscale)	27.39 (24.46)	0 - 100
Barriers to accessing care (BACE overall composite)	1.16 (0.7)	0 - 3

Note. For categorical variables, see descriptives presented in Table 2

Supplementary Table 6. Regional and national prevalence and estimates

	PHQ2	Screened for depression	GAD2	Screened for anxiety	Screened for either depression or anxiety	Delay for more than 6 months or not seek at all	Likelihood to seek care	Mental health knowledge (MAKS)	Tolerance and support subscale (CAMI)	Prejudice and exclusion subscale (CAMI)	Barriers (overall BACE)	Stigma related barriers (BACE subscale)	Attitudinal barriers (BACE subscale)	Instrumental barriers (BACE subscale)
North East	1.95 (1.78 to 2.12)	31.11 (27.51 to 35.24)	2.11 (1.95 to 2.28)	33.35 (29.55 to 37.48)	41.41 (37.39 to 45.77)	20.5 (17.08 to 23.77)	6.95 (6.72 to 7.18)	21.82 (21.56 to 22.09)	73.25 (71.56 to 74.79)	27.28 (25.25 to 29.47)	1.14 (1.09 to 1.21)	1.15 (1.09 to 1.22)	1.21 (1.15 to 1.28)	1.04 (0.98 to 1.1)
North West	2.18 (2.07 to 2.28)	36.25 (34.05 to 38.8)	2.25 (2.15 to 2.34)	37.19 (34.89 to 39.37)	45.89 (43.56 to 48.36)	20.68 (18.79 to 22.79)	6.89 (6.77 to 7.02)	21.6 (21.47 to 21.78)	71.67 (70.81 to 72.69)	28.24 (27.02 to 29.3)	1.17 (1.14 to 1.21)	1.19 (1.15 to 1.23)	1.23 (1.2 to 1.26)	1.07 (1.04 to 1.11)
Yorkshire and the Humber	2.02 (1.9 to 2.16)	33.25 (30.67 to 36.51)	2.12 (1.98 to 2.24)	34.36 (31.34 to 37.31)	44.17 (41.37 to 47.3)	22.03 (19.38 to 24.94)	6.78 (6.59 to 6.95)	21.7 (21.5 to 21.92)	72.3 (71.1 to 73.6)	28.85 (27.28 to 30.45)	1.11 (1.06 to 1.15)	1.12 (1.06 to 1.17)	1.16 (1.12 to 1.21)	1.01 (0.97 to 1.06)
East Midlands	1.98 (1.86 to 2.12)	32.13 (29.52 to 35.4)	2.07 (1.95 to 2.21)	33.18 (30.52 to 36.11)	42.01 (39.23 to 45.28)	20.39 (18.35 to 23.06)	6.82 (6.65 to 6.97)	21.58 (21.38 to 21.78)	72.65 (71.56 to 73.93)	27.86 (26.22 to 29.38)	1.14 (1.09 to 1.19)	1.16 (1.1 to 1.22)	1.2 (1.16 to 1.25)	1.03 (0.98 to 1.07)
West Midlands	2.11 (2 to 2.23)	34.59 (32.11 to 37.48)	2.22 (2.11 to 2.35)	36.26 (33.58 to 38.76)	45.1 (42.32 to 47.94)	21.08 (18.74 to 23.43)	6.72 (6.55 to 6.88)	21.54 (21.39 to 21.74)	71.72 (70.58 to 72.72)	28.86 (27.4 to 30.13)	1.14 (1.1 to 1.18)	1.16 (1.12 to 1.21)	1.19 (1.15 to 1.23)	1.04 (0.99 to 1.08)
East of England	1.86 (1.75 to 1.98)	30.71 (28.03 to 33.3)	2.03 (1.92 to 2.14)	33.12 (30.42 to 35.42)	39.99 (37.04 to 42.38)	19.68 (17.51 to 21.87)	7.03 (6.87 to 7.19)	21.82 (21.66 to 22)	74.36 (73.44 to 75.35)	25.79 (24.46 to 27)	1.08 (1.05 to 1.12)	1.08 (1.04 to 1.13)	1.16 (1.12 to 1.19)	0.98 (0.95 to 1.02)
London	2.16 (2.04 to 2.26)	36.5 (34.11 to 38.92)	2.22 (2.12 to 2.32)	36.34 (34.07 to 38.58)	46.82 (44.55 to 49.23)	19.26 (17.37 to 21.48)	6.68 (6.55 to 6.82)	21.26 (21.11 to 21.44)	67.99 (67.21 to 68.97)	36.07 (34.82 to 37.04)	1.21 (1.18 to 1.24)	1.22 (1.17 to 1.25)	1.26 (1.22 to 1.29)	1.15 (1.11 to 1.18)
South East	2.02 (1.94 to 2.12)	32.9 (30.98 to 35.07)	2.07 (1.99 to 2.17)	33.67 (31.75 to 35.89)	41.95 (39.87 to 44.19)	20.88 (19.18 to 22.82)	6.82 (6.69 to 6.95)	21.71 (21.55 to 21.85)	71.72 (70.87 to 72.45)	27.53 (26.3 to 28.56)	1.11 (1.08 to 1.15)	1.11 (1.07 to 1.15)	1.18 (1.16 to 1.22)	1.02 (0.99 to 1.06)
South West	1.91 (1.79 to 2.02)	30.14 (27.64 to 32.81)	1.99 (1.88 to 2.1)	31.71 (29.22 to 34.18)	39.51 (37.07 to 42.38)	19.31 (17.08 to 21.71)	7.08 (6.92 to 7.25)	21.8 (21.63 to 21.99)	72.46 (71.4 to 73.55)	25.25 (23.97 to 26.47)	1.1 (1.06 to 1.14)	1.11 (1.06 to 1.16)	1.16 (1.12 to 1.21)	1 (0.96 to 1.05)
Wales	2.08 (1.96 to 2.22)	33.24 (30.24 to 36.38)	2.23 (2.11 to 2.37)	35.67 (32.59 to 38.33)	43.89 (40.56 to 46.82)	20.17 (17.72 to 22.63)	6.92 (6.71 to 7.09)	21.63 (21.44 to 21.83)	72.23 (70.82 to 73.32)	26.94 (25.31 to 28.43)	1.18 (1.14 to 1.23)	1.2 (1.15 to 1.25)	1.25 (1.21 to 1.3)	1.05 (1 to 1.1)

Scotland	2.09 (1.99 to 2.2)	34.07 (31.77 to 36.64)	2.28 (2.17 to 2.39)	35.68 (33.58 to 38.3)	43.61 (41.38 to 46.33)	20.74 (18.65 to 22.8)	6.99 (6.84 to 7.14)	22.01 (21.84 to 22.17)	73.54 (72.66 to 74.54)	24.11 (22.71 to 25.13)	1.11 (1.07 to 1.15)	1.14 (1.1 to 1.18)	1.16 (1.13 to 1.2)	1 (0.96 to 1.04)
Northern Ireland	2.13 (1.95 to 2.31)	34.82 (30.84 to 38.73)	2.35 (2.16 to 2.53)	38.1 (33.79 to 42.15)	45.01 (40.68 to 49.38)	22.29 (18.51 to 26.12)	6.85 (6.61 to 7.09)	21.93 (21.65 to 22.18)	73.9 (72.55 to 75.26)	26.1 (24.19 to 27.75)	1.13 (1.07 to 1.19)	1.19 (1.11 to 1.25)	1.17 (1.12 to 1.23)	0.99 (0.94 to 1.05)

Supplementary Table 7. ICS/HB level estimates

ICS/HB	Weighted N	% would delay for more than 6 months or not seek at all	% screened for either depression or anxiety	% screened for either depression or anxiety and would delay or never seek care	Mental Health Knowledge Schedule (MAKS) average score	Overall BACE average score	Stigma average score (BACE)	Attitudinal average score (BACE)	Instrumental average score (BACE)	Tolerance and Support average score (CAMI)	Prejudice and Exclusion average score (CAMI)	% LSOAs in most deprived 10% nationally
Greater Manchester Health and Social Care Partnership	530	18.3 (15.2 to 22.3)	50.3 (46.6 to 55.9)	9.5 (7 to 12.5)	21.4 (21.2 to 21.7)	1.2 (1.2 to 1.3)	1.3 (1.2 to 1.4)	1.3 (1.2 to 1.4)	1.1 (1.1 to 1.2)	70.6 (69 to 72.4)	31.5 (29 to 33.8)	23.3%
Cheshire and Merseyside ICS	698	22.2 (18.5 to 25.4)	43.6 (39 to 47)	11.1 (8.2 to 13.5)	21.6 (21.4 to 21.9)	1.2 (1.1 to 1.2)	1.2 (1.1 to 1.2)	1.2 (1.2 to 1.3)	1.1 (1 to 1.1)	71.4 (70.2 to 73.3)	27.8 (25.9 to 29.4)	23.4%
South Yorkshire and Bassetlaw ICS	271	25.6 (19.5 to 31.5)	41.8 (34.7 to 48.5)	12.9 (8.1 to 18.6)	21.3 (20.8 to 21.8)	1.1 (1 to 1.2)	1.1 (1 to 1.2)	1.1 (1 to 1.2)	1 (0.9 to 1.1)	69.7 (66.5 to 72.9)	28.4 (25.4 to 31.3)	21.8%
Staffordshire and Stoke on Trent ICS	258	15.2 (10.6 to 20.7)	47.2 (40.4 to 53.4)	9.3 (5.6 to 14.4)	21.5 (21.1 to 21.9)	1 (0.9 to 1.1)	1.1 (0.9 to 1.2)	1.1 (1 to 1.2)	1 (0.9 to 1.1)	74.8 (72.5 to 77.1)	24.2 (21.5 to 26.9)	9.0%
Shropshire and Telford and Wrekin ICS	176	25.7 (19.5 to 33.5)	46.6 (38.4 to 53.7)	12.7 (7.8 to 18.8)	21.9 (21.5 to 22.4)	1 (0.9 to 1.1)	1 (0.9 to 1.2)	1.1 (1 to 1.2)	0.9 (0.8 to 1)	75.4 (73 to 78.1)	24.8 (20.7 to 28.5)	6.6%
Joined Up Care Derbyshire	283	23.8 (18.6 to 29.5)	42.7 (37.1 to 49.1)	11.4 (8 to 15.8)	21.7 (21.3 to 22.1)	1.1 (1 to 1.2)	1.1 (1 to 1.2)	1.2 (1.1 to 1.3)	1 (0.9 to 1.1)	72.3 (70.4 to 74.6)	25.5 (22.4 to 28.7)	7.2%
Lincolnshire ICS	146	19.8 (13.8 to 27.1)	35.9 (27.6 to 44.6)	12.6 (7.9 to 18.6)	21.4 (20.9 to 21.9)	1.2 (1.1 to 1.3)	1.2 (1 to 1.3)	1.2 (1.1 to 1.4)	1.1 (0.9 to 1.2)	71.6 (68.8 to 74.6)	26.2 (22.5 to 30)	6.9%

Nottingham and Nottinghamshire Health and Care	265	18.6 (14.2 to 24.3)	43.4 (37.6 to 50.4)	9.8 (6.6 to 14.5)	21.6 (21.1 to 22)	1.1 (1 to 1.2)	1.2 (1 to 1.3)	1.2 (1.1 to 1.3)	1 (0.9 to 1.1)	73.7 (70.9 to 76.1)	29.3 (25.9 to 33)	13.5%
Leicester, Leicestershire and Rutland ICS	242	20.2 (14.6 to 26)	45.9 (39.6 to 53.7)	10.2 (6.5 to 15.1)	21.4 (20.9 to 21.9)	1.2 (1.1 to 1.3)	1.2 (1.1 to 1.3)	1.2 (1.1 to 1.3)	1.1 (1 to 1.2)	72.1 (69 to 75.3)	30.8 (26.6 to 34.5)	7.0%
The Black Country and West Birmingham ICS	413	25.2 (20.2 to 29.8)	51.4 (45.8 to 56.5)	17.5 (13.1 to 21.4)	21.5 (21.2 to 21.9)	1.2 (1.1 to 1.3)	1.2 (1.1 to 1.3)	1.2 (1.2 to 1.3)	1.1 (1 to 1.2)	69.5 (67.2 to 71)	32.1 (29.6 to 34.5)	19.1%
Birmingham and Solihull ICS	245	17.7 (12.1 to 22.3)	38.8 (32.8 to 46.8)	6.7 (3.9 to 9.3)	21.3 (20.9 to 21.7)	1.1 (1 to 1.2)	1.1 (1 to 1.3)	1.2 (1.1 to 1.3)	1 (0.9 to 1.1)	69.7 (66.7 to 72.5)	32 (28.5 to 36.6)	36.2%
Coventry and Warwickshire ICS	195	17.3 (12.9 to 23.6)	38.8 (31.7 to 45.7)	9.1 (5.4 to 13.1)	21.5 (21.1 to 22)	1.2 (1.1 to 1.3)	1.2 (1.1 to 1.4)	1.2 (1.1 to 1.3)	1.1 (1 to 1.2)	71.7 (69.3 to 74.9)	27.8 (23.6 to 30.8)	6.4%
Herefordshire and Worcestershire ICS	173	24.4 (17.1 to 31.7)	41.5 (33.7 to 49.4)	15.9 (9.8 to 22.6)	21.7 (21.1 to 22.1)	1.2 (1.1 to 1.3)	1.2 (1.1 to 1.4)	1.3 (1.2 to 1.4)	1.1 (1 to 1.2)	71.5 (68.2 to 74)	29.1 (25.2 to 32.8)	4.0%
Northamptonshire ICS	180	17.5 (12.5 to 24.3)	41.2 (33.9 to 48.7)	6.6 (3.8 to 10.6)	21.8 (21.2 to 22.2)	1.1 (1 to 1.2)	1.1 (1 to 1.2)	1.2 (1.1 to 1.3)	1 (0.9 to 1.1)	73.5 (70.4 to 76.4)	27.5 (23.6 to 31.8)	4.9%
Cambridgeshire and Peterborough ICS	224	25 (18 to 30.7)	46 (38 to 53.3)	16.5 (10.7 to 21.9)	21.9 (21.4 to 22.3)	1.1 (1 to 1.2)	1.1 (1 to 1.2)	1.2 (1.1 to 1.3)	1 (0.9 to 1.1)	74.4 (71.7 to 76.6)	25 (22 to 28.1)	4.1%
Norfolk and Waveney Health and Care Partnership	323	23.2 (18.5 to 28.2)	40.1 (34.4 to 45.3)	14.2 (9.9 to 18.5)	22 (21.7 to 22.4)	1.2 (1.1 to 1.2)	1.1 (1 to 1.2)	1.2 (1.2 to 1.3)	1 (1 to 1.1)	75.1 (73 to 77.5)	23.7 (20.7 to 26.7)	7.4%

Suffolk and North East Essex ICS	203	16.6 (12.1 to 23.5)	41.6 (33.4 to 49.6)	11.3 (6.8 to 17.1)	22.1 (21.6 to 22.5)	1 (0.8 to 1.1)	0.9 (0.8 to 1)	1 (0.9 to 1.1)	0.9 (0.8 to 1)	77 (74.2 to 79.5)	23.2 (20 to 26.4)	6.1%
Bedfordshire, Luton and Milton Keynes ICS	310	17.1 (12.7 to 22)	42.9 (37.1 to 48.9)	8.1 (5 to 11.5)	21.7 (21.3 to 22.1)	1.1 (1 to 1.2)	1.1 (1 to 1.2)	1.2 (1.1 to 1.3)	1 (1 to 1.1)	71.6 (69.1 to 73.6)	30.7 (28 to 34.3)	3.0%
Hertfordshire and West Essex ICS	197	16.2 (11 to 22.9)	39.3 (31.8 to 46.1)	10 (5.4 to 16.1)	21.9 (21.5 to 22.4)	1 (0.9 to 1.1)	1 (0.9 to 1.1)	1.1 (1 to 1.2)	0.9 (0.8 to 1)	75.1 (72.4 to 77)	25 (21.5 to 28.8)	0.1%
Mid and South Essex ICS	290	20.8 (16.1 to 25.1)	33.1 (27.1 to 38.5)	9.9 (6.6 to 13.8)	21.4 (21 to 21.9)	1.1 (1 to 1.2)	1.1 (1 to 1.2)	1.2 (1.1 to 1.2)	1 (0.9 to 1.1)	72.6 (70.5 to 75)	26.9 (23.7 to 30.1)	3.7%
North West London Health and Care Partnership	549	18.7 (15.2 to 22.5)	48.5 (44.2 to 53.8)	9.9 (7.7 to 13.1)	21.2 (20.9 to 21.6)	1.2 (1.1 to 1.3)	1.2 (1.1 to 1.3)	1.2 (1.2 to 1.3)	1.1 (1 to 1.2)	67.5 (65.9 to 69.4)	39.2 (36.7 to 41.7)	2.4%
North London Partners in Health and Care	381	21.1 (17.3 to 26.7)	41.3 (36.6 to 47.7)	11 (7.7 to 15.4)	21.2 (20.9 to 21.6)	1.2 (1.1 to 1.3)	1.2 (1.1 to 1.3)	1.3 (1.2 to 1.3)	1.2 (1.1 to 1.3)	67.7 (65.7 to 69.9)	37 (34 to 39.8)	3.9%
East London Health and Care Partnership	398	17.6 (13.6 to 22.1)	50 (44.9 to 55.5)	9.9 (7.2 to 13.3)	21 (20.7 to 21.3)	1.3 (1.2 to 1.4)	1.3 (1.2 to 1.4)	1.3 (1.3 to 1.4)	1.3 (1.2 to 1.4)	65.7 (63.8 to 68.1)	39.5 (36.4 to 42)	2.9%
Our Healthier South East London	392	19.2 (15.2 to 24.2)	46.4 (41.1 to 51.3)	11.3 (7.9 to 15.4)	21.4 (21.1 to 21.8)	1.2 (1.1 to 1.2)	1.1 (1.1 to 1.2)	1.2 (1.2 to 1.3)	1.1 (1 to 1.2)	70.8 (68.8 to 72.7)	31.1 (28.7 to 34.2)	1.2%
South West London Health and Care Partnership	323	20.1 (14.7 to 25)	47.1 (40.5 to 52.2)	12.4 (8.1 to 16.1)	21.5 (21.1 to 21.9)	1.1 (1 to 1.2)	1.1 (1 to 1.2)	1.2 (1.1 to 1.3)	1 (0.9 to 1.1)	68.6 (66.4 to 71.3)	31.4 (28.1 to 34.4)	0.7%
Kent and Medway ICS	501	24.1 (19.8 to 28.3)	46.8 (42.1 to 52)	14.5 (11.4 to 17.9)	21.8 (21.5 to 22)	1.3 (1.2 to 1.3)	1.3 (1.2 to 1.3)	1.3 (1.3 to 1.4)	1.2 (1.1 to 1.2)	71.1 (69.4 to 72.8)	29.8 (27.1 to 32.5)	6.1%

Frimley Health and Care ICS	97	19.4 (12.7 to 28.8)	42.4 (32.6 to 52.6)	9.1 (4.3 to 15.3)	21.2 (20.6 to 21.9)	1.1 (1 to 1.3)	1.2 (1 to 1.4)	1.2 (1.1 to 1.4)	1 (0.8 to 1.1)	68.8 (65.6 to 72.9)	25.7 (20.9 to 29.8)	0.0%
Cornwall and the Isles of Scilly Health and Social Care Partnership	96	16.6 (8.8 to 25.2)	45.1 (34.7 to 54.8)	5.9 (2 to 11.3)	22.4 (21.8 to 23)	1.1 (0.9 to 1.2)	1 (0.8 to 1.2)	1.2 (1 to 1.3)	1 (0.9 to 1.2)	75.1 (71.7 to 78.5)	20.5 (16.1 to 24.5)	5.2%
Devon ICS	327	20.2 (14.9 to 25.4)	37 (31.3 to 42.9)	10.1 (6.4 to 14)	21.7 (21.3 to 22.1)	1 (0.9 to 1.1)	1 (0.9 to 1.1)	1.1 (1 to 1.2)	0.9 (0.8 to 1)	73.1 (71.1 to 75.5)	24.9 (22.2 to 27.3)	6.4%
Somerset ICS	93	20 (12.1 to 28.8)	35.6 (26.4 to 46.3)	7.3 (2.7 to 12.5)	21.7 (21.1 to 22.3)	1.1 (1 to 1.3)	1.2 (1 to 1.4)	1.2 (1 to 1.3)	1 (0.9 to 1.2)	75.1 (71.4 to 78.6)	23.5 (20.1 to 27.4)	2.8%
Bristol, North Somerset and South Gloucestershire ICS	166	22.7 (16.4 to 29.8)	38.5 (31.6 to 46.9)	12.6 (8 to 18.4)	21.7 (21.3 to 22.1)	1.1 (1 to 1.3)	1.2 (1.1 to 1.3)	1.2 (1.1 to 1.3)	1.1 (1 to 1.2)	70.3 (67.4 to 72.8)	28.9 (25.8 to 33.1)	8.7%
Bath and North East Somerset, Swindon and Wiltshire ICS	216	18 (13.5 to 23.3)	41.6 (34.8 to 48.7)	10 (6.4 to 14.3)	21.7 (21.3 to 22.2)	1.1 (1 to 1.2)	1.1 (1 to 1.2)	1.2 (1.1 to 1.3)	1 (0.9 to 1.1)	72.5 (70.2 to 74.9)	26.2 (23.2 to 29.2)	2.8%
Dorset ICS	198	18.8 (13.3 to 24.3)	35 (27.9 to 41.4)	9.2 (5.3 to 12.7)	21.8 (21.3 to 22.3)	1.1 (1 to 1.2)	1.1 (1 to 1.2)	1.2 (1 to 1.3)	1 (0.8 to 1.1)	71.1 (68.4 to 73.6)	25.1 (22.1 to 28)	3.3%
Hampshire and the Isle of Wight ICS	510	18.1 (15 to 21.7)	40.8 (36.5 to 45.5)	10.7 (8.1 to 13.7)	21.6 (21.3 to 21.9)	1 (0.9 to 1.1)	1 (0.9 to 1.1)	1.1 (1 to 1.1)	0.9 (0.9 to 1)	73 (71.3 to 74.4)	25.2 (23 to 27.1)	4.1%
Gloucestershire ICS	120	16.9 (9.3 to 25.5)	50 (39.2 to 59.1)	14.6 (7.3 to 23)	22 (21.4 to 22.6)	1.2 (1.1 to 1.4)	1.2 (1.1 to 1.4)	1.3 (1.2 to 1.5)	1.1 (1 to 1.3)	71.9 (68 to 75.6)	24.8 (19.9 to 29.8)	3.2%
Buckinghamshire, Oxfordshire and Berkshire West ICS	278	21 (16.2 to 26.7)	45.6 (39.8 to 52.2)	11.4 (8.1 to 15.2)	21.6 (21.2 to 22)	1.1 (1 to 1.2)	1.1 (1 to 1.2)	1.2 (1.1 to 1.2)	1 (0.9 to 1.1)	69.4 (67.6 to 71.8)	29.9 (26.7 to 32.3)	0.6%

Healthier Lancashire and South Cumbria ICS	605	21.1 (17.9 to 25.3)	44.7 (41 to 49.4)	12.2 (9.7 to 15.8)	21.7 (21.4 to 22)	1.1 (1.1 to 1.2)	1.2 (1.1 to 1.2)	1.2 (1.1 to 1.3)	1 (1 to 1.1)	72.1 (70.5 to 73.7)	27.6 (25.5 to 29.6)	18.9%
Cumbria and North East ICS	821	20.5 (17.1 to 23.5)	41.9 (38.1 to 45.8)	11.7 (9 to 14.1)	21.8 (21.6 to 22.1)	1.1 (1.1 to 1.2)	1.1 (1.1 to 1.2)	1.2 (1.1 to 1.3)	1 (1 to 1.1)	73.6 (72 to 74.9)	26.2 (24.4 to 28.2)	18.3%
Humber, Coast and Vale ICS	491	22.9 (18.3 to 27.5)	43.9 (39.5 to 49.3)	12.1 (8.5 to 15.8)	21.8 (21.5 to 22.1)	1.1 (1 to 1.1)	1.1 (1 to 1.1)	1.1 (1.1 to 1.2)	1 (0.9 to 1)	73.4 (71.6 to 75.2)	27.4 (25 to 30)	13.7%
Surrey Heartlands Health and Care Partnership	224	22.8 (16.6 to 28.4)	34.6 (27.7 to 41.6)	7.8 (4.5 to 11.1)	21.8 (21.4 to 22.2)	1.1 (1 to 1.2)	1.1 (1 to 1.2)	1.2 (1.1 to 1.3)	1 (0.9 to 1.1)	72.7 (70.1 to 75.1)	26.3 (22.5 to 30)	0.0%
Sussex Health and Care Partnership	383	19.3 (15.1 to 23.3)	38.2 (32.9 to 43.1)	7 (4.4 to 9.9)	22 (21.6 to 22.3)	1.1 (1 to 1.2)	1.1 (1 to 1.2)	1.2 (1.1 to 1.3)	1 (1 to 1.1)	73 (71.2 to 74.7)	26.7 (24.3 to 29.1)	4.2%
West Yorkshire and Harrogate (Health and Care Partnership)	455	18.8 (15.4 to 23.6)	44.7 (39.8 to 49.7)	11.7 (8.9 to 15.5)	21.8 (21.5 to 22.2)	1.2 (1.1 to 1.2)	1.2 (1.1 to 1.3)	1.2 (1.1 to 1.3)	1.1 (1 to 1.1)	72.6 (70.8 to 74.7)	30.5 (27.7 to 33.4)	21.3%
Ayrshire and Arran	128	19.4 (12.3 to 27.1)	44.4 (35.3 to 54.6)	9.2 (4 to 15.4)	22.4 (21.8 to 22.9)	1.1 (1 to 1.2)	1.2 (1 to 1.4)	1.1 (1 to 1.3)	1 (0.8 to 1.1)	73.5 (70.7 to 76.4)	25.1 (20.9 to 29.6)	13.9%
Borders	70	20.5 (8.7 to 33.6)	38.2 (25.1 to 51.8)	15 (5.2 to 26.9)	22.9 (22.1 to 23.8)	0.9 (0.8 to 1.1)	0.9 (0.7 to 1.2)	1.1 (0.9 to 1.3)	0.8 (0.6 to 1)	79.4 (73.8 to 84.7)	18.9 (13.3 to 26.1)	2.1%
Dumfries and Galloway	92	20.9 (12.1 to 31.7)	41.5 (29.4 to 54.1)	14.4 (6.7 to 23.8)	21.5 (20.6 to 22.3)	0.9 (0.8 to 1.1)	0.9 (0.7 to 1.1)	0.9 (0.8 to 1.1)	0.9 (0.7 to 1)	77.3 (71.5 to 82.7)	23.7 (16.8 to 30.8)	5.5%
Forth Valley	121	8.3 (3.6 to 14.2)	30.7 (22.5 to 40.5)	7.5 (3.1 to 13.3)	22.4 (21.9 to 22.9)	0.9 (0.7 to 1)	0.9 (0.7 to 1)	0.9 (0.8 to 1.1)	0.8 (0.7 to 1)	77.8 (74.4 to 81.5)	21.7 (17.1 to 26)	6.6%
Grampian	168	20.2 (13.1 to 27.3)	47.4 (39.2 to 57.1)	15.9 (9.8 to 22.6)	21.7 (21.1 to 22.2)	1.2 (1.1 to 1.3)	1.3 (1.1 to 1.4)	1.2 (1.1 to 1.3)	1.1 (1 to 1.2)	71.7 (68.5 to 74.6)	24.3 (20.7 to 27.8)	1.1%

Highland	134	18.5 (11.8 to 26)	47.4 (36.8 to 57.1)	6.7 (3 to 11.4)	21.9 (21.1 to 22.5)	1.2 (1 to 1.3)	1.2 (1 to 1.4)	1.2 (1.1 to 1.4)	1.1 (0.9 to 1.3)	71.9 (67.8 to 75.9)	23.3 (18.7 to 28.4)	4.3%
Lothian	281	25.6 (20 to 31.6)	43.5 (36.8 to 49.9)	15.6 (10.5 to 20.4)	21.9 (21.5 to 22.3)	1.2 (1.1 to 1.3)	1.2 (1.1 to 1.3)	1.2 (1.1 to 1.3)	1.1 (1 to 1.2)	74.5 (72 to 77.2)	23 (19.8 to 25.7)	4.2%
Fife	84	25.5 (12.7 to 38.7)	43.9 (31.9 to 56.9)	14.4 (4.3 to 25.8)	22.4 (21.8 to 23)	1.1 (0.9 to 1.2)	1.1 (0.9 to 1.3)	1.2 (1 to 1.3)	1 (0.8 to 1.1)	72 (68.1 to 76.2)	23.4 (17.5 to 30.6)	7.7%
Tayside	149	22 (14.3 to 29.1)	38.6 (29.8 to 47.9)	11.5 (6.1 to 17.5)	21.9 (21.3 to 22.5)	1.1 (1 to 1.3)	1.2 (1 to 1.3)	1.2 (1.1 to 1.4)	1 (0.8 to 1.1)	72.8 (69.9 to 75.7)	23.6 (19.7 to 27.3)	9.5%
Greater Glasgow and Clyde	346	19.2 (14.9 to 23.7)	48.7 (43.2 to 55.4)	11.1 (7.8 to 15.5)	22 (21.6 to 22.3)	1.2 (1.1 to 1.3)	1.2 (1.1 to 1.3)	1.2 (1.1 to 1.3)	1.1 (1 to 1.2)	72.5 (70.7 to 75)	25.9 (22.7 to 28.1)	22.1%
Lanarkshire	239	23.6 (17.7 to 30.1)	46.5 (39.6 to 54.8)	16.7 (11.5 to 22.6)	22.1 (21.6 to 22.6)	1.1 (1 to 1.2)	1.1 (1 to 1.2)	1.1 (1 to 1.2)	1 (0.9 to 1.1)	72 (69.4 to 74.4)	26.1 (22.4 to 29.8)	11.7%
Betsi Cadwaladr University Health Board	323	22.2 (16.2 to 27.1)	43.5 (37.1 to 48.9)	10.4 (6.3 to 13.5)	21.7 (21.4 to 22)	1.1 (1 to 1.2)	1.1 (1 to 1.2)	1.2 (1.1 to 1.3)	1 (0.9 to 1.1)	74.1 (71.9 to 76.1)	25.2 (22.1 to 27.8)	5.4%
Powys Teaching Health Board	77	21.4 (10.4 to 32.8)	30.5 (18.7 to 42.9)	11.1 (3.1 to 20.5)	21.5 (20.8 to 22.2)	1 (0.9 to 1.1)	1 (0.8 to 1.1)	1.1 (1 to 1.3)	0.9 (0.7 to 1.1)	78.5 (73.9 to 82.4)	22.4 (18 to 27.3)	1.3%
Hywel Dda University Health Board	107	22.1 (13.9 to 31.3)	42.6 (31.9 to 53.2)	13.7 (7 to 21.2)	21.3 (20.7 to 22)	1.1 (1 to 1.3)	1.2 (1 to 1.4)	1.2 (1.1 to 1.3)	1 (0.9 to 1.2)	72.2 (69 to 75.6)	26 (21.3 to 30.7)	4.4%
Aneurin Bevan University Health Board	191	21.3 (15.4 to 27.6)	47.5 (40 to 55.5)	11.6 (7.5 to 16.6)	21.9 (21.3 to 22.4)	1.2 (1.1 to 1.4)	1.3 (1.1 to 1.4)	1.3 (1.2 to 1.4)	1.1 (1 to 1.2)	70.8 (67.2 to 73.8)	27.8 (23.8 to 31.8)	11.7%
Cardiff and Vale University Health Board	84	17.4 (10.6 to 25.7)	48.1 (35.8 to 56.5)	10 (4.5 to 16.3)	21.8 (21.3 to 22.6)	1.2 (1 to 1.3)	1.2 (1.1 to 1.4)	1.2 (1.1 to 1.4)	1 (0.9 to 1.2)	69.7 (65.3 to 73.5)	34.5 (28 to 41.7)	14.3%
Cwm Taf Morgannwg University	155	15.4 (9.5 to 22.6)	45.9 (37.5 to 54.9)	9.1 (4.6 to 14.5)	21.4 (20.8 to 22)	1.3 (1.1 to 1.4)	1.3 (1.1 to 1.4)	1.3 (1.2 to 1.5)	1.1 (1 to 1.3)	69.3 (65.3 to 73.4)	31.1 (26 to 36.4)	14.7%

Health Board												
Swansea Bay University Health Board	128	18.6 (12.8 to 26)	43.4 (36.9 to 53)	11.3 (6.8 to 17.3)	21.5 (20.9 to 21.9)	1.3 (1.2 to 1.4)	1.3 (1.2 to 1.5)	1.3 (1.2 to 1.5)	1.1 (1 to 1.3)	70.9 (67.5 to 74)	23.8 (20.6 to 27.5)	13.0%
Northern Ireland Health & Social Care Board	680	22.3 (18.5 to 26.1)	45 (40.7 to 49.4)	14.2 (11.4 to 17.3)	21.9 (21.7 to 22.2)	1.1 (1.1 to 1.2)	1.2 (1.1 to 1.3)	1.2 (1.1 to 1.2)	1 (0.9 to 1)	73.9 (72.6 to 75.3)	26.1 (24.2 to 27.7)	10.0%

Supplementary Table 8 Pearson correlations across 61 HB/ICS across measures of deprivation, depressive and anxiety symptoms, care-seeking intention, mental health knowledge, attitudes to mental health and barriers to mental healthcare

	% in IMD top depri-vation decile	PHQ2	Screened for depression (PHQ2 ≥ 3)	GAD2	Screened for anxiety (GAD2 ≥ 3)	Screened for either depression or anxiety	Likelihood to seek mental healthcare (0-10)	% delay or never seek mental healthcare	MAKS	Overall BACE	Stigma (BACE subscale)	Attitudinal barriers (BACE subscale)	Instrume-ntal barriers (BACE subscale)	Tolerance to mental illness	Prejudice and exclusion	% living with someone with mental illness	% working with someone with mental illness	% who has neighbour with mental illness
PHQ2	0.24																	
Screened for depression (PHQ2 ≥ 3)	0.13	0.91																
GAD2	0.28	0.75	0.72															
Screened for anxiety (GAD2 ≥ 3)	0.24	0.67	0.72	0.90														

Screened for either depression or anxiety	0.23	0.80	0.84	0.87	0.90												
Likelihood to seek mental healthcare (0-10)	-0.12	-0.43	-0.42	-0.23	-0.25	-0.39											
% delay or never seek mental healthcare	0.04	0.14	0.10	0.21	0.07	0.13	-0.54										
Mental health knowledge composite (MAKS)	-0.06	-0.19	-0.14	0.13	0.05	-0.12	0.49	-0.03									
Overall BACE	0.19	0.55	0.48	0.45	0.39	0.51	-0.54	0.17	-0.44								
Stigma (BACE subscale)	0.24	0.51	0.43	0.44	0.37	0.48	-0.52	0.17	-0.44	0.97							
Attitudinal barriers (BACE subscale)	0.12	0.51	0.47	0.42	0.36	0.46	-0.55	0.20	-0.35	0.96	0.89						
Instrumental barriers (BACE subscale)	0.17	0.56	0.51	0.42	0.40	0.54	-0.51	0.09	-0.52	0.95	0.90	0.88					
Tolerance to mental illness	-0.17	-0.42	-0.38	-0.29	-0.25	-0.45	0.51	-0.08	0.63	-0.72	-0.71	-0.63	-0.75				
Prejudice and exclusion	0.20	0.40	0.35	0.22	0.23	0.41	-0.48	-0.03	-0.64	0.56	0.54	0.45	0.66	-0.80			
% living with someone with mental illness	0.23	0.12	0.09	0.18	0.17	0.14	0.07	0.04	0.28	-0.15	-0.15	-0.12	-0.15	0.36	-0.22		
% working	-0.07	0.18	0.11	0.19	0.10	0.09	0.07	-0.03	0.48	0.07	0.05	0.17	-0.04	0.14	-0.27	0.14	

with someone with mental illness																	
% who has neighbour with mental illness	0.24	0.28	0.23	0.41	0.37	0.34	0.08	-0.26	0.17	0.31	0.32	0.23	0.32	-0.15	0.16	0.06	0.29	
% has close friend with mental illness	0.12	0.06	-0.01	0.31	0.20	0.04	0.14	0.13	0.52	-0.06	-0.04	0.02	-0.18	0.31	-0.45	0.35	0.52	0.30

Supplementary Table 9. Prevalence of top three attitudinal, top stigma and top instrumental barriers that would stop delay or discourage care-seeking a lot

ICS/HB Name	Weighted N	"Dislike of talking about my feelings, emotions or thoughts."	"Fear of being put in hospital against my will."	"Wanting to solve the problem on my own."	"Feeling embarrassed or ashamed."	"Not being able to afford the financial costs involved."
Greater Manchester Health and Social Care Partnership	530	21.3 (17.9 to 25.3)	21.8 (18.4 to 26)	22.6 (18.6 to 26.5)	23.6 (20.7 to 28.8)	19.9 (16.3 to 24.1)
Cheshire and Merseyside ICS	698	19 (16.1 to 22.4)	20.1 (16.9 to 23.3)	18.8 (15.7 to 21.7)	18.1 (14.9 to 21.3)	19.2 (16 to 22.4)
South Yorkshire and Bassetlaw ICS	271	19.9 (14.9 to 25.3)	17.8 (12.4 to 22.7)	13.4 (9.6 to 17.7)	18 (13.1 to 22.8)	18.8 (13.8 to 24.7)
Staffordshire and Stoke on Trent ICS	258	15.2 (10.9 to 19.4)	18.9 (13.5 to 24.8)	15.6 (11.1 to 20.1)	15.7 (11.2 to 20.2)	17.8 (12.7 to 23.1)
Shropshire and Telford and Wrekin ICS	176	15 (9.8 to 20.8)	17.6 (12 to 23.4)	22.2 (16.8 to 29.2)	18.6 (13.2 to 24.6)	16.1 (10.7 to 21.9)
Joined Up Care Derbyshire	283	20.8 (16.2 to 26)	16.2 (12.6 to 21.2)	22.2 (17.6 to 27.9)	16.1 (11.9 to 21.2)	11.7 (7.9 to 16.4)
Lincolnshire ICS	146	24.4 (16.8 to 31.8)	20.6 (12.5 to 28.6)	21.6 (14.1 to 28.9)	16.9 (11.4 to 23.2)	20.2 (13 to 27.2)
Nottingham and Nottinghamshire Health and Care	265	20.3 (15.2 to 26)	20.1 (15.2 to 25.1)	19.3 (14.2 to 24.5)	18.2 (13.2 to 23.7)	22.8 (17.7 to 28.9)
Leicester, Leicestershire and Rutland ICS	242	18.5 (13.7 to 25.2)	20.4 (14.8 to 26.6)	17.9 (13.3 to 24.2)	20.9 (14.8 to 26.5)	13.9 (9.6 to 19)
The Black Country and West Birmingham ICS	413	18.7 (14.4 to 22.6)	21.7 (16.7 to 25.1)	23.3 (18.4 to 27.4)	20.2 (15.6 to 24.4)	17.8 (13.4 to 21.4)
Birmingham and Solihull ICS	245	19.5 (15 to 25.1)	16.8 (11.8 to 22.8)	18.7 (13.9 to 23.6)	20 (14.8 to 25.8)	18.2 (13.8 to 24.9)
Coventry and Warwickshire ICS	195	18.2 (12.7 to 24.5)	21.2 (16.6 to 28.6)	17.7 (13.3 to 25.1)	15.1 (10.7 to 20.9)	17.7 (12.6 to 23.6)
Herefordshire and Worcestershire ICS	173	16.7 (11.3 to 23.5)	18.3 (12.3 to 25)	19.4 (13.4 to 25.3)	14.9 (9.3 to 21.1)	20 (14 to 26.8)
Northamptonshire ICS	180	17.3 (12.4 to 23.1)	17.7 (12.3 to 23.4)	15.8 (10.8 to 20.7)	20.4 (15.3 to 27.1)	18.5 (12.3 to 25.5)
Cambridgeshire and Peterborough ICS	224	26.5 (19.7 to 32.9)	26.2 (18 to 31.9)	22.5 (16.5 to 29.3)	17.8 (12.7 to 24.1)	16.7 (11.8 to 21.9)
Norfolk and Waveney Health and Care Partnership	323	23.6 (18.7 to 28.8)	22.8 (18 to 27.7)	17.5 (13.5 to 21.8)	18.7 (14.4 to 24)	19.5 (15 to 24)
Suffolk and North East Essex ICS	203	13.7 (8.9 to 20)	14 (9.1 to 19.2)	15.6 (10.8 to 21.6)	11.1 (6.8 to 17)	16 (10.1 to 22.7)
Bedfordshire, Luton and Milton Keynes ICS	310	18.6 (14.3 to 23.2)	14.9 (11.5 to 19.3)	14 (9.9 to 17.6)	13 (8.9 to 16.3)	17.5 (13.4 to 22)
Hertfordshire and West Essex ICS	197	13.7 (8.9 to 19.3)	18.2 (13.3 to 24.7)	17.2 (12.4 to 23.8)	13.9 (9.4 to 18.9)	20.8 (15 to 27.5)
Mid and South Essex ICS	290	16.1 (11.8 to 20.6)	18.8 (14 to 24)	15.7 (11.4 to 20.2)	14 (9.3 to 17.8)	14.8 (10.2 to 19.2)

North West London Health and Care Partnership	549	17.5 (13.9 to 20.7)	21.3 (17.3 to 24.8)	18 (14 to 21.2)	15.9 (12.2 to 19.1)	18.1 (14.5 to 21.9)
North London Partners in Health and Care	381	17.8 (14.3 to 22.8)	19.4 (15.4 to 24.7)	17.2 (13.8 to 22.6)	17.3 (14.3 to 22.8)	14.8 (11.6 to 19.5)
East London Health and Care Partnership	398	20.3 (16.2 to 24.4)	23.3 (18.4 to 27.8)	20 (15.7 to 23.8)	17.8 (14.9 to 22.7)	21.1 (17.1 to 25.8)
Our Healthier South East London	392	13.4 (10.5 to 17.3)	22.2 (18 to 27.3)	21.6 (17.3 to 26.7)	14 (10.6 to 18.5)	16.4 (12.2 to 20.6)
South West London Health and Care Partnership	323	17.2 (12.6 to 21.9)	19.4 (14.8 to 24.8)	19.7 (14.6 to 23.7)	14.3 (10.5 to 18.3)	20 (15.2 to 25.1)
Kent and Medway ICS	501	23.3 (18.9 to 27.2)	21.1 (16.7 to 24.8)	22.5 (18.5 to 27)	16.2 (12.6 to 19.6)	22.9 (18.9 to 27.1)
Frimley Health and Care ICS	97	22.5 (15.7 to 31.5)	18.1 (9.9 to 25.1)	28.2 (20.1 to 38.7)	19.6 (12 to 26.7)	15 (9.4 to 23.3)
Cornwall and the Isles of Scilly Health and Social Care Partnership	96	23.6 (15.5 to 31.3)	23.2 (14.6 to 32.3)	19.4 (10.8 to 28.1)	17.2 (10.2 to 24.9)	21.4 (12.6 to 30.8)
Devon ICS	327	16.8 (12.4 to 20.6)	16.5 (11.6 to 20.7)	18.9 (14.1 to 23.2)	14.8 (10.7 to 19)	16.4 (11.7 to 20.5)
Somerset ICS	93	16.6 (9.9 to 24.9)	22.4 (14 to 32)	19.9 (12.8 to 27.9)	20.7 (13 to 30.3)	12.3 (6.7 to 19.6)
Bristol, North Somerset and South Gloucestershire ICS	166	14.1 (9 to 19.5)	21 (15.4 to 28.4)	16.9 (11.9 to 23.2)	17.7 (11.6 to 24.4)	15.9 (10.5 to 21.4)
Bath and North East Somerset, Swindon and Wiltshire ICS	216	13.3 (9.3 to 18.3)	12.1 (8.2 to 16.6)	19.6 (14.5 to 25.1)	15.4 (10.9 to 20.4)	19.6 (14.8 to 25.2)
Dorset ICS	198	24.6 (18.2 to 31)	13.8 (9.4 to 19.1)	17.8 (11.6 to 23.9)	14.4 (9.6 to 18.9)	19 (13.4 to 24.8)
Hampshire and the Isle of Wight ICS	510	20.2 (17.2 to 24)	14.8 (11.7 to 17.7)	16.9 (14 to 20.9)	13.7 (10.8 to 16.6)	17 (14 to 20.9)
Gloucestershire ICS	120	29.2 (20.3 to 39.6)	20.8 (13.8 to 29.1)	25.9 (17 to 35.4)	21.6 (13.1 to 30.1)	26.9 (17.6 to 36.4)
Buckinghamshire, Oxfordshire and Berkshire West ICS	278	13.3 (10.3 to 18.1)	19.6 (14.9 to 24.9)	22.5 (18.3 to 28.3)	14.5 (10.9 to 19.3)	17.5 (13.6 to 22.9)
Healthier Lancashire and South Cumbria ICS	605	18.6 (15.2 to 22.1)	18.2 (14.8 to 21.6)	18.5 (15.3 to 21.7)	17.9 (14.8 to 21.5)	17.3 (14.1 to 20.8)
Cumbria and North East ICS	821	21.1 (18.1 to 24.1)	22 (18.8 to 25.1)	21.7 (18.4 to 24.5)	17.7 (14.7 to 20.5)	17.3 (14.5 to 20.2)
Humber, Coast and Vale ICS	491	20.8 (16.6 to 24.6)	20.6 (16.5 to 24.7)	17.9 (14.2 to 21.6)	18 (14.1 to 21.7)	17.7 (14.4 to 21.7)
Surrey Heartlands Health and Care Partnership	224	19.4 (13.8 to 25)	15.9 (10.9 to 21.7)	17.9 (12.6 to 23.4)	18.5 (12.7 to 24.6)	21.2 (16.2 to 28)
Sussex Health and Care Partnership	383	19.1 (15.2 to 23.3)	18 (14.3 to 22)	20.6 (16.6 to 25.6)	17.6 (13.6 to 21.8)	20.7 (16.9 to 25.4)
West Yorkshire and Harrogate (Health and Care Partnership)	455	19.5 (15.9 to 23.6)	16.9 (13.2 to 20.9)	19.1 (14.8 to 22.9)	18.7 (14.8 to 22.4)	17.8 (14 to 21.5)
Northern Ireland Health & Social Care Board	680	19.1 (16.2 to 22.2)	17.7 (14.7 to 21)	20.3 (16.8 to 23.8)	20.1 (16.8 to 23.2)	15.2 (12.5 to 18.2)

Ayrshire and Arran Health Board	128	24.6 (16.9 to 33.1)	17.6 (10 to 26.4)	22.6 (14.8 to 30.8)	23.1 (16.2 to 30.3)	15.8 (9.8 to 22.7)
Borders Health Board	70	16.3 (6.7 to 27.7)	10.6 (2.3 to 20.6)	22.9 (10.7 to 36)	24.2 (11.4 to 38.6)	21.7 (10.7 to 35.1)
Dumfries and Galloway Health Board	92	10.8 (4.3 to 17.9)	16.5 (8.1 to 27.6)	15 (6.9 to 24)	9.1 (3.5 to 15.9)	15.9 (6.6 to 26)
Forth Valley Health Board	121	14 (7.5 to 22.2)	10.6 (4.6 to 17.4)	10 (6.3 to 17.1)	11.1 (6.3 to 19.5)	14.9 (7.3 to 23)
Grampian Health Board	168	23.1 (16.3 to 30.9)	18.5 (11.9 to 24.6)	15.8 (9.9 to 22.3)	22.9 (15.9 to 30.8)	20.8 (14.4 to 28)
Highland Health Board	134	30.8 (20.3 to 40.7)	25.9 (16.7 to 36.1)	19.7 (11.8 to 28.1)	23.3 (15 to 32.5)	24.8 (16 to 35.2)
Lothian Health Board	281	23.3 (18 to 29.3)	25 (19.7 to 30.4)	19.9 (14.9 to 24.7)	20.5 (15.7 to 26.1)	20.6 (15.2 to 26.1)
Fife Health Board	84	21.6 (11.7 to 31.3)	24.5 (13.7 to 36.6)	21.6 (11.4 to 33.7)	21 (10.9 to 33)	7.4 (2.5 to 12.1)
Tayside Health Board	149	25.4 (17.7 to 33.1)	20.6 (13.3 to 28.1)	22.7 (15.6 to 30.9)	18.5 (10.9 to 26.1)	24.1 (16 to 32.2)
Greater Glasgow and Clyde Health Board	346	24.3 (19.4 to 29.8)	20.2 (14.6 to 24.5)	20.9 (16.4 to 26.3)	24.7 (19.6 to 30.4)	20 (15.2 to 25)
Lanarkshire Health Board	239	18.1 (13.2 to 24.3)	18.9 (13.4 to 24.3)	17.3 (12.1 to 21.6)	19.9 (14.4 to 26)	15.6 (10.8 to 20.8)
Betsi Cadwaladr University Health Board	323	20.2 (15.4 to 25.4)	20.1 (15.9 to 25.5)	20.3 (15.7 to 24.9)	14.8 (11.1 to 19.6)	15.9 (12.2 to 20.3)
Powys Teaching Health Board	77	26.4 (14.6 to 38.3)	20.5 (10.2 to 31.7)	22.1 (10.8 to 33.5)	10.8 (4.3 to 18.7)	11.9 (4.4 to 21.6)
Hywel Dda University Health Board	107	21.2 (13.5 to 30.7)	19.2 (11.4 to 29.5)	13 (7.4 to 20.2)	13.1 (7 to 20.3)	15.2 (7.7 to 24)
Aneurin Bevan University Health Board	191	22.5 (16.2 to 28.7)	26.3 (20.1 to 33.9)	21.2 (15.3 to 27.1)	21.3 (15.4 to 27.5)	18.6 (13.7 to 24.4)
Cardiff and Vale University Health Board	84	24.7 (16 to 34)	15.3 (9.4 to 24.9)	18.1 (10.7 to 28.5)	17.9 (10.4 to 26.7)	16.5 (9.4 to 23.3)
Cwm Taf Morgannwg University Health Board	155	28 (20.3 to 36.3)	26 (18.2 to 34.3)	22.2 (14.9 to 29.2)	24.2 (16.2 to 31.5)	20.3 (12.7 to 27.3)
Swansea Bay University Health Board	128	20.4 (13.8 to 28.1)	23.2 (15.8 to 31.6)	27.2 (19.9 to 35.8)	26.3 (19.5 to 35.4)	15.3 (9.4 to 23.5)

Supplementary Table 10 Percentage likely or very likely to access channels and modes of support

ICS/HB Name	Weighted N	Health and MH professionals (GP, A&E, Practitioner at NHS Talking Therapies)	Voluntary and community organisations (NGOs and Charities such as Mind)	Support teams at your workplace, university or school	Family	Friends	Social media networks and peer-to-peer networks	Anonymous online communities	Telephone appointments	One-to-one video call appointments (e.g., zoom and microsoft teams)	Group video call appointments (e.g., zoom and microsoft teams)	One-to-one face to face sessions	Group face to face sessions	Self-help materials (e.g. mobile apps, books, websites, self-help/computerised therapy)	Urgent mental-health helplines/ 24/7 crisis lines (e.g., SHOUT, Samaritans)
Greater Manchester Health and Social Care Partnership	530	58.7 (53.9 to 63.3)	57.1 (52.5 to 61.5)	30.9 (26.7 to 35)	52.8 (47.9 to 57.7)	45.8 (40.9 to 50.3)	21.6 (17.8 to 25.3)	30.3 (26 to 34.1)	48.6 (44.1 to 52.9)	36 (31.3 to 40.3)	19.9 (16.7 to 24.3)	70.7 (67 to 75.2)	28.5 (24.9 to 33.2)	50.3 (46.4 to 55.3)	42.6 (38.8 to 47.7)
Cheshire and Merseyside ICS	698	64.3 (60.6 to 68)	61.4 (57.7 to 65.5)	24.4 (21.4 to 28.1)	57.5 (53.1 to 61.3)	50.3 (46.1 to 54.4)	17.4 (14 to 20.1)	27.8 (23.9 to 31.1)	49 (45.3 to 53.5)	38 (34 to 42.1)	19.5 (16.5 to 23)	72.8 (69.7 to 76.9)	26.9 (23.8 to 30.9)	50.7 (46.7 to 55)	36.3 (32.1 to 40.3)
South Yorkshire and Bassetlaw ICS	271	59.7 (53.4 to 66.8)	57 (50.4 to 64.3)	26.9 (21.5 to 32.6)	55.3 (48.4 to 61.6)	47.4 (40.5 to 53.3)	21.8 (16.5 to 26.8)	29.9 (23.4 to 35.9)	46.3 (39 to 53)	30.6 (24.2 to 36.1)	17.3 (12.8 to 22.1)	68 (61.8 to 74.4)	23.7 (18.3 to 29.3)	51.7 (44.3 to 58.5)	37.3 (31.2 to 43.8)
Staffordshire and Stoke on Trent ICS	258	73.3 (67.8 to 79)	71.4 (65.5 to 77.6)	26.2 (20.4 to 33)	55.3 (48.6 to 61.4)	47.2 (40.6 to 54.3)	17.7 (13 to 23)	27.3 (21.5 to 33.3)	55.2 (48.6 to 61.1)	42.1 (35.2 to 49.4)	20.1 (14.5 to 25.9)	79 (74.1 to 83.9)	34.9 (28.7 to 41.7)	54.8 (48 to 62.1)	42.5 (35.5 to 49.5)
Shropshire and Telford and Wrekin ICS	176	65.7 (57.3 to 73)	63.1 (55 to 70.7)	21.7 (15.7 to 29)	55 (47.4 to 62.9)	45.3 (38.2 to 53.5)	20.8 (15 to 27.3)	31.7 (24.7 to 39.3)	52.2 (44 to 59.8)	34.4 (27 to 42.1)	10.5 (6.4 to 15.2)	75.5 (67.6 to 82.2)	25.2 (17.9 to 31.8)	45.4 (37.5 to 52.9)	42.2 (34.6 to 49.5)
Joined Up Care Derbyshire	283	59.7 (54 to 66.4)	56.7 (50.9 to 63.3)	23.7 (18.4 to 29.2)	51.3 (44.4 to 56.6)	47.3 (40.7 to 52.7)	16.8 (12.3 to 21.3)	26.8 (21.5 to 32.6)	47.8 (41.1 to 53.6)	31.6 (26.2 to 37.4)	14.9 (10.7 to 19.5)	65.7 (59.5 to 71.9)	23.6 (18 to 28.9)	51.2 (45.3 to 57.5)	35.7 (29.6 to 41.7)
Lincolnshire ICS	146	58.3 (49.2 to 66.9)	55.7 (46.7 to 64.5)	24.5 (17.1 to 33)	59.8 (50.9 to 68.4)	57.4 (47.4 to 65.8)	20.2 (12.6 to 27.2)	28.9 (20.8 to 35.6)	41.9 (33 to 50.8)	31 (23.1 to 38.9)	20 (13.1 to 28.2)	66.9 (57.7 to 75)	26.7 (18.6 to 34.9)	48 (38.6 to 56.4)	40.2 (30.8 to 48.8)

Nottingham and Nottinghamshire Health and Care	265	61.2 (54.4 to 67.4)	59.8 (53.2 to 66.1)	27.2 (21.4 to 32.6)	55.6 (48.6 to 61.7)	48.2 (41.7 to 54.4)	17.2 (13.3 to 22.5)	26.2 (20.9 to 31.6)	49.7 (43.4 to 55.7)	45.1 (38.8 to 50.7)	22.2 (17.4 to 28.4)	71.5 (65.2 to 76.8)	29.2 (23.1 to 35.4)	55 (47.9 to 61.4)	44.3 (38.2 to 51.2)
Leicester, Leicestershire and Rutland ICS	242	64.4 (58.4 to 71.1)	62.4 (56.3 to 69.2)	30.3 (23.4 to 36.7)	52.6 (44.4 to 59)	46.5 (38.6 to 53.5)	20.5 (14.7 to 26.8)	26.6 (20.7 to 32.7)	47.5 (39.7 to 54.5)	41.2 (34.3 to 47.8)	18.5 (12.5 to 23.6)	70.5 (64.6 to 77.4)	26 (20.2 to 32)	40.8 (34.7 to 48.6)	41.2 (34.1 to 48.6)
The Black Country and West Birmingham ICS	413	59.2 (53.7 to 64)	56.2 (51 to 61.8)	30.7 (25.7 to 35.3)	52.7 (47.8 to 57.9)	49 (44 to 54.5)	21.1 (16.9 to 24.7)	31.6 (27.1 to 37.2)	48.7 (43.1 to 53.6)	38.5 (33.1 to 43.2)	24.9 (19.8 to 28.8)	68 (62.2 to 72.6)	28.4 (23.5 to 32.9)	51.8 (45.3 to 56.3)	42.9 (37.8 to 48.2)
Birmingham and Solihull ICS	245	59.5 (52 to 66)	55.3 (47.7 to 62.1)	29.9 (23.4 to 36.7)	53.5 (45.2 to 60.1)	51.2 (44.5 to 58.6)	22.5 (17.5 to 28.7)	31.9 (26 to 38.4)	44.9 (38 to 51.8)	41 (33.7 to 48.2)	24.3 (18.9 to 31.3)	72 (65.1 to 78.2)	36 (30 to 43.9)	42.9 (35.4 to 49.2)	37.7 (31 to 44.3)
Coventry and Warwickshire ICS	195	60.3 (53.2 to 67.5)	59.2 (51.9 to 66.3)	24.3 (17.2 to 29.6)	48 (40 to 55.4)	45.8 (37.7 to 52.9)	22 (14.6 to 27.5)	30.7 (23.9 to 37.1)	49.1 (40.3 to 55.4)	38.7 (30 to 44.8)	18.9 (12.1 to 23.5)	71.2 (64.3 to 77.7)	27.7 (20.5 to 33.8)	49.3 (41 to 56.3)	40.1 (31.8 to 47.6)
Herefordshire and Worcestershire ICS	173	63.8 (56.8 to 72)	62.7 (56 to 71)	19.4 (13.9 to 25.9)	53.9 (46.5 to 62.3)	43.3 (36 to 51.4)	21.7 (15.1 to 28)	27.2 (20.6 to 33.8)	55.5 (47.9 to 63.6)	43.6 (36.3 to 52.1)	17.4 (12.1 to 23.3)	69.9 (61.8 to 77.9)	24.2 (17.8 to 31.1)	49.5 (41.2 to 57.4)	34.4 (26.9 to 41.3)
Northamptonshire ICS	180	67.1 (59.1 to 73.4)	64.7 (56.8 to 71.6)	29.9 (23.2 to 37.2)	53.2 (44.7 to 61.6)	47.9 (40.6 to 56.3)	28.1 (21 to 34.8)	36.3 (28.4 to 44.4)	50.6 (42.2 to 58.2)	41.9 (33.8 to 50)	24.4 (17.3 to 31.3)	71.8 (63.8 to 78.2)	33.4 (25.3 to 40.1)	62.1 (54.8 to 69.8)	41.4 (33.1 to 49.6)
Cambridgeshire and Peterborough ICS	224	65.2 (58.7 to 73)	63.1 (56.1 to 71.1)	23 (17.4 to 29.1)	57.7 (49.9 to 64.8)	46.9 (39.5 to 53.9)	18.2 (13.1 to 24.3)	27 (21.3 to 34.4)	54.4 (46.9 to 62.2)	39 (32.7 to 46.5)	15 (10 to 20.5)	71.7 (65.5 to 78.7)	21.8 (15.8 to 28.1)	46.7 (39.6 to 54.4)	38.7 (31.6 to 46.3)
Norfolk and Waveney Health and Care Partnership	323	66.8 (61.2 to 72.5)	63.3 (57.5 to 69.1)	20.8 (16.3 to 25.7)	54.4 (48.5 to 60.2)	47.4 (41.6 to 53.8)	20.2 (15.8 to 25.2)	27.7 (22.2 to 32.7)	52 (46.2 to 58.1)	33.5 (28.4 to 39)	14.6 (10.9 to 18.8)	72.4 (66.6 to 77.1)	23 (17.9 to 27.6)	50.3 (44.7 to 56.5)	34.2 (28.9 to 40.2)

Suffolk and North East Essex ICS	203	68.1 (59.9 to 75.6)	65 (56.5 to 72.7)	20.5 (14.7 to 27.5)	51.7 (44.4 to 59.5)	50.9 (43.2 to 58.8)	16.8 (11.2 to 21.8)	23.2 (16.3 to 29)	55.8 (46.9 to 64)	33.2 (25.4 to 40.5)	15.5 (10.3 to 20.5)	77.8 (70.9 to 83.5)	26.9 (19.6 to 32.8)	52.1 (42.5 to 58.2)	38.3 (29.5 to 45.8)
Bedfordshire, Luton and Milton Keynes ICS	310	69.1 (63.4 to 74.4)	67 (61.1 to 72.5)	29.4 (24.9 to 35.9)	56.9 (51.5 to 63.1)	53.8 (48.6 to 60.3)	22.1 (17.2 to 27.6)	27.5 (23.7 to 34.6)	56.2 (51.6 to 62.9)	50 (44.8 to 57.3)	25.1 (19.8 to 30.6)	76.7 (72.3 to 82)	29.1 (24.1 to 35.3)	53.4 (48.5 to 60.7)	38.4 (32.8 to 44.8)
Hertfordshire and West Essex ICS	197	74.0 (67.2 to 80.8)	72.4 (65.7 to 79.2)	23 (17 to 29.6)	55.4 (48.6 to 63.5)	48.8 (42.1 to 57.3)	16.5 (11.3 to 22.2)	31.2 (24.4 to 38.7)	55.2 (48 to 62.9)	44.3 (37.2 to 52.9)	26.4 (19.6 to 33.9)	76.2 (69.8 to 82.9)	28.1 (21.7 to 35.9)	54.6 (47.3 to 62.5)	40.4 (32.9 to 48.1)
Mid and South Essex ICS	290	63.8 (57.8 to 69.3)	62.2 (55.8 to 68)	27.4 (21.8 to 32.5)	56.5 (50.4 to 62.6)	51.8 (45.3 to 57.9)	15.9 (11 to 19.7)	21.8 (16.6 to 26.2)	51.7 (45.9 to 58)	43.4 (37.9 to 50)	21.7 (16.4 to 26.4)	77.2 (72.9 to 82.6)	28.7 (23.1 to 34.2)	55.7 (49.3 to 61.7)	43.4 (37.7 to 50.3)
North West London Health and Care Partnership	549	56.9 (51.9 to 61.6)	55.1 (49.9 to 59.8)	42 (37.7 to 46.6)	55.2 (50.7 to 59.9)	53.8 (48.8 to 58.5)	30.2 (26.9 to 35.7)	39.7 (35.4 to 44.6)	51.4 (46.7 to 56.5)	48.7 (43.7 to 53.4)	34.4 (30.5 to 38.9)	70.5 (66.2 to 74.6)	36 (31.9 to 40.9)	59.7 (55.1 to 64.3)	48.4 (43.5 to 52.7)
North London Partners in Health and Care	381	51.2 (44.9 to 56.9)	49.5 (43.3 to 55.1)	32.8 (27.9 to 39.1)	49 (43.2 to 55.1)	48.9 (43.3 to 54.4)	22.5 (18.6 to 27.7)	33.6 (27.5 to 38.7)	46.4 (40.7 to 52.2)	47.9 (41.2 to 52.9)	25.2 (20.4 to 29.6)	62.7 (57.1 to 68.2)	30.2 (25 to 35.7)	47.5 (41.8 to 53.7)	39.4 (34.4 to 45.6)
East London Health and Care Partnership	398	56.2 (51.8 to 62)	54.2 (49.6 to 60.1)	32.6 (28 to 37.5)	55.4 (49.9 to 60.4)	54.7 (48.9 to 59.3)	27.8 (23.1 to 32.7)	39.3 (34 to 44.5)	52.3 (48 to 58.1)	48.3 (43.7 to 54.7)	31.5 (27.3 to 36.6)	68.9 (64 to 73.3)	43.3 (38 to 48)	53.9 (48.8 to 59.7)	45.6 (40.3 to 51.1)
Our Healthier South East London	392	65.9 (60.2 to 70.7)	65.1 (59.3 to 70.1)	25.2 (20.9 to 30.1)	54 (48.3 to 59.8)	52.6 (46.7 to 58.1)	24.3 (19.8 to 28.5)	32.3 (26.9 to 37.4)	55.3 (49.4 to 60.5)	47 (40.9 to 52.4)	24.7 (20.4 to 29.5)	72.4 (67.2 to 76.9)	29.7 (24.8 to 34.8)	50.9 (44.8 to 56.4)	41.7 (36.3 to 47.3)
South West London Health and Care Partnership	323	57.9 (52.1 to 64.2)	56.3 (50.6 to 62.7)	28.6 (23.2 to 33.7)	51.1 (44.6 to 56.5)	46 (40 to 51.7)	22.6 (17.5 to 26.7)	32.8 (27.1 to 37.7)	47.3 (41.4 to 53.4)	43.2 (37.3 to 48.9)	23.1 (18.1 to 27.6)	66.4 (60.3 to 71.9)	29.2 (24.3 to 35)	51.1 (44.7 to 57)	42.8 (37 to 48.4)

Kent and Medway ICS	501	57.8 (52.8 to 62.4)	55.7 (50.8 to 60.6)	28.5 (23.9 to 33.4)	57.2 (52.3 to 62)	52.4 (47.2 to 57.3)	18.2 (14.6 to 22.7)	27.9 (24 to 32.7)	45.2 (41 to 50.6)	37 (32.7 to 42.3)	15.3 (11.9 to 19.5)	66.5 (61.8 to 71.3)	24.7 (20.7 to 29.7)	54 (49.5 to 59.6)	36.1 (31.7 to 41.2)
Frimley Health and Care ICS	97	67.3 (57.2 to 76.4)	67.3 (57.2 to 76.4)	23.6 (16.4 to 32.8)	52.6 (43 to 63.2)	44.5 (35.3 to 56)	19 (11.6 to 27.1)	27.7 (18.7 to 36.4)	56.3 (45.9 to 67.4)	42.5 (32.8 to 53.2)	24.7 (15.6 to 34)	72.3 (62.8 to 81.8)	21.2 (14 to 29.3)	51.2 (41.9 to 62.6)	34.3 (25 to 43.8)
Cornwall and the Isles of Scilly Health and Social Care Partnership	96	70.0 (60.0 to 79.9)	66.6 (56.5 to 76.4)	24.3 (16.1 to 32.9)	56.8 (46.7 to 66.6)	42.8 (32.7 to 53)	21.5 (13 to 28.9)	26.2 (17.2 to 36.3)	40.1 (30.7 to 50.9)	34.2 (24.8 to 44.4)	15.2 (8.2 to 22.7)	81.8 (73.4 to 88.7)	33.4 (23.1 to 43.7)	47.8 (36.6 to 57.5)	37.7 (28.1 to 48.4)
Devon ICS	327	65.9 (60.7 to 72.7)	62.8 (57.2 to 69.5)	23.2 (18.4 to 28.6)	50.6 (44.6 to 57.1)	44.7 (38.9 to 50.8)	15.9 (11.5 to 20.4)	20.8 (16 to 26.3)	47.4 (41.4 to 54)	34.5 (28.7 to 40.1)	16 (11.9 to 20.5)	71.7 (66.1 to 77.7)	23.9 (19.1 to 29.3)	46.4 (40.4 to 52.6)	35.1 (29.1 to 41.6)
Somerset ICS	93	72.4 (62.8 to 80.6)	71.6 (61.4 to 79.7)	27.4 (19 to 36.8)	51 (41.3 to 61.7)	44.1 (35 to 54.3)	17 (10.4 to 24.6)	25.6 (16.9 to 35.5)	53.5 (42.5 to 63.2)	34.9 (24.8 to 44.8)	16.8 (9.9 to 24.4)	70 (59.6 to 79.5)	27.1 (17.6 to 37.3)	49.9 (39.7 to 60.3)	38.1 (27.4 to 48.3)
Bristol, North Somerset and South Gloucestersh ire ICS	166	60 (51.7 to 67.8)	58.4 (50 to 66.4)	27.9 (22 to 36.4)	49.1 (41 to 57.2)	45.1 (37.3 to 52.4)	24.5 (18.4 to 31.8)	29.6 (23.6 to 37.9)	55.4 (47.5 to 63.5)	45.7 (38.6 to 53.9)	22.1 (16.2 to 29.9)	72.1 (64.2 to 79.3)	30.4 (24.5 to 38.8)	48 (39.9 to 56.1)	39.3 (33.3 to 47.6)
Bath and North East Somerset, Swindon and Wiltshire ICS	216	63.9 (57 to 70.8)	60.4 (53.5 to 67.6)	24.6 (18.7 to 29.7)	55.4 (48 to 62.4)	48.8 (42.2 to 55.1)	21.7 (16.1 to 27)	27.8 (21.4 to 33.3)	45.6 (38.4 to 52.2)	43.4 (36.1 to 49.9)	15.9 (11 to 20.6)	69.6 (63.6 to 76.5)	25.1 (19 to 30.5)	55.7 (49 to 62.8)	40.3 (32.9 to 46.9)
Dorset ICS	198	71 (64.1 to 77.7)	68.7 (61.7 to 75.4)	28.9 (22.4 to 36.6)	53.6 (46.4 to 60.4)	51.9 (44 to 59.2)	17.9 (12.3 to 24)	25.1 (18.7 to 32.3)	55 (47.7 to 62.2)	39.2 (32.2 to 46.5)	19.6 (13.8 to 25.7)	72.1 (65.8 to 78.1)	30.2 (23.6 to 37.5)	60.7 (54.7 to 68.1)	39.5 (32.1 to 46.8)
Hampshire and the Isle of Wight ICS	510	69.8 (65.8 to 74.4)	67.4 (63.4 to 72.2)	24.9 (21.3 to 29.5)	53 (49.1 to 58.1)	48.1 (43.9 to 53.5)	16.9 (14 to 20.6)	21.7 (18.4 to 25.5)	45.4 (41 to 50.3)	36.6 (32.1 to 41.1)	16.3 (13.1 to 19.5)	73.4 (69.6 to 77.8)	26 (22.2 to 30.2)	49.9 (45.9 to 54.7)	35.4 (31.3 to 40)

Gloucestershire ICS	120	57.2 (47.4 to 67)	55.6 (45.5 to 65.4)	23.6 (16.1 to 31.4)	47.8 (37.6 to 57.5)	39.2 (29.5 to 48.7)	15.1 (9.4 to 22.2)	27.6 (20.1 to 36.4)	52.6 (42.3 to 62)	32.6 (23.9 to 42.5)	17.5 (10.3 to 25.1)	71.8 (62 to 81)	26.2 (19 to 34.8)	53.5 (42.8 to 63.2)	34.5 (25.7 to 43.8)
Buckinghamshire, Oxfordshire and Berkshire West ICS	278	59.3 (53.7 to 66.4)	58.4 (52.8 to 65.3)	26.1 (19.7 to 30.5)	47.3 (41.8 to 54.7)	47.3 (41.4 to 53.9)	23.7 (17.5 to 28.2)	32.7 (26.5 to 37.3)	47.5 (40.5 to 53.3)	47.3 (40.2 to 52.8)	23.3 (17.8 to 29)	69 (63.9 to 75.4)	27.7 (22.1 to 34)	47.7 (41.9 to 54.8)	40.8 (34.6 to 46.6)
Healthier Lancashire and South Cumbria ICS	605	65.1 (60.6 to 69.1)	63 (58.5 to 67)	26.1 (22.6 to 30.2)	52.5 (47.8 to 56.9)	46.8 (42.4 to 51.3)	20.6 (17.3 to 24)	25.1 (21.7 to 28.7)	53.6 (49.5 to 58.3)	41.8 (37.9 to 46.3)	20 (16.9 to 24.1)	72.3 (68.4 to 76.2)	25.2 (22.1 to 29.2)	53.1 (48.4 to 57.2)	43 (39 to 47.3)
Cumbria and North East ICS	821	64.7 (61.4 to 68.2)	62.3 (59.2 to 66)	25.5 (22.6 to 29.3)	54.7 (51.3 to 58.5)	52.1 (48.6 to 55.9)	19 (16.4 to 22.6)	29.8 (26.8 to 33.6)	51.5 (48.1 to 55.3)	33.6 (30.3 to 37.3)	18.3 (15.8 to 21.6)	70.5 (67.3 to 74.2)	28.3 (24.9 to 31.9)	55.2 (51.8 to 59.2)	42.5 (39 to 46.5)
Humber, Coast and Vale ICS	491	65.1 (60.2 to 70.4)	63.3 (58.4 to 68.7)	24.2 (20.1 to 29)	53.1 (48.2 to 58.5)	44.2 (39.6 to 49.6)	18.1 (15.1 to 22.6)	26.9 (22.7 to 31.4)	48.3 (43.4 to 53.3)	32.5 (28.1 to 37.6)	19.7 (15.9 to 23.9)	71.1 (66.7 to 76)	25.1 (21 to 29.4)	45.3 (40.6 to 50.4)	41.1 (36 to 46.4)
Surrey Heartlands Health and Care Partnership	224	69.8 (63 to 76)	68.9 (62.1 to 75.3)	19.2 (13.2 to 24.3)	54.8 (47.1 to 61.7)	51.6 (44.3 to 58.4)	11.4 (8 to 16.1)	23.6 (17 to 29)	48.4 (41 to 55.5)	39.4 (32.6 to 47.2)	18.5 (12.2 to 24.2)	73.8 (67.1 to 80.1)	24.1 (17.6 to 30.6)	54.8 (47.1 to 61.6)	38.7 (30.8 to 44.9)
Sussex Health and Care Partnership	383	64.2 (58.6 to 69.4)	61.3 (55.6 to 66.3)	23.1 (18.5 to 27.6)	49 (43.1 to 53.6)	44.6 (39.3 to 50)	17 (13 to 20.6)	24.1 (20.3 to 28.8)	47.6 (41.9 to 52.5)	36.7 (31.6 to 41.9)	13 (9.8 to 16.4)	69.2 (64 to 74.3)	19.7 (15.9 to 23.9)	52.1 (46.3 to 57.5)	37.8 (32.6 to 42.7)
West Yorkshire and Harrogate (Health and Care Partnership)	455	63 (57.7 to 67.6)	60.4 (54.7 to 65)	30 (25.9 to 35)	51.7 (46.5 to 56.8)	54.6 (49.3 to 59.6)	19 (15.4 to 22.8)	28.4 (23.2 to 32.5)	51.2 (45.8 to 56.3)	38.4 (33.3 to 43)	18.1 (14.3 to 22)	69.3 (64.6 to 74)	26.3 (21.6 to 30.7)	50.1 (44.4 to 54.5)	40 (34.8 to 45)
Ayrshire and Arran	128	65 (55.3 to 73.7)	63.8 (54.6 to 72.6)	23.4 (16.4 to 31.3)	53.9 (44.5 to 63.4)	46.5 (37.4 to 55.9)	17.2 (10.9 to 23.6)	37.5 (28.1 to 46.8)	51.5 (42.3 to 61.3)	38.5 (29.5 to 47.9)	23 (15.4 to 30.9)	73.3 (64.2 to 81.2)	19.8 (12.9 to 27.6)	56.1 (46.9 to 65.7)	32.9 (24.6 to 42)

Borders	70	68.8 (53.5 to 82.3)	68.8 (53.5 to 82.3)	18.9 (8.2 to 30.9)	59.2 (44.7 to 73.3)	48.1 (33.8 to 65)	16.9 (6.9 to 30.2)	31.9 (19.1 to 46.1)	59.4 (43.4 to 72.2)	40.5 (26 to 55.9)	14.5 (5.1 to 24.6)	65.3 (50.4 to 78.9)	17.2 (7.7 to 28.6)	55.6 (41.8 to 70.7)	30 (17.7 to 42.4)
Dumfries and Galloway	92	70.9 (59.5 to 82.1)	66.1 (54.4 to 78.7)	15.9 (8.3 to 25.2)	48.3 (36 to 62.2)	39.7 (27 to 51.3)	13.9 (6.1 to 22.1)	19.4 (10.6 to 29.2)	41.6 (29.5 to 54.6)	33.8 (21.7 to 47.2)	16.6 (7.8 to 26.4)	76.2 (65.8 to 85.7)	32.2 (20.5 to 45.7)	40.9 (29.3 to 53.2)	37.1 (24 to 49.8)
Forth Valley	121	77.5 (67.9 to 85.4)	71 (60.9 to 80.1)	37.3 (27.3 to 46.6)	61.8 (50.2 to 70.7)	54 (43.2 to 63.4)	21.2 (13 to 29.7)	34.9 (25.9 to 45.1)	47.1 (37.4 to 58)	43 (32.2 to 51.6)	24.7 (16.3 to 33.5)	76.7 (66.8 to 85.2)	31.7 (21.9 to 41.1)	46 (36.2 to 56.9)	35.6 (26.2 to 45.9)
Grampian	168	59.7 (50.8 to 68.2)	54.6 (45.7 to 63.1)	20 (13.9 to 25.9)	45.8 (37.7 to 54.8)	41.3 (33.3 to 50.2)	17.7 (12 to 24.1)	28.5 (20.3 to 35.8)	50 (41.7 to 58.8)	41.8 (33.6 to 50.8)	24.1 (17.3 to 32.3)	62.8 (54.5 to 71.9)	27 (19.7 to 36.1)	47.6 (39.3 to 56.3)	40.6 (32.2 to 49)
Highland	134	56.3 (46.3 to 66.4)	55.6 (45.5 to 66.1)	20.6 (13.8 to 29.9)	50.9 (39.9 to 60.7)	43.6 (34.1 to 53.8)	24.2 (14.8 to 33.9)	33.9 (25.6 to 44.8)	45.3 (35.7 to 55.6)	35.4 (25.2 to 45.3)	12 (6.4 to 17.4)	69.5 (59 to 79.6)	16.6 (10.2 to 23.5)	51.9 (41.7 to 61.8)	35.5 (25.3 to 45.3)
Lothian	281	61.3 (54.8 to 67.6)	59.8 (53.5 to 66.1)	25.2 (19.7 to 30.3)	58.3 (51.9 to 65.1)	52.9 (47.3 to 60.3)	16.1 (11.8 to 21.1)	30.2 (25 to 36.7)	48.3 (41.9 to 54.7)	37.9 (32 to 44.5)	19.5 (14.9 to 24.4)	73 (67.7 to 79)	28 (21.8 to 33.2)	52 (45.9 to 59.1)	36.7 (31.1 to 43.4)
Fife	84	67.4 (55.6 to 79.9)	67.4 (55.6 to 79.9)	31.3 (20.6 to 41.7)	56.5 (43.6 to 69.2)	44.8 (32.8 to 57.5)	11.5 (6.6 to 20.1)	24.7 (13.5 to 35.5)	50.8 (38.5 to 64.2)	43.8 (31.8 to 56.4)	18.5 (10 to 29)	73.3 (60.7 to 85)	17.2 (9 to 26.8)	53.6 (40.7 to 66.4)	38.4 (26.5 to 50.9)
Tayside	149	58.9 (49.8 to 67.3)	55.4 (46.5 to 64.1)	24.3 (18.1 to 32.3)	60.4 (51.7 to 68.5)	52.5 (43.7 to 60.9)	19.6 (13.4 to 26.6)	22 (15.3 to 29.4)	49.5 (40.2 to 58.1)	41.3 (32.5 to 50.1)	21.5 (13.6 to 29.6)	71.6 (62.6 to 79.5)	26.7 (19.2 to 34.6)	49.1 (40.7 to 58.7)	34 (25.4 to 42.6)
Greater Glasgow and Clyde	346	65.5 (59.9 to 71.6)	63.7 (58.2 to 70.2)	24.7 (19.8 to 29.9)	58.8 (52.8 to 64.8)	48.6 (42.5 to 55.1)	18.7 (14.4 to 23.6)	32.4 (27.7 to 38.9)	50.7 (44.2 to 56.4)	33.5 (27.4 to 38.7)	17.6 (12.5 to 22)	70.3 (65 to 76.5)	26.8 (21 to 31.9)	49.2 (43.5 to 56.3)	41.3 (35.5 to 47.2)
Lanarkshire	239	62.9 (55.5 to 70.4)	59.6 (52 to 66.7)	28.4 (22 to 35.8)	50.8 (42.9 to 58.6)	55.6 (47.7 to 63.6)	15 (10.1 to 20.1)	26.1 (19.5 to 32.3)	49.5 (42.1 to 57.3)	37.5 (29.7 to 44.3)	16.9 (10.8 to 22.4)	75.3 (68.1 to 81.9)	29.3 (21.9 to 36.3)	44.4 (36.9 to 51.8)	42.3 (34.2 to 49.6)

Betsi Cadwaladr University Health Board	323	63.8 (58.4 to 69.8)	61.1 (55.4 to 67.2)	19.1 (15.1 to 23.6)	52.5 (46.5 to 58.5)	47.9 (42.2 to 53.6)	16 (11.5 to 19.9)	24.6 (19.3 to 29.4)	46 (39.9 to 51.5)	30.5 (25.8 to 36.2)	15.5 (11.3 to 19.3)	70 (64.5 to 75.4)	24.5 (19.2 to 29.9)	46.3 (39.7 to 52)	35.8 (30 to 41.1)
Powys Teaching Health Board	77	71.4 (58.2 to 83)	66.6 (53.9 to 79.3)	33.1 (21 to 45.6)	65.4 (52.6 to 77.7)	47.7 (34.2 to 61.4)	14.2 (7.2 to 23)	23.9 (13.8 to 36)	54.8 (41.6 to 67.7)	46.1 (33.5 to 59.5)	29.3 (17.3 to 42.3)	76.3 (63.5 to 87)	40.2 (27.5 to 53.9)	50 (36.8 to 63.7)	52.1 (40.4 to 65.2)
Hywel Dda University Health Board	107	59.0 (49.7 to 71)	53.2 (42.9 to 66.2)	23.2 (15.4 to 32.4)	54.6 (45.4 to 67.4)	40.5 (30.8 to 52.5)	16.2 (8.3 to 25.9)	23.4 (14.9 to 33.3)	43.5 (33 to 54.9)	29.5 (20.5 to 40)	19.9 (11.6 to 29.6)	59.2 (49.1 to 71.4)	26.5 (17.2 to 36.5)	54.3 (43.1 to 65)	38.5 (28.1 to 50.4)
Aneurin Bevan University Health Board	191	62.1 (54.5 to 69.6)	61.7 (53.8 to 69)	28.3 (21.4 to 35.6)	60.9 (53 to 68.2)	52.4 (44.4 to 60.3)	21.1 (14.9 to 26.9)	26.7 (20.3 to 33.2)	49 (42 to 56.8)	39.1 (31.8 to 47.6)	22.6 (16.7 to 29)	71.8 (64.2 to 78.5)	26.7 (20.1 to 33.6)	55.6 (48 to 63)	39 (31.2 to 46.9)
Cardiff and Vale University Health Board	84	56.7 (44.2 to 65.2)	54.9 (42.5 to 63.3)	33 (23.4 to 44.3)	46.7 (33.7 to 54.5)	45.1 (32.5 to 54.8)	20.4 (13 to 31)	29.4 (21 to 40.3)	47 (34.6 to 56.1)	33.5 (22.8 to 44.2)	24.6 (15.4 to 34.6)	65.5 (55.9 to 76.1)	26.6 (16.8 to 37.2)	45.6 (35.6 to 57.5)	42.1 (31.9 to 53.1)
Cwm Taf Morgannwg University Health Board	155	64.8 (55.5 to 72.9)	63.3 (54 to 71.5)	29.6 (21.7 to 37.8)	47.5 (38.4 to 56.5)	39.2 (31.2 to 48.4)	19.2 (12.4 to 26.9)	31.8 (23.6 to 40.6)	45.8 (36.7 to 55.2)	35.1 (26.4 to 44.8)	24 (16.1 to 32.9)	65.5 (57.4 to 73)	32 (22.8 to 40.2)	48.4 (39.2 to 57.9)	41.5 (32.5 to 50.1)
Swansea Bay University Health Board	128	59.9 (50.1 to 67.1)	59.3 (49.5 to 66.7)	28.6 (21.4 to 36.1)	53.3 (44.9 to 62.9)	53.6 (45.3 to 61.7)	20.8 (14.6 to 30)	27.5 (19.9 to 35.7)	53.5 (44.2 to 61.7)	35.2 (26 to 42.3)	24.6 (16.8 to 31.6)	67.1 (58.2 to 75.1)	23.9 (15.7 to 30.6)	55.4 (46 to 63.3)	33.7 (25.3 to 41.5)
Northern Ireland Health & Social Care Board	680	67.9 (63.6 to 71.5)	65.5 (60.9 to 69.4)	28.6 (24.4 to 32.2)	57.4 (53.2 to 61.4)	49.5 (45.2 to 53.5)	18.8 (15.6 to 21.9)	29.8 (25.7 to 33.3)	50.2 (45.8 to 54.3)	38.2 (33.7 to 41.9)	19.7 (16.1 to 23)	71.6 (67.8 to 75.4)	27.5 (23.9 to 31.4)	54.5 (50.5 to 58.7)	40.1 (35.4 to 43.8)