Short Report

Incidence of suicidality in people with depression over a 10-year period treated by a large UK mental health service provider

Emma R. Francis, Daniela Fonseca de Freitas, Craig Colling, Megan Pritchard, Gioluliana Kadra-Scalzo, Natalie Viani, Jaya Chaturvedi, Tom R. Denee, Cicely Kerr, Mitesh Desai, Gemma Scott, Hitesh Shetty, Mathew Broadbent, David Chandran, Johnny Downs, Sumithra Velupillai, Mizanur Khondoker, Robert Stewart, Rina Dutta* and Richard D. Hayes*

Summary
We describe the incidence of suicidality (2007–2017) in people with depression treated by secondary mental healthcare services at South London and Maudsley NHS Trust (n = 26 412). We estimated yearly incidence of ‘suicidal ideation’ and ‘high risk of suicide’ from structured and free-text fields of the Clinical Record Interactive Search system. The incidence of suicidal ideation increased from 0.6 (2007) to 1 cases (2017) per 1000 population. The incidence of high risk of suicide, based on risk forms, varied between 0.06 and 0.50 cases per 1000 adult population (2008–2017). Electronic health records provide the opportunity to examine suicidality on a large scale, but the impact of service-related changes in the use of structured risk assessment should be considered.

Keywords
Suicidal ideation; high risk of suicide; incidence; electronic health records; depression.

Copyright and usage
© The Author(s), 2021. Published by Cambridge University Press on behalf of the Royal College of Psychiatrists. This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (https://creativecommons.org/licenses/by/4.0/), which permits unrestricted re-use, distribution, and reproduction in any medium, provided the original work is properly cited.

Inclusion criteria:
(a) primary diagnosis of a depressive episode or recurrent depressive disorder (F32–F33) according to ICD-10;5
(b) aged 18 years or older at the time of diagnosis;
(c) at least one general practitioner or home address within the four catchment London boroughs at any time point during the observation period from 1 January 2007 to 31 December 2017.

Monitoring changes in suicidality in depression over time is important for understanding the burden this places on individuals, healthcare services and society. In England and Wales, the most recent Office for National Statistics report of registered deaths by suicide observed that there were 11.0 deaths per 100 000 population (age-standardised rate).1 Although the majority of people diagnosed with depression do not die by suicide, they do have an increased risk compared with the rest of the population.2 To our knowledge, there are no studies that have described the incidence of high risk of suicide and of suicidal ideation among people with depression treated in UK secondary mental healthcare. The aims of this report were to identify the incidence of (a) high risk of suicide and (b) suicidal ideation among people diagnosed with depressive disorder treated in secondary mental healthcare.

Patient data were extracted from the Clinical Record Interactive Search (CRIS) database at the South London and Maudsley NHS Foundation Trust (SLaM). CRIS permits search and retrieval of information in the de-identified electronic health records (EHRs) for research purposes.3 SLaM is a large provider of comprehensive mental health services for approximately 1.3 million people situated in four London boroughs: Lewisham, Southwark, Lambeth and Croydon.4 We assembled the sample for analysis using a combination of routinely collected data from structured fields and natural language processing (NLP) algorithms that captured data from free-text fields.

Method

Identifying patients with suicidal ideation
The term ‘suicidal ideation’ used in this report refers to a patient thinking or planning to take their own life as recorded by a clinician in the EHR. Suicidal ideation was identified using an NLP algorithm that applies basic rules to free-text fields. These rules identify sentences containing the common terms used in research and clinical settings: ‘suicid*’ and ‘ideat*’ (the asterisk denotes a wild card for any combination of letters following).6 Unlike a keyword search, the NLP algorithm takes into account contextual information

* Joint senior authors.
Table 1: Descriptive data for patients receiving secondary care treatment for depression by group (‘at high-risk of suicide’ and ‘with suicidal ideation’)

| Variables                                                   | High risk of suicide (n = 1328) | Suicidal ideation (n = 9547) |
|-------------------------------------------------------------|---------------------------------|------------------------------|
| Sociodemographic and socioeconomic characteristics          |                                 |                              |
| Gender, n (%), 95% CI                                       |                                 |                              |
| Male                                                        | 652 (49.1, 46.3–51.8)           | 3912 (41.0, 40.0–42.0)       |
| Female                                                      | 675 (50.8, 48.1–53.6)           | 5633 (59.0, 58.0–60.0)       |
| Other                                                       | <10                             | <10                          |
| Not specified                                               | <10                             | <10                          |
| Not known                                                   | <10                             | <10                          |
| Age, years                                                  |                                 |                              |
| Mean (s.d.; min–max)                                        | 45.4 (17.1; 18.0–97.3)          | 44.2 (17.4; 18.0–98.4)       |
| Median (IQR)                                                | 44.4 (31.5–55.0)                | 41.8 (30.4–53.7)             |
| Age group, years: n (%), 95% CI                             |                                 |                              |
| 18–29                                                       | 294 (22.1, 19.9–24.5)           | 2315 (24.3, 23.4–25.1)       |
| 30–39                                                       | 254 (19.1, 17.0–21.3)           | 2062 (21.4, 20.8–22.4)       |
| 40–49                                                       | 320 (24.1, 21.8–26.5)           | 2128 (22.3, 21.5–23.1)       |
| 50–59                                                       | 213 (16.0, 14.1–18.1)           | 1381 (14.5, 13.8–15.2)       |
| 60–69                                                       | 109 (8.2, 6.8–9.8)              | 648 (6.8, 6.3–7.3)           |
| 70–79                                                       | 87 (6.6, 5.3–8.0)               | 557 (5.8, 5.3–6.3)           |
| 80–89                                                       | 40 (3.0, 2.2–4.1)               | 382 (4.0, 3.6–4.4)           |
| 90–99                                                       | 11 (0.8, 0.4–1.4)               | 74 (0.8, 0.6–1.0)            |
| Ethnic group: n (%), 95% CI                                 |                                 |                              |
| White                                                       | 880 (67.8, 65.2–70.4)           | 5828 (63.2, 62.2–64.2)       |
| Black/African/Caribbean/Black British                      | 208 (16.0, 14.1–18.1)           | 1752 (19.0, 18.2–19.8)       |
| Asian/Asian British                                        | 81 (6.2, 5.0–7.7)               | 525 (5.7, 5.2–6.2)           |
| Mixed/multiple ethnic groups                                | 25 (1.9, 1.3–2.6)               | 206 (2.3, 2.0–2.6)           |
| Other ethnic group                                          | 103 (7.9, 6.5–9.3)              | 911 (10.0, 9.1–10.5)         |
| Not stated or missing                                       | 31 (2.3)                        | 323 (3.4)                    |
| Neighbourhood deprivation, based on the English index of    |                                 |                              |
| Multiple Departrion deciles: n (%), 95% CI                  |                                 |                              |
| 1–2: 20% most deprived                                     | 462 (36.2, 33.6–38.9)           | 3487 (37.5, 36.5–38.5)       |
| 3–4: 20% second most deprived                              | 561 (44.0, 41.3–46.8)           | 4032 (43.9, 42.9–44.9)       |
| 5–6: 20% middle deprivation                                | 163 (12.8, 11.0–14.7)           | 1216 (13.1, 12.4–13.8)       |
| 7–8: 20% second least deprivation                          | 64 (5.0, 3.9–6.4)               | 375 (4.0, 3.6–4.5)           |
| 9–10: 20% least deprived                                   | 25 (2.0, 1.3–2.9)               | 137 (1.5, 1.2–1.7)           |
| Missing                                                     | 53 (4.0)                        | 250 (2.6)                    |
| Homeless (ever) with no address at index: n (%), 95% CI     | 41 (3.1, 2.2–4.1)               | 175 (1.8, 1.5–2.1)           |
| Clinical factors                                           |                                 |                              |
| Earliest ICD-10 diagnosis that met the study criteria: n (%), 95% CI | 1034 (77.9, 75.5–80.1) | 7456 (78.1, 77.2–78.9) |
| Depressive episode (F33x)                                  | 294 (22.1, 19.9–24.5)           | 2091 (21.9, 21.1–22.7)       |
| Time from depressive disorder diagnosis to identification of high-risk of suicide or suicidal ideation, days | | |
| Mean (s.d.)                                                 | 774.4 (992.3)                   | 382.4 (686.2)                |
| Median (IQR)                                                | 330.5 (150.0–1101.0)            | 43.0 (1.0–429.3)             |
| Range                                                       | 0–3971                          |                              |
| Psychiatric comorbidity: n (%), 95% CI                     |                                 |                              |
| Personality disorder (F60)                                 | 270 (20.3, 18.2–22.6)           | 792 (8.3, 7.8–8.9)           |
| Substance-use disorder (F10–F19)                           | 246 (18.2, 16.2–20.4)           | 1113 (11.7, 11.0–12.3)       |
| Neurotic, stress-related and somatoform disorders (F40–F48)| 386 (29.1, 26.6–31.6)           | 2111 (22.1, 21.3–23.0)       |
| Bipolar disorder (F31x)                                    | 68 (5.1, 4.0–6.4)               | 292 (3.1, 2.7–3.4)           |
| Schizophrenia (F20–F29)                                    | 113 (8.5, 7.1–10.1)             | 552 (5.8, 5.3–6.3)           |
| Organic disorder (F0x)                                     | 59 (4.4, 3.4–5.7)               | 428 (4.5, 4.1–4.9)           |
| Service use                                                |                                 |                              |
| First week                                                 |                                 |                              |
| Patients who had at least one in-patient stay, n (%), 95% CI| 567 (42.7, 40.0–45.4)           | 1697 (17.8, 17.0–18.6)       |
| In-patient days, n: mean (s.d.), median (IQR)              | 6.2 (2.5), 8 (4–8)              | 6.1 (2.5), 8 (4–8)           |
| First month                                                |                                 |                              |
| Patients who had at least one in-patient stay, n (%), 95% CI| 598 (45.0, 42.3–47.8)           | 1845 (19.3, 18.5–20.1)       |
| In-patient days, n: mean (s.d.), median (IQR)              | 16.3 (11.7), 15 (5–30)          | 16.7 (11.6), 15 (5–30)       |
| Six months                                                 |                                 |                              |
| Patients who had at least one in-patient stay, n (%), 95% CI| 641 (48.3, 45.5–51.0)           | 2143 (22.5, 21.6–23.3)       |
| In-patient days, n: mean (s.d.), median (IQR)              | 34.3 (43.2), 18 (6–43)          | 37.3 (45.1), 19 (6–50)       |
| Twelve months                                              |                                 |                              |
| Patients who had at least one in-patient stay, n (%), 95% CI| 657 (49.5, 46.7–52.2)           | 2303 (24.1, 23.3–25.0)       |
| In-patient days, n: mean (s.d.), median (IQR)              | 42.3 (63.3), 20 (6–47)          | 46.0 (65.3), 21 (6–56)       |
| Patients detained under MHA section in the 12 months following the identification of suicidality: n (%), 95% CI | | |
| 206 (15.5, 13.6–17.6)                                      | 700 (7.3, 6.8–7.9)              |
around the term of interest. This allows automated coding of entities from free text and enables them to be distinguished from negation statements and irrelevant text entities to identify patients (precision (positive predictive value): 92%; recall (sensitivity): 88%). Examples of free-text fields searched by the algorithm are events (day-to-day notes) and correspondence between patient and clinician or between clinicians about the patient. We identified patients using NLP as there is evidence to suggest that using free-text fields might increase the number of patients in our sample, as clinicians may not record the presence of suicidal ideation using ICD codes (structured fields). It is important to note that complex terms or phrases used by the clinician, such as ‘planning to end life’, will not have been classified as a positive statement of suicidal ideation by this algorithm as these terms do not feature in the basic rules applied. A recorded suicide attempt was also not classified as a positive statement of suicidal ideation. Further details as to what is captured by the algorithm can be found in Fernandes et al (2018).

Ethics statement

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. The use of CRIS as a database for secondary analysis was approved by Oxford Research Ethics Committee C (18/SC/0372). The data is used in an anonymised and data-secure format under strict governance procedures. CRIS data is available to researchers with appropriate credentials (provided by the South London and Maudsley NHS Trust). Projects are approved by a CRIS oversight committee, a body set up by and reporting to the South London and Maudsley Caldicott Guardian. Individual patient consent was not required for the use of the de-identified CRIS data.

Data analysis

Analyses were conducted using STATA for Windows, release 5. When calculating incidence of high risk of suicide and suicidal ideation (separately), cases contributed to the numerator for the first entry of each of these forms of suicidality and could not contribute to the denominator or numerator in subsequent years. This was because they were no longer considered part of the at-risk population for the condition being studied, as we were only interested in the first report of suicidality in the observation period. To calculate incidence, the annual adult (≥18 years) population mid-year estimates (2007–2017) for Lewisham, Southwark, Lambeth and Croydon, drawn from the Office for National Statistics database, were used as the denominator. The incidence of high risk of suicide in our sample is reported from 2008, which is the time point at which risk forms became electronically accessible. To gain insight into possible changes in the use of the risk forms between 2008 and 2017, we calculated the number of former (‘full risk assessment form’ from 2008), current (‘risk assessment tool’ from 2016) and total risk assessments (both risk assessment forms). The incidence of suicidal ideation was calculated between the years 2007 and 2017.

Results

There were 26,412 patients diagnosed with depression (F32x–F33) treated in secondary care during 2007–2017. Table 1 details the sociodemographic, socioeconomic and clinical characteristics of these patients. In the high risk of suicide group (mean age: 45.4 years) there was a similar proportion of men and women (49% and 51%); however, the suicidal ideation group (mean age: 44.2 years) had a lower proportion of men than women (41% and 59%). Both groups had a higher distribution of patients identified as White (high risk of suicide: 67.8%; suicidal ideation: 63.2%). The majority of patients in both groups lived in the socioeconomic most deprived areas of England. Neurotic, stress-related and somatoform disorders (F40–F48) were the most common psychiatric comorbidities in both groups.

Of the total sample, 1,328 (5.03%) were identified as being at high risk of suicide over the observation period. Although the new risk assessment tool was introduced in 2016, the previous risk assessment form continued to be used beyond 2016, albeit at low levels (219 administered in 2017). The incidence of high risk of suicide, based on these forms, varied between 0.06 and 0.50 cases per 1000 adult population, also highest in 2016 and 2017 (Supplementary Figs 1 and 2, available at https://doi.org/10.1192/bio.2021.1054). The incidence of high risk of suicide closely followed the number of risk forms administered.

Of the total sample, 9,547 (36.15%) were identified as having suicidal ideation between 2007 and 2017. Within the 11-year observation period, the yearly incidence of depression with suicidal ideation varied between 0.61 and 1.12 cases per 1000 adult population and was highest in 2016 and 2017 (Supplementary Fig. 3).

Discussion

To our knowledge, this is the first study to investigate the incidence of suicidality in depression in adults engaged with UK secondary care services. We found a rising trend in suicidal ideation between the years 2007 and 2017 which may indicate an increase in suicidality in this referred population. Alternatively, this may be partially explained by the changes in the nature or circumstances of the catchment population. After 2015, there was an exponential increase in the incidence of high risk of suicide which may be due to trust-wide clinical practice changes such as the observed increase in the use of risk assessment forms.

The most recent National Confidential Inquiry into Suicide and Safety in Mental Health found that 20% of people who died by suicide had had contact with mental healthcare services within the prior 12 months. However, a systematic review of the literature observed that measuring suicide ideation alone is not sensitive enough to predict suicide, finding that 60% of people who died by suicide had not expressed suicidal ideation.

This investigation has several strengths. CRIS features a wealth of patient-level longitudinal data that include demographic and clinical characteristics that may be used to identify patients at risk. As SLaM is close to being a monopoly mental healthcare provider for the four London boroughs it serves, our sample is likely to be broadly generalisable to patients treated in secondary care in similarly ethnically diverse and deprived areas in the UK.

However, there will be people who experience suicidality and do not receive secondary care assessment, because their depression remains undiagnosed or is managed in primary care alone. Further to this, owing to how we identified patients we are unable to determine whether the severity of illness increased over the years or whether more people were diagnosed with depression over the years. In addition, it is important to acknowledge that, as the EHR became available trust-wide from 2008, there may have been a steep increase in reported events from 2008–2009 owing to changes in the use of the risk forms during this transition period. However, regarding the incidence of suicidal ideation we have no reason to believe this was affected by implementation of the electronic health records. We expect that clinicians would describe this condition in a similar way whether this be in an electronic or...
paper-based record. We observe more of a steady increase in suicidal ideation over time rather than a sharp increase in the first few years.

Our findings show that clinical reporting can have a notable impact on incidence estimates. Future research should investigate the consistency of these trends across other sites using routinely collected data and determine whether there is an association between high risk of suicide and suicidal ideation groups by obtaining data-sets that feature recurrent events in the same year. Investigating the associations between the variables described and outcomes discussed in this short report may provide new insights.

Emma R. Francis 1, Institute of Psychiatry, Psychology and Neuroscience, King’s College London, UK; and Division of Psychology and Language Sciences, University College London, UK; Daniela Fonseca de Freitas 2, Institute of Psychiatry, Psychology and Neuroscience, King’s College London, UK; Craig Colling 3, South London and Maudsley NHS Foundation Trust, UK; Megan Pritchard 4, South London and Maudsley NHS Foundation Trust, UK; Gioliana Krada-Scalzo 5, Institute of Psychiatry, Psychology and Neuroscience, King’s College London, UK; Natalia Viani 6, Institute of Psychiatry, Psychology and Neuroscience, King’s College London, UK; Jaya Chaturvedi 7, Institute of Psychiatry, Psychology and Neuroscience, King’s College London, UK; Tom R. Denee 8, Janssen-Cilag Limited, High Wycombe, UK; Cicely Kerr 9, Janssen-Cilag Limited, High Wycombe, UK; Mitlesh Desai 10, Janssen-Cilag Limited, High Wycombe, UK; Emma Scott 11, Janssen-Cilag Limited, High Wycombe, UK; Hitesh Shetty 12, South London and Maudsley NHS Foundation Trust, UK; Mathew Broadbent 13, South London and Maudsley NHS Foundation Trust, UK; David Chandran 14, Institute of Psychiatry, Psychology and Neuroscience, King’s College London, UK; and South London and Maudsley NHS Foundation Trust, UK; Sumithra Velupillai 15, Institute of Psychiatry, Psychology and Neuroscience, King’s College London, UK; Mizarum Khondoker, Norwich Medical School, University of East Anglia, Norwich, UK; Robert Stewart 16, Institute of Psychiatry, Psychology and Neuroscience, King’s College London, UK; and South London and Maudsley NHS Foundation Trust, UK; Rina Dutta 17, Institute of Psychiatry, Psychology and Neuroscience, King’s College London, UK; South London and Maudsley NHS Foundation Trust, UK; Richard D. Hayes 18, Institute of Psychiatry, Psychology and Neuroscience, King’s College London, UK

Correspondence: Emma R. Francis. Email: emma.francis.19@ucl.ac.uk

First received 3 Mar 2021, final revision 22 Sep 2021, accepted 23 Oct 2021

Supplementary material
Supplementary material is available online at https://doi.org/10.1192/bjo.2021.1054.

Data availability
A dedicated CRIS Security Model has been developed to ensure that the ethical and legal rights of patients are protected. Access to CRIS data requires approval by the CRIS Oversight Committee.

Author contributions
E.R.F. led the analyses and interpretation of data and drafted the first version of the manuscript. D.F.F. carried out analysis, contributed to the interpretation of data and assisted with study design. C.C. and H.S. led data extraction and the interpretation of results. M.P. made substantial contributions to data extraction and the interpretation of the data structure and results. G.K.S. provided epidemiological support, assisted with study design and assisted with the revision of the manuscript. T.R.O., C.K., M.D. and G.S. led the conceptualisation and design of the work. M.B. provided guidance on the data extraction and design of the work. D.C. conceptualised and provided interpretation of the natural language processing applications used in the report. J.D. provided guidance on the underlying clinical practice reflected in the data. S.V., N.V. and J.C. made substantial contributions to conceptualisation and design of the work. R.S. provided epidemiological support, assisted with study design and provided guidance on the underlying clinical practice reflected in the data. R.D.H. and R.D. jointly led the conceptualisation and design of the work and the interpretation of data. R.D. provided guidance on the underlying clinical practice reflected in the data. M.K. provided guidance on statistical aspects of the paper, assisted with interpretation of the analysis, provided critical comments on important intellectual content and edited the manuscript. All authors drafted and/or critically revised the manuscript and approved the final version.

Funding
This report represents independent research funded by Janssen-Cilag Limited carried out at the National Institute for Health Research (NIHR) Biomedical Research Centre at South London and Maudsley NHS Foundation Trust and King’s College London. This research used the Clinical Record Interactive Search (CRIS) platform funded and developed by the NIHR Biomedical Research Centre at South London and Maudsley NHS Foundation Trust and King’s College London and a joint infrastructure grant from Guy’s and St Thomas’ Charity and the Maudsley Charity (grant BR1-2011-10020). D.F.F., G.K.S., H.S., R.D.H. and R.S. have received salary support from the NIHR Biomedical Research Centre at South London and Maudsley NHS Foundation Trust and King’s College London. R.S. is additionally funded by: a Medical Research Council Mental Health Data Pathfinder Award to King’s College London; an NIHR Senior Investigator Award; the NIHR Applied Research Collaboration South London at King’s College Hospital NHS Foundation Trust. R.D. is funded by a Clinician Scientist Fellowship (Research project e-HOST-IT) from the Health Foundation in partnership with the Academy of Medical Sciences. The views expressed are those of the authors and not necessarily those of the NHS, the NIHR, the Department of Health and Social Care or Janssen-Cilag Limited. This article was made open access with the financial support of King’s College London.

R.S. has received research support in the past 36 months from janssen, GSK and Takeda. R.H.D. has received research funding from Roche, Pfizer, Lundbeck and Janssen. R.D. and S.V. have received research funding from Janssen. T.R.D. and G.S. are employees of Janssen. M.D. is a former employee of Janssen. G.K.S. has received funding from janssen and Lundbeck. E.R.F. and D.F.F. have received salary support from Janssen and H. Lundbeck.

Declaration of interest

1 Official for National Statistics. Suicides in England and Wales: 2019 Registrations. ONS (https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/suicidesintheunitedkingdom/2019registrations).

2 Kapur N, Hunt IM, Windfuhr K, Rodway C, Webb R, Rahman MS, et al. Psychiatric in-patient care and suicide in England, 1997 to 2008: a longitudinal study. Psychol Med 2013; 43: 61–71.

3 Perera G, Broadbent M, Callard F, Chang CK, Downes J, Dutta R, et al. Cohort profile of the South London and Maudsley NHS Foundation Trust Biomedical Research Centre (SLAM BRC) case register: current status and recent enhancement of an electronic mental health record-derived data resource. BMJ Open 2016; 6(3): e008721.

4 Stewart W, Soremekun M, Perera G, Broadbent M, Callard F, Denis M, et al. The South London and Maudsley NHS Foundation Trust Biomedical Research Centre (SLAM BRC) case register: development and descriptive data. BMC Psychiatry 2009; 9: 51.

5 World Health Organization. The ICD-10 Classification of Mental and Behavioural Disorders: Clinical Descriptions and Diagnostic Guidelines. WHO, 1992.

6 Fernandes AC, Dutta R, Velupillai S, Sanyal J, Stewart W, Chandran D. Identifying suicide ideation and suicidal attempts in a psychiatric clinical research data-base using natural language processing. Sci Rep 2018; 8(1): 7426.

7 Perera G, Broadbent M, Callard F, Chang CK, Downes J, Dutta R, et al. Cohort profile of the South London and Maudsley NHS Foundation Trust biomedical research centre (SLAM BRC) case register: current status and recent enhancement of an electronic mental health record-derived data resource. BMJ Open 2016; 6(3): e008721.

8 Anderson HD, Pace WD, Brandt E, Nielsen RD, Allen RR, Libby AM, et al. Monitoring suicidal patients in primary care using electronic health records. J Am Board Fam Med 2015; 28: 65–71.

9 StataCorp. Stata Statistical Software: Release 15. StataCorp LLC, 2017.

10 Rassen JA, Bartels DB, Schneeweis S, Patrick AR, Munk W. Measuring prevalence and incidence of chronic conditions in claims and electronic health record databases. Clin Epidemiol 2018; 11: 1–15.

11 Office for National Statistics. Estimates of the population for the UK, England and Wales, Scotland and Northern Ireland (Dataset). ONS. Available from: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesnocottelandnorthernireland.

12 Appleby L, Kapur N, Shaw J. National Confidential Inquiry into Suicide and Safety in Mental Health. Annual Report: England, Northern Ireland, Scotland and Wales. University of Manchester, 2019.

13 McHugh CM, Corderoy A, Ryan CJ, Hickie IB, Large MM. Association between suicidal ideation and suicide: meta-analyses of odds ratios, sensitivity, specificity and positive predictive value. BJPsych Open 2019; 5(2): e18.