

# Police-led real-time surveillance system for suspected suicides in Great Britain

Lisa Marzano ,<sup>1</sup> Hilary Norman,<sup>1</sup> Baljit Sohal,<sup>2</sup> Keith Hawton,<sup>3</sup> Richard Mann<sup>2</sup>

<sup>1</sup>Psychology Department, Middlesex University, London, UK

<sup>2</sup>Public Protection and Vulnerability, British Transport Police, London, UK

<sup>3</sup>Department of Psychiatry, University of Oxford, Oxford, UK

## Correspondence to

Dr Lisa Marzano, Middlesex University, London NW4 4BT, UK; l.marzano@mdx.ac.uk

Received 7 December 2022

Accepted 21 March 2023

Published Online First

21 April 2023

## ABSTRACT

It has become increasingly apparent that rapidly available information about the occurrence of suicides is needed, particularly to support suicide prevention efforts. Concerns about the potential impact of the COVID-19 pandemic on vulnerability to suicide highlighted the need for such early data internationally. Here, we set out the nature, current status and content of a real-time suicide monitoring system in Great Britain (England, Scotland and Wales), and explore its potential to contribute to timely and targeted suicide prevention initiatives. We also discuss the challenges to successful implementation.

## INTRODUCTION

Timely monitoring of suicides is becoming a key component of suicide prevention programmes in many countries.<sup>1–3</sup> Official suicide statistics are often subject to a considerable time-lag. This is due to substantial delays before coroners' inquests are completed (which can frequently be a year or more following a death) and also the time taken for registration of deaths and reporting of suicide statistics. In addition, coroners' data may underestimate suicide rates, depending on the burden of proof required to identify a suicide<sup>4 5</sup> and variations in the use of narrative verdicts, which describe rather than categorise the cause of death, and may lead to inconsistencies between areas.<sup>6</sup>

The need for timely data became particularly evident during the COVID-19 pandemic. There were concerns that anxieties about the virus, combined with the social and economic impact of containment measures, might contribute to rising suicide rates,<sup>7–9</sup> as had been observed in relation to previous health emergencies.<sup>10</sup> Some media reporting early in the pandemic suggested suicides were increasing among certain groups.<sup>11 12</sup> However, analysis of real-time data from at least 21 countries found no evidence for elevated suicide risk at whole population levels during the first 4 months of the pandemic<sup>13</sup> and from most of 33 countries in the first 9–15 months.<sup>14</sup> In many cases, suicides were below the expected levels. This illustrated the importance of real-time suicide monitoring systems that can provide accurate information as quickly as possible and thus address public concern. Elsewhere, real-time systems were used to investigate the impact of COVID-19 on suicide rates among certain demographic groups,<sup>15</sup> although more evidence is needed globally about the impact of the pandemic in low-income groups, regions and countries.<sup>16</sup>

Real-time monitoring systems can also enable public health agencies and policy-makers to identify new trends, such as locations or populations of concern.<sup>17 18</sup> For example, real-time monitoring in Japan during the COVID-19 pandemic identified that, after an initial decline in suicides, the numbers started to rise, particularly among young women,<sup>19</sup> enabling a swift and targeted policy response.<sup>1</sup> Real-time systems can also alert policy-makers and health practitioners to changes in methods of suicide, including the emergence of new methods.<sup>20</sup> They are also a means of identifying suicide clusters, or imitation following a high-profile death.<sup>21</sup> In Japan and Poland, analysis of real-time data revealed a rise in suicides immediately after the sensationalised reporting of a suicide death, which led to a strengthening of media reporting guidelines in both countries.<sup>1</sup> Another potential benefit of rapid data collection is the prompt evaluation, and subsequent adaption, of preventive initiatives. In addition, real-time suicide data can enable public agencies and third sector organisations to provide targeted and responsive bereavement and wider postvention support.<sup>22</sup>

Real-time monitoring can be effective at both local and national levels. For example, in County Durham, in the north of England, a real-time system was introduced in 2010, in response to an increase in suicides in the area in the previous year.<sup>23</sup> Here, early information on potential suicides was provided by coroners' offices to the primary healthcare trust, leading to a coordinated multiorganisational response that included awareness raising, training of front-line staff and targeted mental health and postvention support. While local systems allow for such bespoke responses, national systems also enable comparisons to be made between geographical areas to assess whether observed changes in suicide rates or characteristics are part of a wider trend or specific to a local area.<sup>24 25</sup> In many countries, fully national, real-time systems have not yet been developed. For their analysis of suicide deaths during the early months of the COVID-19 pandemic, Pirkis *et al*<sup>13</sup> were able to obtain whole-country data from just under half the countries that contributed to the study; the other 11 countries, including the UK, supplied data relating to a particular area only.

## SUICIDES IN ENGLAND, WALES AND SCOTLAND: A REAL-TIME MONITORING SYSTEM

The UK Government identified the need for real-time monitoring of suicide deaths in the Suicide Prevention Workplan.<sup>26</sup> One way of fulfilling this ambition is to use police records of potential



© Author(s) (or their employer(s)) 2023. Re-use permitted under CC BY-NC. Published by BMJ.

**To cite:** Marzano L, Norman H, Sohal B, *et al*. *BMJ Ment Health* 2023;**26**:1–5.

suicides, an approach that has been successfully implemented in several other countries.<sup>1</sup> Led by the National Police Chiefs' Council, and coordinated by British Transport Police (BTP), a new national real-time system for monitoring suicides across Great Britain (England, Wales and Scotland) has been developed and is now operational.

The police have a legal obligation to attend all sudden, unexpected deaths, including those occurring in prisons, hospitals and the armed forces. They subsequently complete a report which is submitted to the local coroner as information for the inquest. These data are already being used in some areas as the basis for real-time monitoring of suicides.<sup>27</sup> Data from 10 established local real-time monitoring systems in England were used to monitor the effects of the COVID-19 pandemic on suicide rates.<sup>28</sup> A real-time surveillance system for suicide has recently been established in Wales, through a partnership of Public Health Wales, all Welsh police forces and the NHS Wales Health Collaborative.<sup>29</sup> The new Suicide Prevention Strategy for Scotland, currently in draft, refers to the importance of close monitoring of real-time data compiled by the police and Public Health Scotland.<sup>30</sup> While these initiatives represent excellent progress, a consistent, country-wide approach to unify the methods adopted in local areas and the home nations would enable a more coherent and strategic approach to suicide prevention at a national level.

Since April 2021, a standardised method of reporting has been implemented across police forces in England, Scotland and Wales. Each force uses the standardised template to record all suspected suicides in their area which they then send to a central BTP team using a secure email. The data are compiled and analysed by the central police team to create a national monitoring system for suspected suicide deaths. The proportion of forces returning data has gradually increased, such that by December 2022 it had reached 98% coverage of the population of Great Britain (figure 1). Reports are compiled with a time-lag of one calendar month. This makes the system the most timely and comprehensive overview of suicides currently available in the UK.

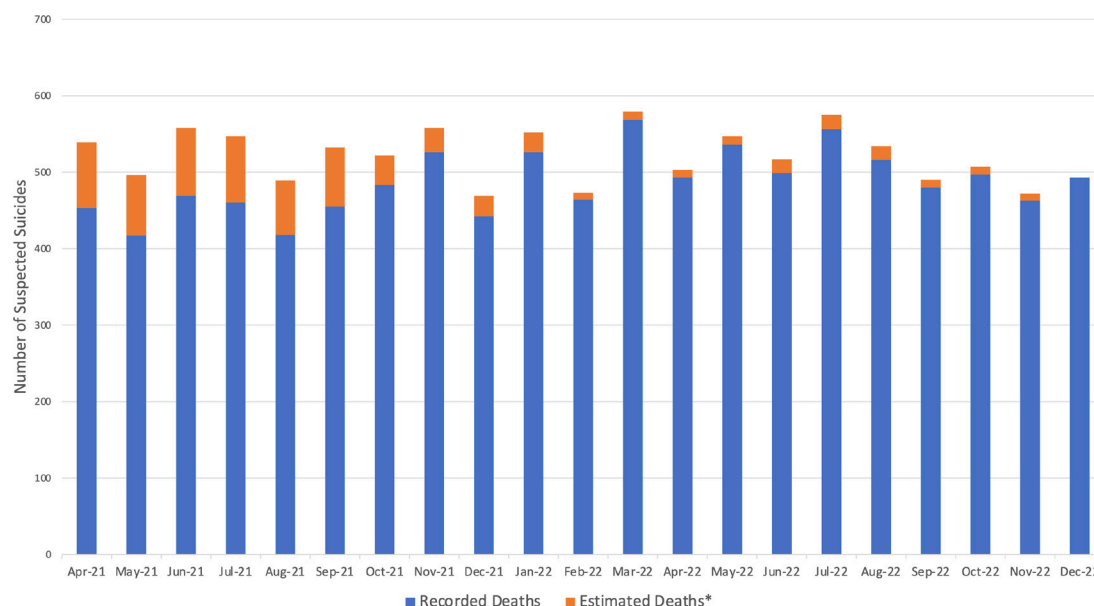
## CONTENT OF THE POLICE-LED SUICIDE SURVEILLANCE SYSTEM

Police submit data on all deaths judged to be suspected suicides. In determining whether a death should be recorded as a suspected suicide, they refer to a standard definition and detailed assessment guidance, based on the 'Ovenstone' criteria.<sup>31</sup> The data collected by individual forces include demographic information, such as age, gender and nationality, as well as life events, mental health problems and previous police contact. The police also record the details of the circumstances of the death, such as the time, date, location and method. The full list of categories is set out in table 1. The availability of information at the time of death will vary from case to case but there is the provision for the data to be revised at a later stage, if new details become available.

A recent analysis indicated that the completion rates for age and gender, and the date, location and method of death were at 98% or above (table 1). A higher proportion of data was missing across other variables. This is likely to improve as the system becomes more embedded in police processes, or if more resources become available to dedicate to data collection.

## INSIGHTS, OPPORTUNITIES AND CHALLENGES

One of the advantages of a standardised system is that it facilitates comparison between geographic areas. In addition, the police-led RTSS system records both the location of death as well as the home address of the deceased. The official statistics in the UK, in contrast, are based only on 'usual place of residence' and may therefore miss opportunities to identify high-risk locations. For example, analysis of the first full year of data from the new system revealed that the highest suicide rate per 100 000 population occurred in one specific local authority area in England which includes a known location of concern. Here, the rate was over double that of the area with the next highest rate, and further analysis indicated that this was due to the high number of people who had travelled from outside the area. Such



**Figure 1** Suspected suicides in Great Britain (England, Scotland and Wales) April 2021 to December 2022. \*One police force did not submit data until December 2022. For this force, estimated deaths are calculated in proportion to the area's population. In some months, some areas' returns are missing a small proportion of their data (eg, from one contributing force). In such cases, missing data are calculated on the basis of an average of the previous returns for that force's area, and revised when actual data become available.

**Table 1** Data fields and completeness (December 2022)

Categories of information	Completion rates (n=493)
<b>Mandatory fields</b>	
Date of death	100.0%
Age	99.4%
Gender	99.6%
Ethnicity (police identity code (IC))	81.3%
Nationality	66.7%
Marital status	68.6%
Employment status/occupation	61.4%
Full postcode of home address	95.9%
County of home address	96.5%
(Borough, if home address in London)	(96.9%)
Police force area	100.0%
Full postcode of incident location	86.9%
(If postcode unknown, geographical coordinates)	(26.6%)
County of incident location	98.8%
(Borough, if incident location in London)	(98.8%)
Suicide location type	98.6%
Suicide method	99.8%
(If overdose, type of poisoning/other lethal substance used)	(87.5%)
Time of death	65.9%
If died subsequently in hospital	72.7%
Death following police contact	72.1%
Known to police (suspect/victim/witness)	69.8%
Missing person/concern for welfare raised with police	76.0%
Police contact in last 6 months	63.9%
Previous self-harm or suicidal behaviour	59.1%
Historical risk factor(s)	68.4%
Message of intention	67.6%
<b>Non-mandatory fields</b>	
Country of cultural heritage	40.7%
Living circumstances	63.0%
Sexual orientation	39.0%
Other characteristics	1.2%
Alcohol and/or drugs involved at time of incident	34.3%
Known to mental health services in last 6 months	48.7%
Firearms or shotgun license holder	47.0%
Referral made to local bereavement services	51.1%

insights are vital in order to target suicide prevention resources effectively, and for timely postvention efforts to support affected communities.

Another advantage of the police-led real-time system is that suicides are recorded according to the date of the death. In contrast, official statistics in the UK are based on the registration of a death, which cannot occur until after the inquest has taken place. The Office for National Statistics (ONS) calculates that around half the registered deaths reported in 1 year actually took place in the previous year.<sup>31</sup> This means that it is not possible to identify whether specific events, such as the suicide of a high-profile person, or a change in national policy, had an effect on suicide rates. Any changes in suicide rates in the immediate aftermath of a time-specific event would, however, be observable in the police-led system, which is based on the date of death. For example, 2 of the 8 days with the highest recorded daily number of suspected suicides in the year from April 2021 occurred in the week following the withdrawal of a time-limited increase in the level of means-tested benefit payments in the UK. While

no direct inference can be made from such an observation, it provides a pointer to a possible risk factor which can be explored in more depth in subsequent research.

In terms of data quality, strengthened guidance given to individual police forces has helped improve consistency; for example, around the definition of suspected suicide. Quality assurance audits will be carried out to monitor the robustness of the data, and to increase reporting to reach the target of 100% population coverage.

While the system allows for the collection of data relating to the demographics and life circumstances of the individual, these fields inevitably contain a proportion of missing data due to the availability of such information at the time of death. Such fields therefore need to be analysed and interpreted with caution, to ward against the unintended consequences of drawing too robust a conclusion based on incomplete and unverified data (eg, regarding sexual orientation, cultural heritage or historical risk factors). Some real-time systems address this problem by linking to other data sources, such as medical or criminal records. However, such a process takes time, possibly delaying publication, and reducing the main benefit of a real-time system. In addition, for data protection reasons, individually identifying information is not currently recorded in the national police monitoring system. The data collected cannot therefore be subsequently traced back to specific individuals in order to supplement the information with data from other sources. This also prevents subsequent review and validation of individual cases after coronial inquest, which can improve data quality, completeness and sensitivity.<sup>3</sup> It may be that in the future the advantages of data linkage may outweigh data protection concerns. In the meantime, it will be necessary to be transparent in the reporting of fields which are based on fewer than 100% cases. It is important to emphasise, however, that the main fields of age and gender, plus the time, method and circumstances of death, have so far been at least 98% complete. The timely availability of this information alone, on a consistent national basis, represents a major step forward in real-time monitoring of suicides in Great Britain.

## ETHICAL CONSIDERATIONS

The association between the police and suicide is not without controversy, given the history of the criminalisation of suicide,<sup>32</sup> and more recent concern over police involvement in mental health interventions.<sup>33</sup> However, most of the data described here are already routinely collected by the police when they attend a sudden and unexpected death to investigate if it may be suspicious. It also already forms the basis of most established real-time systems used by local areas.<sup>28</sup> The standardised system will allow individual forces to engage with partners to respond to local trends, where they occur, as well as to compare their own data with other geographic areas.

Alternatively, while the police have led the initial work on this initiative, and continue to collect information at a local level, it would be possible for a different organisation, outside the police, to compile, analyse and publish the data. Indeed, it may be considered more appropriate for the analytical work to be conducted by one or more independent organisation, such as an academic institution (for research) or a public health agency (for surveillance and preventive action). Whoever is responsible for the system long term, the main priority must be to share timely and accurate data on a regular, need-to-know basis to inform rapid prevention initiatives at national and local levels. Automated notification processes for new trends and emerging clusters are also recommended best practice.<sup>3</sup> Currently, the



aggregated data are only accessible to authorised BTP staff, and used by them to contribute to national and local reviews relevant to suicide prevention.

The reporting of suicide statistics, even in an aggregated, anonymised way, needs to be done in a way that is respectful of the individuals that have died and their loved ones, and that does not sensationalise or promote suicide. The police are working with partners such as Samaritans, Zero Suicide Alliance<sup>34</sup> and academics in the field to ensure sensitive data reporting, in line with Samaritans media reporting guidelines.<sup>35</sup> Importantly, further discussions with people with lived experience and partners in public health and other sectors will need to take place to decide how and in what way the results should be disseminated.

## CONCLUSIONS

It is our belief that a police-led national, standardised, real-time monitoring system can make a valuable contribution to suicide prevention work in Great Britain. It builds on an existing infrastructure and systems that operate at local level, with mechanisms to ensure consistent and timely data collection, analysis and reporting, in line with current international best practices.<sup>3</sup> Benson *et al* recommended that effective real-time suicide surveillance systems should include the rapid and routine collection of suicide data, allow for ongoing review and revision, and develop automated methods of analysis.<sup>3</sup> The police-led RTSS system described here meets those criteria, although further improvements could be made, both in terms of data collection, review and dissemination, and in the use of automated analytical tools to identify trends more quickly.

Similar police-led systems in other countries enabled the authorities to respond quickly to specific social and health-care needs during the COVID-19 pandemic. Likewise, in Great Britain, a police-led, real-time system has the potential to become a rich resource for epidemiological research, as well as to inform prevention and postvention policies and practice. As national suicide prevention strategies are developed, real-time monitoring can make a key contribution to the goal of reducing deaths by suicide.

**Twitter** Lisa Marzano @lisa\_marzano

**Acknowledgements** The authors would like to thank Arlene Wilson and Pippa Smith (British Transport Police; BTP) for their contribution to the management of the real-time surveillance system and Eleanor Wilkinson (BTP) for data analysis and presentation. British Transport Police (BTP), on behalf of the National Police Chiefs' Council, designed the system that is the subject of this Personal View, and collected, compiled and presented the data that is described herein. BTP entered into a funding agreement with Middlesex University (LM and HN) to verify and analyse the data.

**Contributors** LM and RM had the original idea for this personal view as part of a funding agreement between British Transport Police (BTP) and Middlesex University to share, analyse and publish suicide surveillance data collected by the police. An original outline was prepared by HN and discussed with LM, RM and KH. HN wrote the manuscript. Data (in figures and text) were collected, compiled and analysed by BS. Original underlying data were accessed and verified by HN. All authors commented on drafts and agreed the final manuscript.

**Funding** This study was funded by British Transport Police (grant/award number: not applicable).

**Competing interests** Middlesex University (LM and HN) were funded by BTP (who also employ RM and BS) to analyse and publish data collected by the police. KH is National Institute for Health Research (NIHR) Senior Investigator (Emeritus). The NIHR had no role in designing the study; in the collection, analysis and interpretation of data; in the writing of the article; or in the decision to submit it for publication.

**Patient consent for publication** Not applicable.

**Ethics approval** Not applicable.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Open access** This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

## ORCID iD

Lisa Marzano <http://orcid.org/0000-0001-9735-3512>

## REFERENCES

- 1 Baran A, Gerstner R, Ueda M, *et al*. Implementing real-time data suicide surveillance systems. *Crisis* 2021;42:321–7.
- 2 Sutherland G, Milner A, Dwyer J, *et al*. Implementation and evaluation of the Victorian Suicide Register. *Aust N Z J Public Health* 2018;42:296–302.
- 3 Benson R, Rigby J, Brunsdon C, *et al*. Real-time suicide surveillance: comparison of international surveillance systems and recommended best practice. *Arch Suicide Res* 2022;1–27.
- 4 Hill C, Cook L. Narrative verdicts and their impact on mortality statistics in England and Wales. *Health Stat Q* 2011;49:81–100.
- 5 Bakst SS, Braun T, Zucker I, *et al*. The accuracy of suicide statistics: are true suicide deaths misclassified? *Soc Psychiatry Psychiatr Epidemiol* 2016;51:115–23.
- 6 Carroll R, Hawton K, Kapur N, *et al*. Impact of the growing use of narrative verdicts by coroners on geographic variations in suicide: analysis of coroners' inquest data. *Journal of Public Health* 2012;34:447–53.
- 7 Thakur V, Jain A. COVID 2019-suicides: A global psychological pandemic. *Brain Behav Immun* 2020;88:952–3.
- 8 Banerjee D, Kosagisharaj JR, Sathyanarayana Rao TS. "The dual pandemic" of suicide and COVID-19: a biopsychosocial narrative of risks and prevention. *Psychiatry Res* 2021;295:113577.
- 9 Gunnell D, Appleby L, Arensman E, *et al*. Suicide risk and prevention during the COVID-19 pandemic. *Lancet Psychiatry* 2020;7:468–71.
- 10 Zortea TC, Brenna CTA, Joyce M, *et al*. The impact of infectious disease-related public health emergencies on suicide, suicidal behavior, and suicidal thoughts. *Crisis* 2021;42:474–87.
- 11 Syed NK, Griffiths MD. Nationwide suicides due to alcohol withdrawal symptoms during COVID-19 pandemic: a review of cases from media reports. *J Psychiatr Res* 2020;130:289–91.
- 12 Marzano L, Hawley M, Fraser L, *et al*. Media coverage and speculation about the impact of the COVID-19 pandemic on suicide: a content analysis of UK news. *BMJ Open* 2023;13:e065456.
- 13 Pirkis J, John A, Shin S, *et al*. Suicide trends in the early months of the COVID-19 pandemic: an interrupted time-series analysis of preliminary data from 21 countries. *The Lancet Psychiatry* 2021;8:579–88.
- 14 Pirkis J, Gunnell D, Shin S, *et al*. Suicide numbers during the first 9-15 months of the COVID-19 pandemic compared with pre-existing trends: an interrupted time series analysis in 33 countries. *EClinicalMedicine* 2022;51:101573.
- 15 Clapperton A, Spittal MJ, Dwyer J, *et al*. Patterns of suicide in the context of COVID-19: evidence from three Australian states. *Front Psychiatry* 2021;12.
- 16 Webb RT, John A, Knipe D, *et al*. Has the COVID-19 pandemic influenced suicide rates differentially according to socioeconomic indices and ethnicity? more evidence is needed globally. *Epidemiol Psychiatr Sci* 2022;31:e72.
- 17 Benson R, Rigby J, Brunsdon C, *et al*. Quantitative methods to detect suicide and self-harm clusters: a systematic review. *IJERPH* 2022;19:5313.
- 18 Benson R, Brunsdon C, Rigby J, *et al*. n.d. The development and validation of a dashboard prototype for real-time suicide mortality data. *Front Digit Health*;4.
- 19 Tanaka T, Okamoto S. Increase in suicide following an initial decline during the COVID-19 pandemic in Japan. *Nat Hum Behav* 2021;5:229–38.
- 20 Thomas K, Chang S-S, Gunnell D. Suicide epidemics: the impact of newly emerging methods on overall suicide rates-a time trends study. *BMC Public Health* 2011;11:1.
- 21 Lutter M, Roex KLA, Tisch D. Anomie or imitation? the Werther effect of celebrity suicides on suicide rates in 34 OECD countries, 1960-2014. *Soc Sci Med* 2020;246:112755.
- 22 Doyle M, Ainsworth P, Boul S, *et al*. Evaluation of a system for real-time surveillance of suicide in England. *Crisis* 19, 2022.
- 23 Burke W, Colmer D, Johnson N, *et al*. An organisational response to an increase in suicides: a case study. *J Public Ment Health* 2012;11:98–105.
- 24 Arnaoutovska U, McPhedran S, Kelly B, *et al*. Geographic variation in suicide rates in Australian farmers: why is the problem more frequent in Queensland than in New South Wales? *Death Studies* 2016;40:367–72.
- 25 Trgovac AB, Kedron PJ, Bagchi-Sen S. Geographic variation in male suicide rates in the United States. *Applied Geography* 2015;62:201–9.
- 26 Department of Health and Social Care, U K. Cross-Government Suicide Prevention Workplan. 2019. Available: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/772210/national-suicide-prevention-strategy-workplan.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/772210/national-suicide-prevention-strategy-workplan.pdf)

- 27 Royal College of Psychiatrists. Using real-time surveillance. Available: <https://www.rcpsych.ac.uk/improving-care/nccmh/quality-improvement-programmes/national-suicide-prevention-programme/using-real-time-surveillance> [Accessed 27 Sep 2022].
- 28 Appleby L, Richards N, Ibrahim S, *et al*. Suicide in England in the COVID-19 pandemic: early observational data from real time surveillance. *Lancet Reg Health Eur* 2021;4:100110.
- 29 Public Health Wales. Real time suicide surveillance system. 2022. Available: <https://phw.nhs.wales/services-and-teams/real-time-suicide-surveillance-system/> [Accessed 27 Sep 2022].
- 30 Scottish Government. A new suicide prevention strategy for scotland. 2022. Available: <https://consult.gov.scot/mental-health-unit/suicide-prevention-strategy-for-scotland/> [Accessed 27 Sep 2022].
- 31 Ovenstone IMK. A psychiatric approach to the diagnosis of suicide and its effect upon the Edinburgh statistics. *Br J Psychiatry* 1973;123:15–21.
- 32 Neeleman J. Suicide as a crime in the UK: legal history, international comparisons and present implications. *Acta Psychiatr Scand* 1996;94:252–7.
- 33 House A. Serenity integrated mentoring and the high intensity network: a scheme that raises serious questions for practice and governance in UK psychiatry. *BJPsych Bull* 2023;47:1–4.
- 34 Zero suicide alliance. 2022. Available: <https://www.zerosuicidealliance.com/> [Accessed 12 Oct 2022].
- 35 Samaritans. Media guidelines for reporting suicide. 2020. Available: [https://media.samaritans.org/documents/Media\\_Guidelines\\_FINAL.pdf](https://media.samaritans.org/documents/Media_Guidelines_FINAL.pdf) [Accessed 27 Sep 2022].