Harnessing case reports from coroners to assess the harms of interventions deployed during the COVID-19 pandemic

Dr Georgia Richards DPhil (Oxon) BSc (Hons I) King's Prize Fellow, King's College London Honorary Senior Associate Tutor, University of Oxford Founder, Preventable Deaths Tracker



Case reports & surveillance systems

- Case reports are the backbone of surveillance systems used to capture harms, e.g. WHO's VigiBase, MHRA's Yellow Card Scheme.
- Traditionally used for epidemiological studies and regulators for postauthorisation safety studies (i.e. PASS, PMRs & PMCs) to monitor the safety of products in the 'real-world'.
- Difficult to capture harms from public health and social measures, policies and interventions, particularly in the context of a global pandemic.



Mortality statistics during the pandemic

- Often delayed and time lag, (e.g. date of registration vs death)
- Lack of transparent datasharing infrastructure
- Variations...
 - Diagnostic tests
 - Definitions (n=14 Heneghan et al. 2022), e.g. at time of death, within 28 days)
 - Coding of deaths
 - Reporting of deaths
 - Certifying deaths



Deaths registered in England and Wales (ONS, 2023) n=581,298

Deaths	registered in England and Wales (ON n=581,298	S, 2023)
	Deaths referred to coroners (MOJ)	
	n=195,000	
\backslash	34% of all deaths	



Deaths registered in England and Wales (ONS, 2023) n=581,298						
Deaths referred to coroners (MOJ) n=195,000 34% of all deaths						
Inquests open in 2023 n=36,900 6 % of all deaths						





Coroner sends PFD to organisations **to take action**















Primary care

OPEN ACCESS

Preventable deaths from SARS-CoV-2 in England and Wales: a systematic case series of coroners' reports during the COVID-19 pandemic

Bethan Swift •,^{1,2} Carl Heneghan •,^{3,4} Jeffrey Aronson •,³ David Howard,⁵ Georgia C Richards • ^{3,4}

10.1136/bmjebm-2021-111834 Abstract

► Additional supplemental material is published online only. To view, please visit the journal online (http:// dx.doi.org/10.1136/ bmjebm-2021-111834).

¹Nuffield Department of Women's and Reproductive Health, University of Oxford, Oxford, UK ²Wellcome Trust Centre for Human Genetics, Oxford, UK ³Centre for Evidence-**Based Medicine**, Nuffield Department of Primary Care Health Sciences, University of Oxford, Oxford, UK ⁴Global Centre on Healthcare and Urbanisation, University of Oxford Oxford UK ⁵Department for Continuing Education, University of Oxford, Oxford, UK

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To cite: Swift B, Heneghan C, Aronson J, et al. BMJ Evidence-Based Medicine Epub ahead of print: [please include Day Month Year]. doi:10.1136/ bmjebm-2021-111834 Objectives To examine coroners' Prevention of Future Deaths (PFDs) reports to identify deaths involving SARS-CoV-2 that coroners deemed preventable. Design Consecutive case series. Setting England and Wales.

Original research

Participants Patients reported in 510 PFDs dated between 01 January 2020 and 28 June 2021, collected from the UK's Courts and Tribunals Judiciary website using web scraping to create an openly available database: https:// preventabledeathstrackernet/. Main outcome measures Concerns reported by coroners.

Results SARS-CoV-2 was involved in 23 deaths reported by coroners in PFDs. Twelve deaths were indirectly related to the COVID-19 pandemic, defined as those that were not medically caused by SARS-CoV-2, but were associated with mitigation measures. In 11 cases, the coroner explicitly reported that COVID-19 had directly caused death. There was geographical variation in the reporting of PFDs; most (39%) were written by coroners in the North West of England. The coroners raised 56 concerns, problems in communication being the most common (30%), followed by failure to follow protocols (23%). Organisations in the National Health Service were sent the most PFDs (51%), followed by the government (26%), but responses to PFDs by these organisations were poor Conclusions PFDs contain a rich source of information on preventable deaths that has previously been difficult to examine

(https://preventabledeathstracker.net/) streamlines this process and has identified many concerns raised by coroners that should be addressed during the government's inquiry into the handling of the COVID-19 pandemic, so that mistakes made are less likely to be

Study protocol preregistration https://osf.io/

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systematically. Our openly available tool

rs' Prevention of identify deaths roners deemed Subject? ► The UK Government has stated that there will be a public inquiry into the

handling of the COVID-19 pandemic, to learn lessons for future pandemics. Coroners in England and Wales have a duty to report and communicate information about the deaths they investigate when the coroner believes that action should be taken to prevent future deaths. These reports, called Prevention of

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What are the new findings? We created the Preventable Deaths Database (https:// preventabledeathstracker.net/) using web scraping to systematically assess PFDs published on the Courts and Tribunals Judiciary website. Between 01 January 2020 and 28 June 2021.1 in 20 (4.5%, m-23) PFDs that

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which require action to prevent future deaths.

Introduction

BMJ Evidence-Based Medicine Month 2021 | volume 0 | number 0 |

Over 5 million deaths worldwide have been attributed to SARS-CoV-2¹; some deaths may have been preventable.

In England and Wales, causes of deaths are investigated by coroners during an inquest, unless the death is natural or referred to the criminal court. Under UK regulations, coroners have a duty to report and communicate information about the deaths that they investigate when they believe

Methods

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- Consecutive case series of coroners' reports
- Using the Preventable Deaths Tracker database, i.e. all reports published in England and Wales between 1 Jan 2020 and 28 June 2021 (n=510) were scraped from Judiciary website and screened for inclusion
- Deaths were included if SARS-Co-V-2 was a medical cause of death (i.e. **directly-related**) and when the coroner referred to measures or interventions during the pandemic that caused or contributed to death (i.e. **indirectly-related**)



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Findings

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- 23 deaths (4.5%) had reports written by coroners in England and Wales between Jan 2020 and 28 June 2021.
- Half (n=11) had SARS-Co-V2 as a medical cause of death.
- In the other half (n=12), the coroner reported that mitigation measures (e.g. NPIs) during the pandemic contributed to deaths.
- Overall, either a lack of mitigation measures or poor implementation & risk assessment of such 'measures' contributed to deaths.





About

Research

Reg 28 Database

Reg 29 Database

Services

A national vigilance platform to learn lessons following inquests

The **Preventable Deaths Tracker** is a data-driven vigilance and learning tool that monitors premature deaths reported by coroners. It is led by <u>Dr Georgia Richards</u> at King's College London.

The **Preventable Deaths Tracker** is the first centralised database of all coroners' Prevention of Future Deaths reports published in England and Wales, updated weekly. It makes information from coroners' reports usable so that real-time analytics and research can be conducted.

The mission of the **Preventable Deaths Tracker** is to harness information from coroners to minimise premature deaths by enabling learning and improving public safety.



Preventable Deaths Tracker About Database Research Impact Contact Support My Account Database The Preventable Deaths Tracker is the first and only centralised database of all coroners' Prevention of Future Deaths reports that provides real-time statistics. Year to date This month 190 0 **Interactive Dashboard** The Preventable Deaths Tracker database is now interactive. Filter by date of report, name of addressees who were sent reports, up to 12 ocroner areas, or individual coroner names to get the statistics you need. You can select multiple filters at once, download reports, and save outputs by using the new My Account feature. A maximum of one year of data can be downloaded if filtering by date. Download a Sample Report to review what you will receive ld/mm/yyyy dd/mm/vvvv

✓ Coroners

UK Gov - Average appraisativatus estimates per death (C in 2023 prices



✓ Areas

Addressees

https://preventabledeathstracker.net/ 2142

From manual screening to machine readability

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Aaron Deeley	Essex	Hospital (Clinical Procedures and medical management), Mental Health, Suicide	Administration, Adults (25 to 64 years), Communication, Discharge, Documentation, Facilities, Fall/jump to death, Guidance and protocols, Hospital building repairs, Lack of clear guidance or protocol, Lack of guidance/protocols, Learning and training, Letter sent to wrong GP address, Mental Health Act, Mental, behavioural or neurodevelopmental disorders, Multidisciplinary teams & collaboration, Neglect, Observations, Pandemics, Policy, Poor record keeping, Protocol concerns, Provision of care, Records, Referral issues, Restrictions, Safeyarding concerns, Safety, Shared care, Staffing, Suicide, Suicide attempts, Systems and processes, Training, Two or more NHS Trust involved in care, Window repairs/replacement, Workplace health and safety	 Aaron-Deeley- Prevention-of-futui deaths-report-202 0331_Published 2024-0331-Respor from-Mid-and-Sou Essex-NHS 2024-0331-Respor from-NHS-England 2024-0331-Respor from-Essex- Partnership-NHS 	 4- Essex Partnership University NHS Foundation Trust NHS England 	Report date: 19/06/2024 Judiciary date: 26/06/2024 Deceased date: 14/01/2022 Coroners: Ms Sonia Marie Hayes complete	Review: Complete Sign Off: Complete Deceased: 1 Conclusion: Narrative Sex: Male
Adrian James	London Inner West	Mental Health, Suicide	Adults (25 to 64 years), Antisocial personality	Adrian-James- Prevention-of-futur	Central and North West London NHS	Report date: 07/03/2024	Review: Complete

From manual screening to machine readability

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 Title ↓ Aaron Deeley 	Coroner Areas	Report Categories Hospital (Clinical Procedures and medical management), Mental Health, Suicide	Research Categories Administration, Adults (25 to 64 years), Communication, Discharge, Documentation, Facilities, Fall/jump to death, Guidance and protocols, Hospital building repairs, Lack of clear guidance or protocol, Lack of understanding of guidance/protocols, Learning and training, Letter sent to wrong GP address, Mental Health Act, Mental, behavioural or neurodevelopmental disorders, Multidisciplinary teams & collaboration, Neglect, Observations, Pandemics, Policy, Poor record keeping, Protocol concerns, Safety, Shared care, Staffing, Suicide, Suicide attempts, Systems and processes, Training, Two or more NHS Trust involved in care, Window repairs/replacement, Workplace health and	Files Aaron-Deeley- Prevention-of-future- deaths-report-2024- 0331_Published 2024-0331-Response- from-NId-and-South- Essex-NHS 2024-0331-Response- from-NHS-England 2024-0331-Response- from-Essex- Partnership-NHS	Addressees Mid and South Essex NHS Foundation Trust Essex Partnership University NHS Foundation Trust NHS England	Info Report date: 19/06/2024 Judiciary date: 26/06/2024 Deceased date: 14/01/2022 Coroners: Ms Sonia Marie Hayes Complete	Review: Complete Sign Off: Complete Deceased: 1 Conclusion: Narrative Sex: Male
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Terms	Hits	
Covid	71	
Corona	63	
Pandemic	32	
Lockdown	4	
Sars	1	



The Pandemic EVIDENCE Collaboration



Title \$
Aaron Deeley

SAVE the DATE

24 – 26 JUNE 2026

EBMLive - Creating High Quality Evidence for Evidence-Informed Policy

Rhodes House, Oxford, UK

Adrian James

A global Preventable Deaths Tracker







CORONERS COURT

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Forensic Medicine & Coroners Court Complex

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SYDNEY NSW

Failure to act on coroners' advice blamed for thousands of deaths

■ NEW

One woman who tracks preventable deaths says the failure to take action when inquests identify threats to life is 'mindblowing'



Dr Georgia Richards is founder of the Preventable Deaths Tracker at King's College London LUCY YOUNG FOR THE TIMES

> Sean O'Neill | Lottie Hayton Tuesday January 14 2025, 7.55pm, The Times



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Apps

Top stories

 Ceasefire negotiations in Gaza <u>are "right</u> on the brink", according to Antony Blinken, the US secretary of state, as <u>mediators</u> <u>make a final push</u>

2. Tulip Siddiq has <u>been forced to resign</u> after an investigation found <u>her links to her</u> <u>aunt's political party in Bangladesh</u> posed reputational risks

3. Tens of thousands of deaths could be prevented every year if public bodies took action over <u>concerns highlighted at</u> <u>inquests</u>

4. Ukraine has launched its <u>biggest aerial</u> <u>attack inside Russia</u> in a barrage that Moscow said included more than a dozen western cruise missiles

Feed

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Preventable Deaths Tracker



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f you lose a loved one following a failure in care, you might assume that a robust system is ready to investigate and act (Georgia Richards writes).

Thousands of families experience this "system" every year. Nearly 37,000 inquests were opened in 2023 to investigate who, how, when and where the deaths occurred. Inquests vary widely — some last weeks and have juries while others are concluded in writing without a court hearing — but all involve immense resources and are hugely distressing for those who have to relive the trauma of their loss or provide evidence as witnesses. So what happens afterwards?

Coroners have a statutory duty to write to organisations, including hospitals or the government, if they believe that action should be taken to prevent future deaths. These prevention of future deaths (PFD) reports have been published online since 2013, but no one knew how many reports were being written, who received them, whether responses were sent and whether action was taken following the reports.

Now, after years of research dedicating every spare moment and my personal funds to creating the Preventable Deaths Tracker — it's possible to understand what's going on. In 2023 only 1.5 per cent of inquests led to a PFD — that's just 547 reports.

The flow of key information relies on the email etiquette of thousands of recipients. First, the coroner must email the report to the listed addressee — and there are likely to be multiple addresses. Next, the addressees must receive the report, formulate a response and reply within 56 days. If the coroner's office receives a reply, they forward it to the chief coroner, who is responsible for redacting and publishing the reports. If I do my maths correctly, that's a minimum of three emails for a single report with one addressee. Since

5,443 reports had been published as of December 15, last year, that's at least 16,329 unnecessary emails. It gets worse, however. Reports are then manually published online at judiciary.uk, leading to a wealth of errors and inconsistencies.

News

In Australia and New Zealand, information from every inquest is collated in the national coronial information system. This has been functioning for 25 years and is actively used to save lives.

The system, which has ten staff, was set up in response to recommendations made following the Royal Commission into Aboriginal Deaths in Custody. Governance, licensing and funding had to be agreed and approved by the leaders of each state and territory — a challenge that the English and Welsh system does not need to overcome.

The system's success is about more than mere data. It is hosted by the state of Victoria's department of justice and community safety, while the Victorian Institute of Forensic Medicine is tied to Monash University; academic research provides evidence to improve the justice system and save lives. In England and Wales, the same deaths continue to occur. The

inaction and inability to learn lessons from deaths is harming the living. A system without a memory that relies on the goodwill of campaigners for action to be taken should be a national scandal.

To truly learn lessons from preventable deaths, we cannot continue inefficient and outdated practices. To start the transformation, a national database of inquests — and an independent, interdisciplinary research unit that works alongside the coroner service to inform policy and prevention — needs sustainable funding. Until then, the Preventable Deaths Tracker will keep tracking.

Dr Georgia Richards is an epidemiologist and health research scientist who founded and leads the Preventable Deaths Tracker

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NEWS

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PDT.scot coming summer 2025!



Preventable Deaths Tracker

Summary and take homes

- Coroners' reports can provide insights on the harms of NPIs and policies, which can be used to create surveillance systems.
- The Preventable Deaths Tracker provides a reproducible method that automatically collects reports, standardises narrative information and provides real-time analytics that is being used by over **200,000** people, including coroners, lawyers, healthcare professionals, bereaved, the media, researchers and policy makers.
- Tools for the public communication of evidence, including dashboards and newsletters enable impact, beyond academic publications.
- Funding and the responsibility of such data infrastructure and surveillance tools remains a major challenge as often not considered traditional academic research nor prioritised by governments.

Primary care

6 **OPEN ACCESS**

Preventable deaths from SARS-CoV-2 in England and Wales: a systematic case series of coroners' reports during the COVID-19 pandemic

Bethan Swift ⁰, ^{1,2} Carl Heneghan ⁰, ^{3,4} Jeffrey Aronson ⁰, ³ David Howard,⁵ Georgia C Richards © 3,4

Summary box

future deaths.

subject?

What is already known about this

The UK Government has stated that

there will be a public inquiry into the

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Tribunals Judiciary website.

SARS-CoV-2.

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A lack of mitigation measures

1. Poor infection control

- 36% contracted SARS-Co-V2 as inpatients for other reasons
- Care home residents
- 2. Severity and diagnosis missed
 - SARS-CoV-2 symptoms undiagnosed during telephone appointments



Primary care

OPEN ACCESS

Preventable deaths from SARS-CoV-2 in England and Wales: a systematic case series of coroners' reports during the COVID-19 pandemic

Bethan Swift •,^{1,2} Carl Heneghan •,^{3,4} Jeffrey Aronson •,³ David Howard,⁵ Georgia C Richards • ^{3,4}

10.1136/bmjebm-2021-111834 Abstract

► Additional supplemental material is published online only. To view, please visit the journal online (http:// dx.doi.org/10.1136/ bmjebm-2021-111834).

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subject? The UK Government has stated that there will be a public inquiry into the handling of the COVID-19 pandemics. O and 28 June Courts and a duty to report and communicate

information about the deaths they investigate when the coroner believes that action should be taken to prevent future deaths.
 These reports, called Prevention of Future Deaths (PFDS) reports, had not

Summary box

What is already known about this

 9 yet been systematically analysed to identify deaths that occurred during the COVID-19 pandemic.
 What are the new findings?
 We created the Preventable Deaths Database (https://

preventabledeathstracker.net/) using web scraping to systematically assess PFDs published on the Courts and Tribunals Judiciary website. Between 01 January 2020 and 28 June

the care of patients in hospitals, care homes and people in the community during the COVID-19 pandemic, which require action to prevent future deaths.

Introduction

Over 5 million deaths worldwide have been attributed to SARS-CoV-2¹; some deaths may have been preventable.

In England and Wales, causes of deaths are investigated by coroners during an inquest, unless the death is natural or referred to the criminal court. Under UK regulations, coroners have a duty to report and communicate information about the deaths that they investigate when they believe

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Limited risk assessment of mitigation measures

- 1. Poor mental health provisions \rightarrow suicides
- 2. Inappropriate prescription of medications, including 2-week methadone supplies
- 3. Cancellation of appointments due to lockdown with no follow-up \rightarrow medical device complications
 - urosepsis from a catheter
 - perforation of the small bowel from a salivary bypass tube
- Misdiagnosis of SARS-Co-V2 → undiagnosed medical conditions
- Fear of Covid-19 → refusal of medical treatment



Concerns raised by coroners



Figure 3 Concerns raised by coroners in Prevention of Future Deaths reports involving COVID-19 in England and Wales between 1 January 2020 and 28 June 2021. Created by the authors.



 Table 2
 Recipients of Prevention of Future Deaths (PFDs) reports involving COVID-19 in England and Wales between 1 January 2020 and 28 June 2021 and their response rates (created by the authors)

Concerns were sent to various organisations to take action, but most (49%) had not responded (i.e. broke the law)

Addressee	Number of PFDs sent	Number of responses*	Response rate (%)
NHS organisations	22	10	45
Trusts	5	2	40
NHS England	4	2	50
NHS Hospitals	4	3	75
CCGs	3	0	0
Health and Social Care Partnerships	2	1	50
NHS Pathwayst	1	1	100
Ambulance services	1	1	100
GPs	2	0	0
Government	11	7	64
Public Health England	3	3	100
Department of Health and Social Care	2	1	50
Local authorities	3	2	67
COVID-19 Pandemic Response Servicet	1	1	100
Secretary of State of Health	1	0	0
Ministry of Defence	1	0	0
Professional bodies	4	2	50
CQC	2	2	100
General Pharmaceutical Council	1	0	0
MHRA	1	0	0
Other	6	3	50
Care homes/providers	2	2	100
Water board	1	0	0
National Park	1	0	0
Legal	1	0	0
Pharmacy	1	1	100

*Recipients of PFDs have 56 days from the date of the report to respond to the coroner under Regulation 29 of the Coroners (Investigations) Regulations 2013.

tNHS Digital responded on behalf of NHS Pathways and the COVID-19 Pandemic Response Service.

CCG, Clinical Commissioning Group; CQC, Care Quality Commission; GPs, general practitioners; MHRA, Medicines and Healthcare products Regulatory Agency; NHS, National Health Service.



A systematic narrative review of coroners' Prevention of Future Deaths reports (PFDs): A tool for patient safety in hospitals Journal of Patient Safety and Risk Management 1–10 © The Author(s) 2023 © ① Artide reuse guidelines sagepub.com/journals-permissions DOI: 10.1177/25160435231198685 journals.sagepub.com/home/cri Sage

Limitations (Feb 2023)

Benjamin T. Bremner¹, Carl Heneghan², Jeffrey K. Aronson² and Georgia C. Richards²

Abstract

Patient harm due to unsafe healthcare is widespread, potentially devastating, and often preventable. Hoping to eliminate avoidable harms, the World Health Organization (WHO) published the Global Patient Safety Action Plan in July 2021. The UK's National Health Service relies on several measures, including 'never events', 'serious incidents', 'patient safety events' and coroners' Prevention of Future Deaths reports (PFDs) to monitor healthcare quality and safety. We conducted a systematic narrative review of PubMed and medRxiv on 19 February 2023 to explore the strengths and limitations of coroners' PFDs and whether they could be a safety tool to help meet the WHO's Global Patient Safety Action Plan. We identified 17 studies that investigated a range of PFDs, including preventable deaths involving medicines and an assessment during the COVID-19 pandemic. We found that PFDs offered important information that could support hospitals to improve patient safety and prevent deaths. However, inconsistent reporting, low response rates to PFDs, and difficulty in accessing analysing and monitoring PFDs limited their use and adoption as a patient safety tool for hospitals. To fulfil the potential of PFDs, a national system is required that develops guidelines, sanctions failed responses and embeds technology to encourage the prevention of future deaths.

Keywords

Deaths in hospital, Incident reporting, Medicolegal issues, Safe practice, Organisational learning

Introduction

Patient harm due to unsafe care is a growing global public health challenge that demands an urgent international response. In July 2021, the World Health Organization (WHO) published the Global Patient Safety Action Plan, with the intention of eliminating avoidable harms in healthcare.¹ In the UK, the National Health Service (NHS) has several initiatives and measures in place to monitor and improve patient safety, including 'never events', 'serious incidents', coroners' Prevention of Future Deaths reports (PFDs), and patient safety events (i.e. 'harms') reported by patients, the public, and staff.² However, it has been estimated that over 10,000 adult deaths in English hospitals are preventable each year.³

Death is the most severe and objective marker of harm, making it the most used primary outcome in research and healthcare settings worldwide. However, not all deaths are inevitable. Treatment and prevention are two

mechanisms by which avoidable deaths can be averted. According to the Office for National Statistics (ONS), *preventable mortality* describes a death that can be avoided 'before onset of disease or injury... through effective public health and primary interventions',⁴ and *treatable mortality* is death that can be avoided 'after onset of a

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- 17 case series identified (76% ours)
- Inconsistent reporting & missing information
- Variation in coronial practices
- Low response rates by organisations who are sent reports
- Unclear whether organisaitons take action or use reports
- Inability to validate information
- Manual system and approaches to sharing, collecting and analysing reports

Primary care

OPEN ACCESS

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 Coroners in England and Wales have a duty to report and communicate information about the deaths they investigate when the coroner believes that action should be taken to prevent future deaths.

These reports, called Prevention of Future Deaths (PFDs) reports, had not yet been systematically analysed to identify deaths that occurred during the COVID-19 pandemic.

What are the new findings? We created the Preventable Deaths Database (https:// preventabledeathstracker.net/) using

web scraping to systematically assess PFDs published on the Courts and Tribunals Judiciary website. Between 01 January 2020 and 28 June

2021, 1 in 20 (4.5%, n=23) PFDs that were published by coroners involved SARS-CoV-2. ► Coroners raised many concerns about

Coroners raised many concerns about the care of patients in hospitals, care homes and people in the community during the COVID-19 pandemic, which require action to prevent future deaths.

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Swift et al. 2020 to June 2021

- 510 reports manually screened
- 23 deaths reported

Updated May 2025 for 2020 to now

 5,670 reports searched for key words (2585 reports since COVID)

Direct: Covid-19 diagnosis

- From Covid
- With Covid
 - Sepsis and heart failure following surgical complications and hospital acquired SARS-Co-V2 on the background of chronic lymphocytic leukemia
 - Suicide 2 days after contracting SARS-Co-V2 when face-to-face mental health assessment appointment was cancelled
 - Overdose of prescribed medicine with SARS-Co-V2

Indirect covid

- Restrictions
 - Suicide where COVID-19 restrictions impacted staffing and working environment
 - Suicide in university student with mixed anxiety and depression on a background of chronic social anxiety since the Covid-19 pandemic.
 - Self-isolation which prevented repeat medication collection resulting in Sudden Unexpected Death in Epilepsy contributed by the lack of medication due to medication shortages and access issues in university student.
- Telehealth
 - Suicide where care was provided over the phone and not followed up after call interrupted
- Provisions for volunteers during the pandemic
 - Tuberculosis contracted while volunteering as a nurse at an NHS hospital to assist the Covid-19 pandemic where contact tracing failed to identify the deceased as a close contact of the infected patient.
- Vaccines
 - Post-vaccination autoimmune encephalitis following booster covid-19 vaccine that resulted in physical and mental health effects and eventual fall into water to end their life.
 - Covid-19 vaccine-induced immune thrombotic thrombocytopenia following two doses of Vaxzevria (Oxford-AstraZeneca) in under 30-year-old before guidance was published due to data input error in GP record that deemed the deceased at an at-risk group.
 - Fatal deep vein thrombosis and pulmonary embolism following lack of anticoagulation and immobility due to acute disseminated encephalomyelitis following covid-19 vaccination.