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

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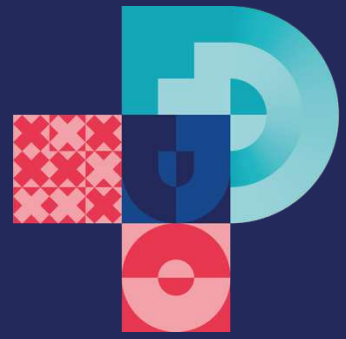
King's Prize Fellow, King's College London
Honorary Senior Associate Tutor, University of Oxford
Founder, Preventable Deaths Tracker



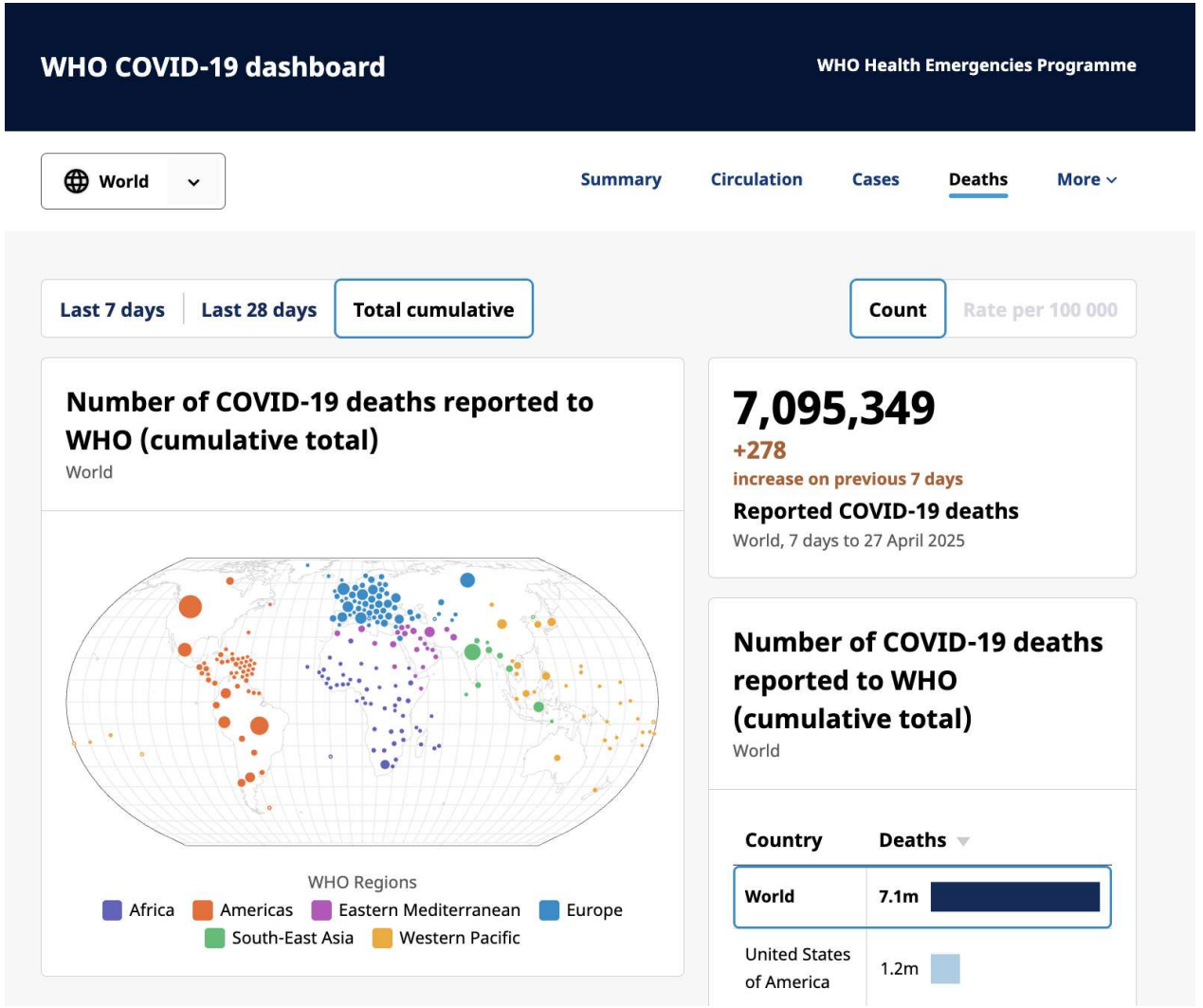
Preventable Deaths Tracker

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 post-authorisation 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 data-sharing 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)
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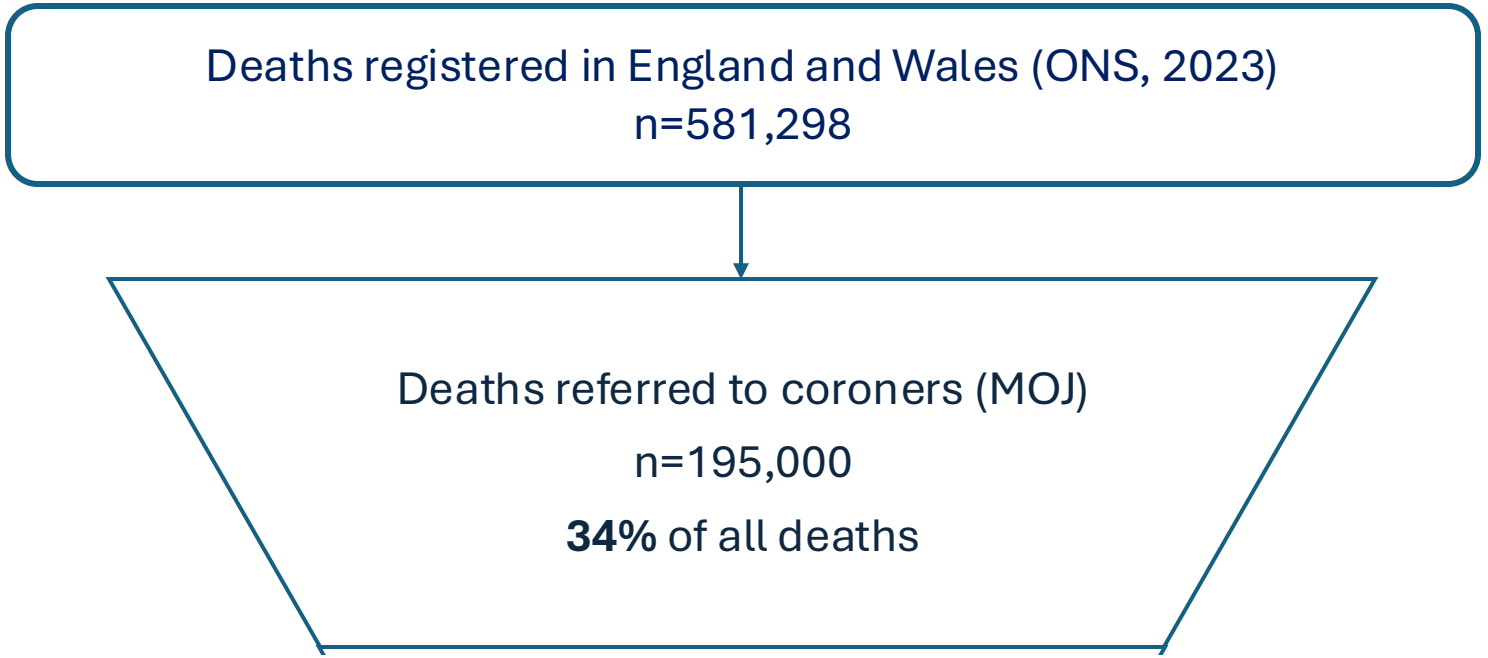
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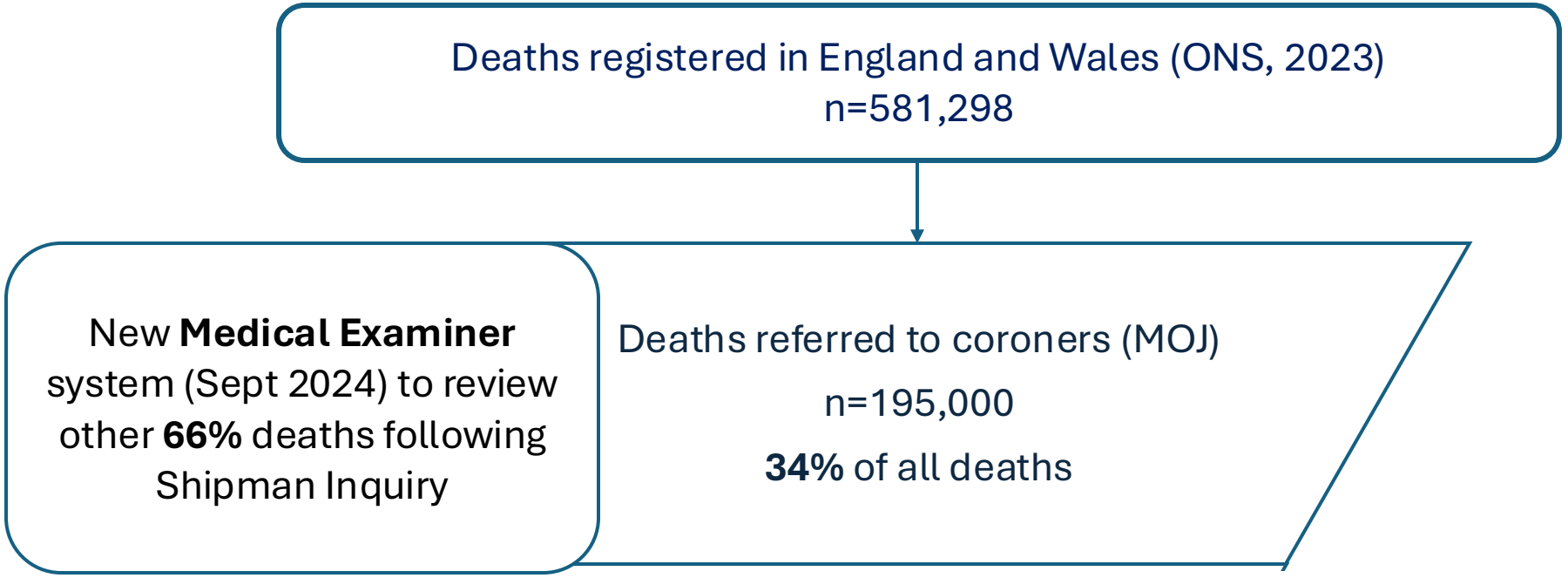
34% of all deaths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New **Medical Examiner** system (Sept 2024) to review other **66%** deaths following Shipman Inquiry
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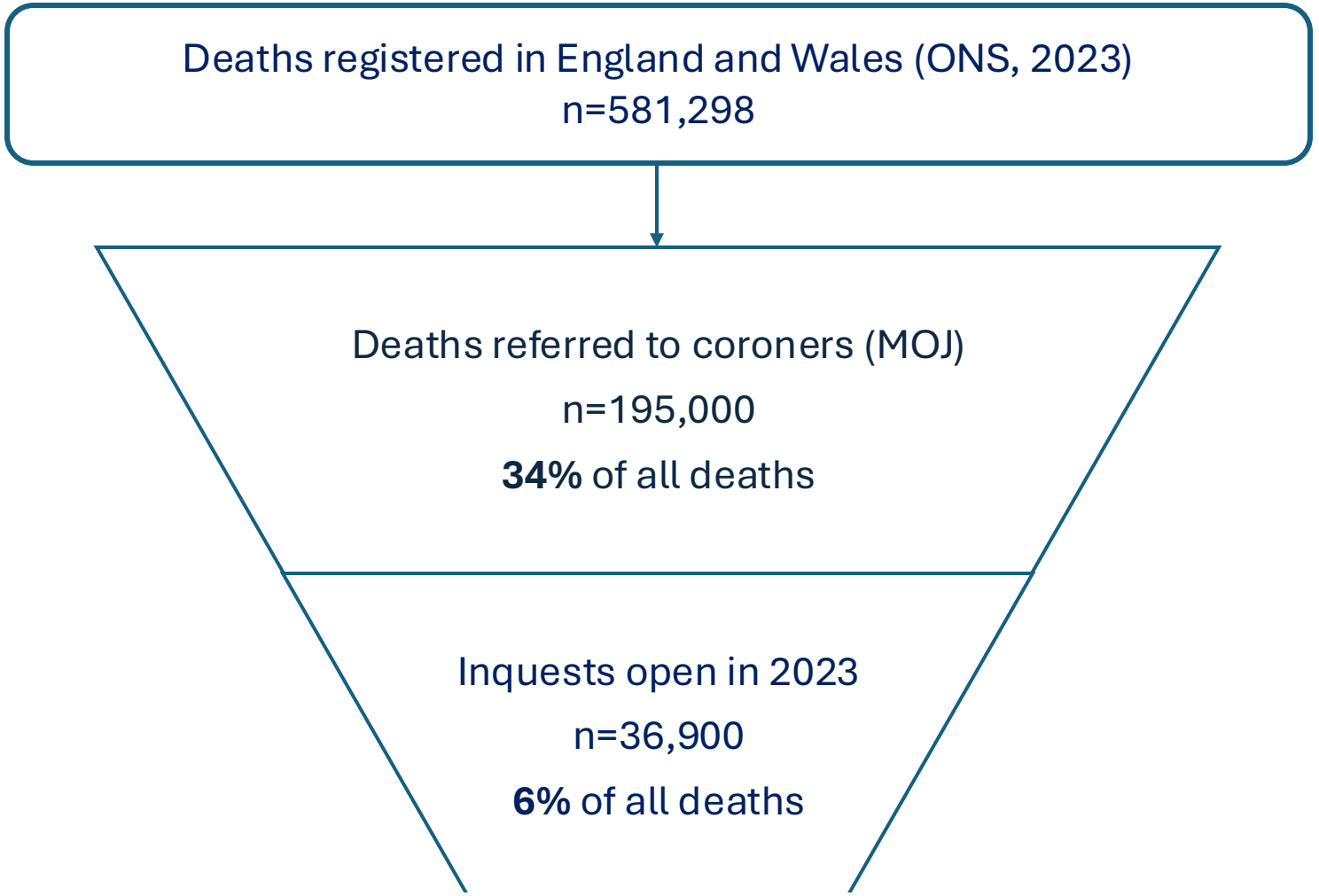
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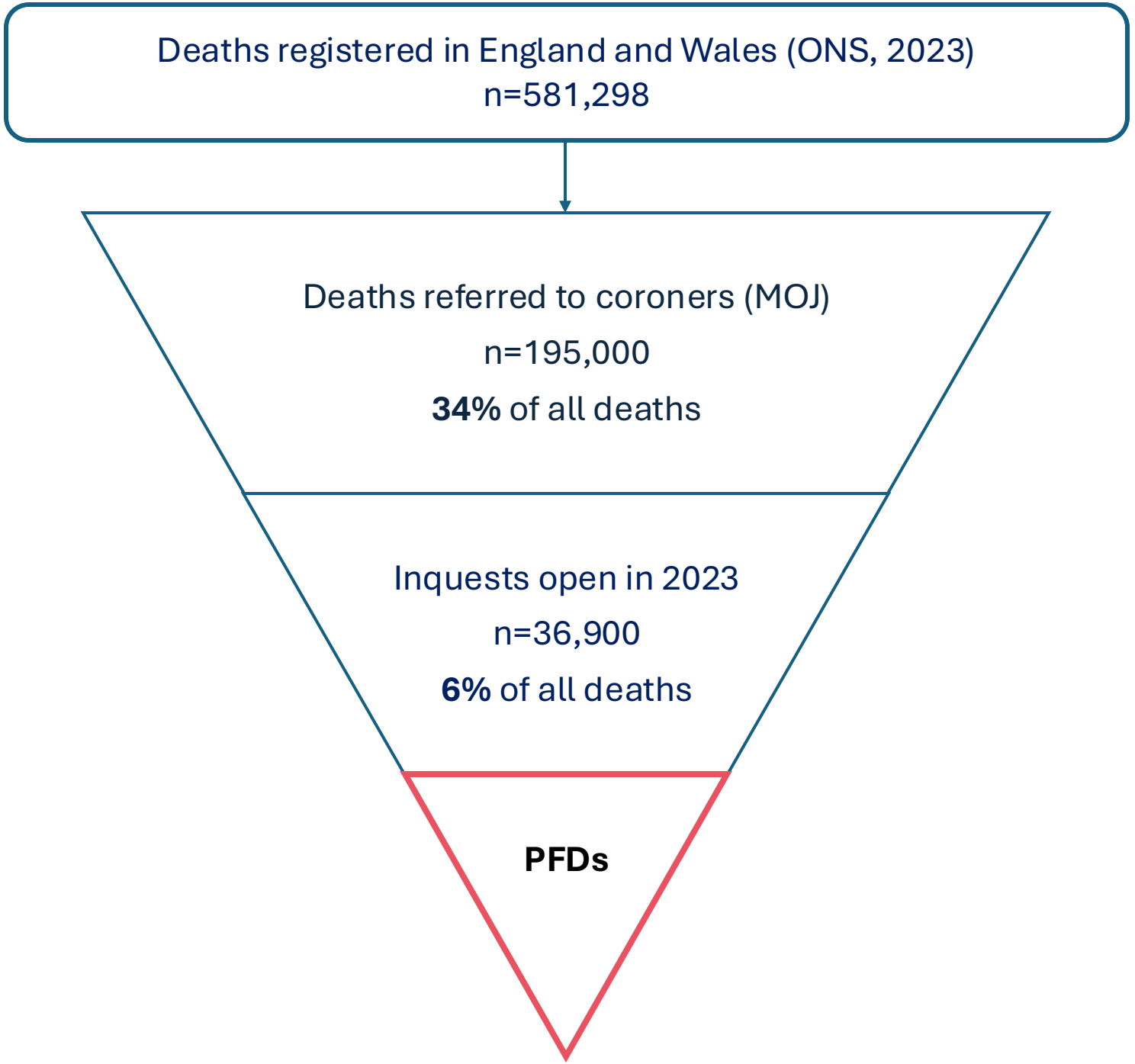
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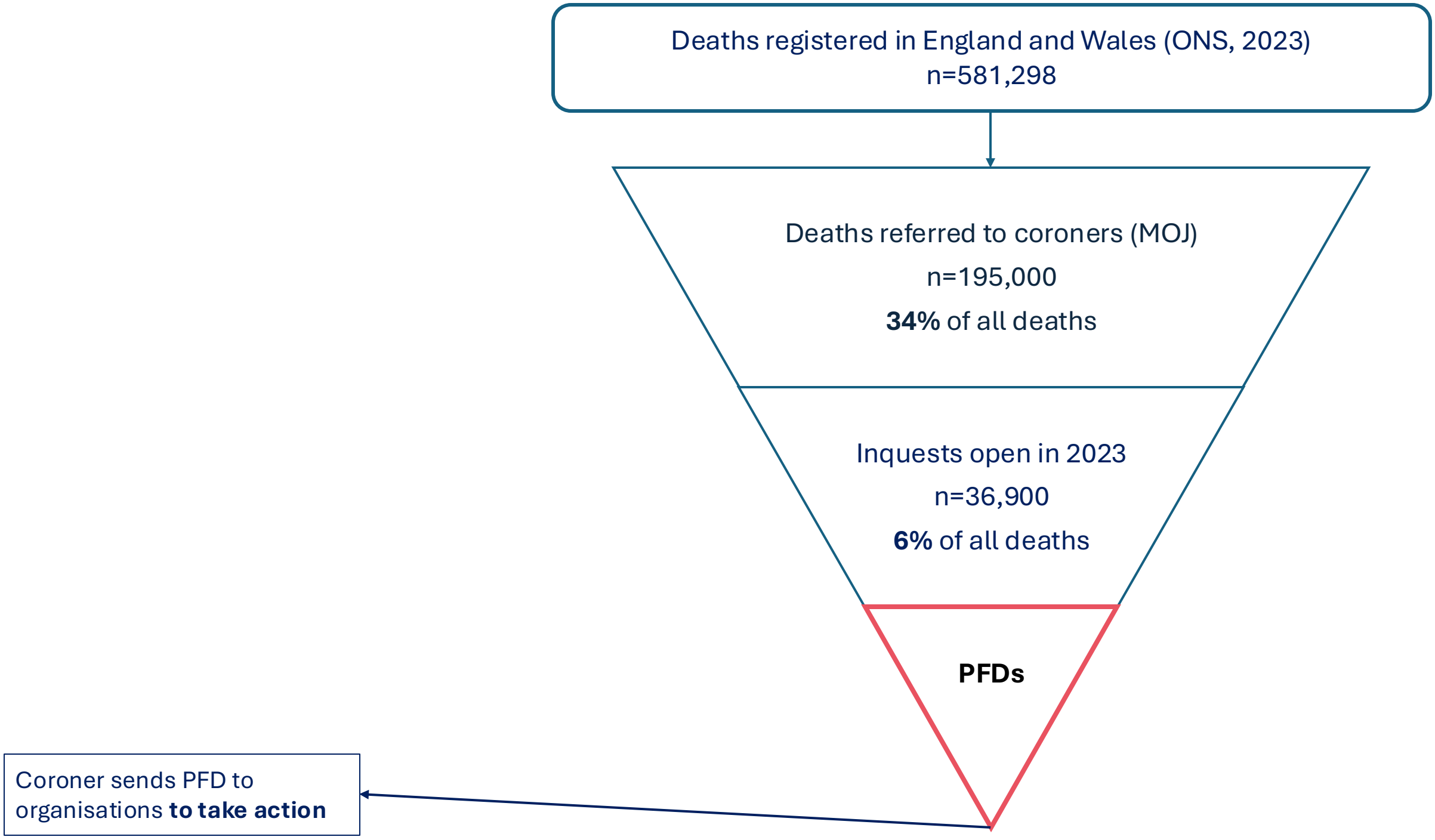
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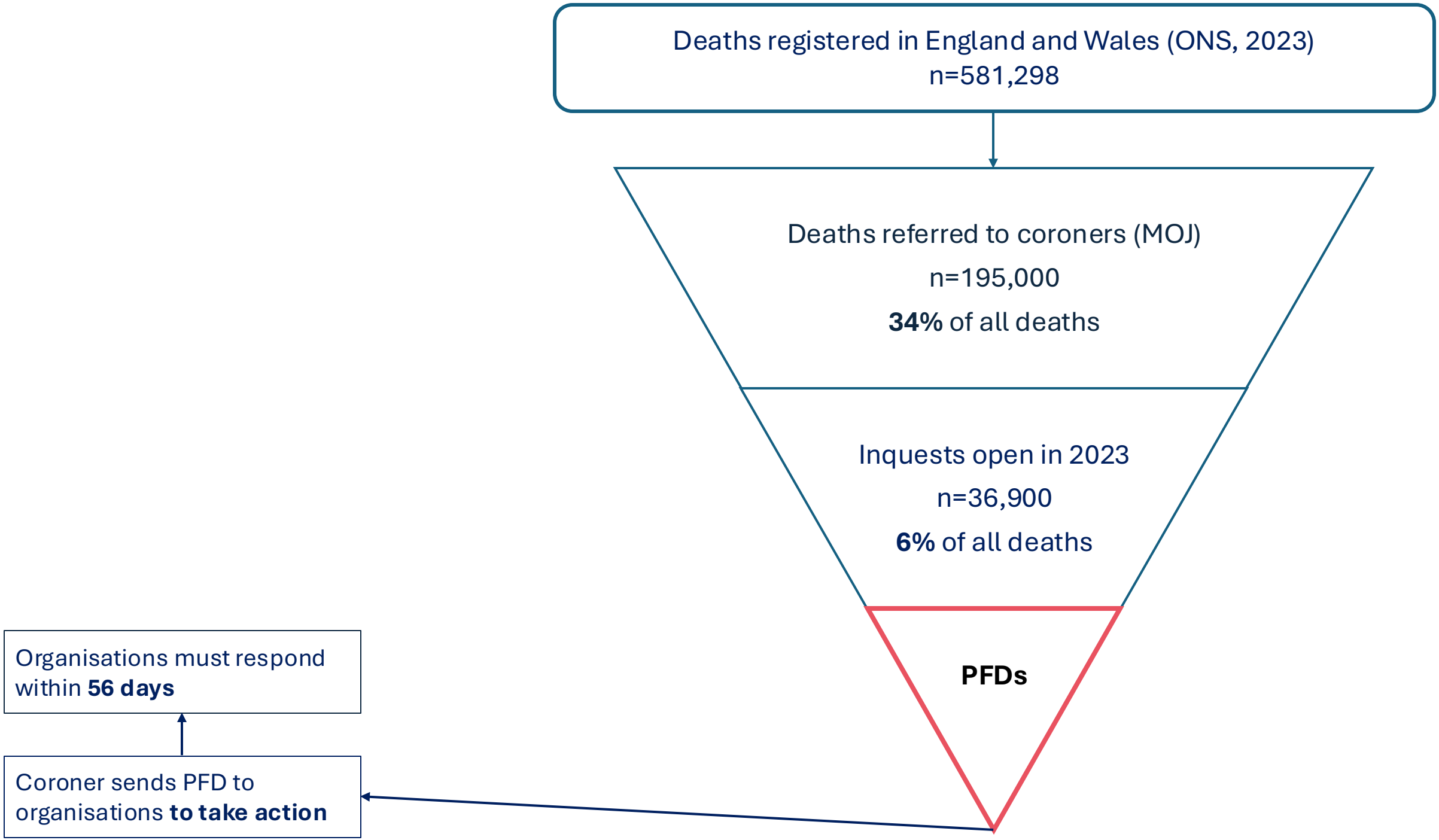
Coroner sends PFD to organisations to take action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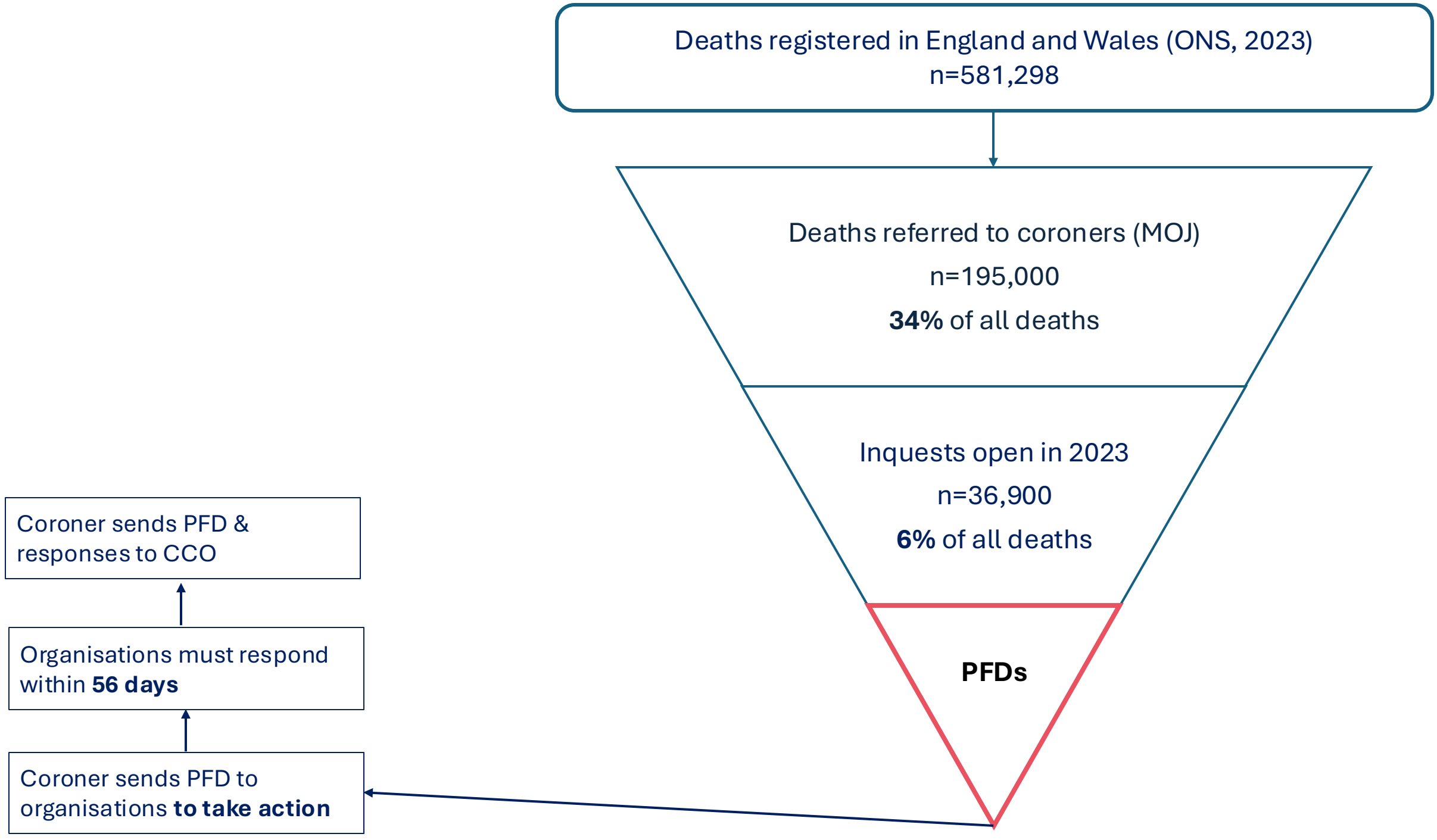
Organisations must respond within 56 days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Coroner sends PFD & responses to CCO
Organisations must respond within 56 days
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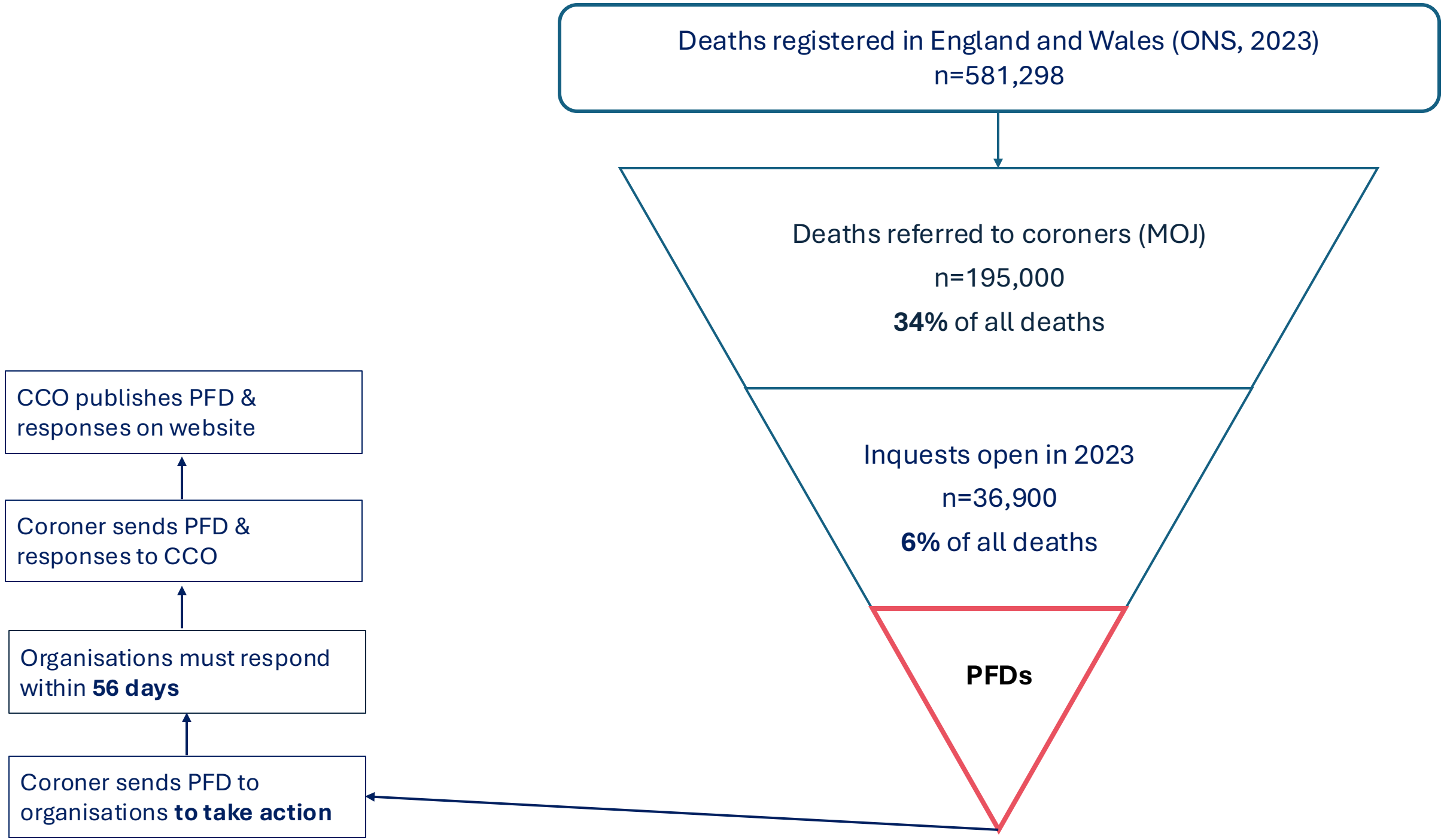
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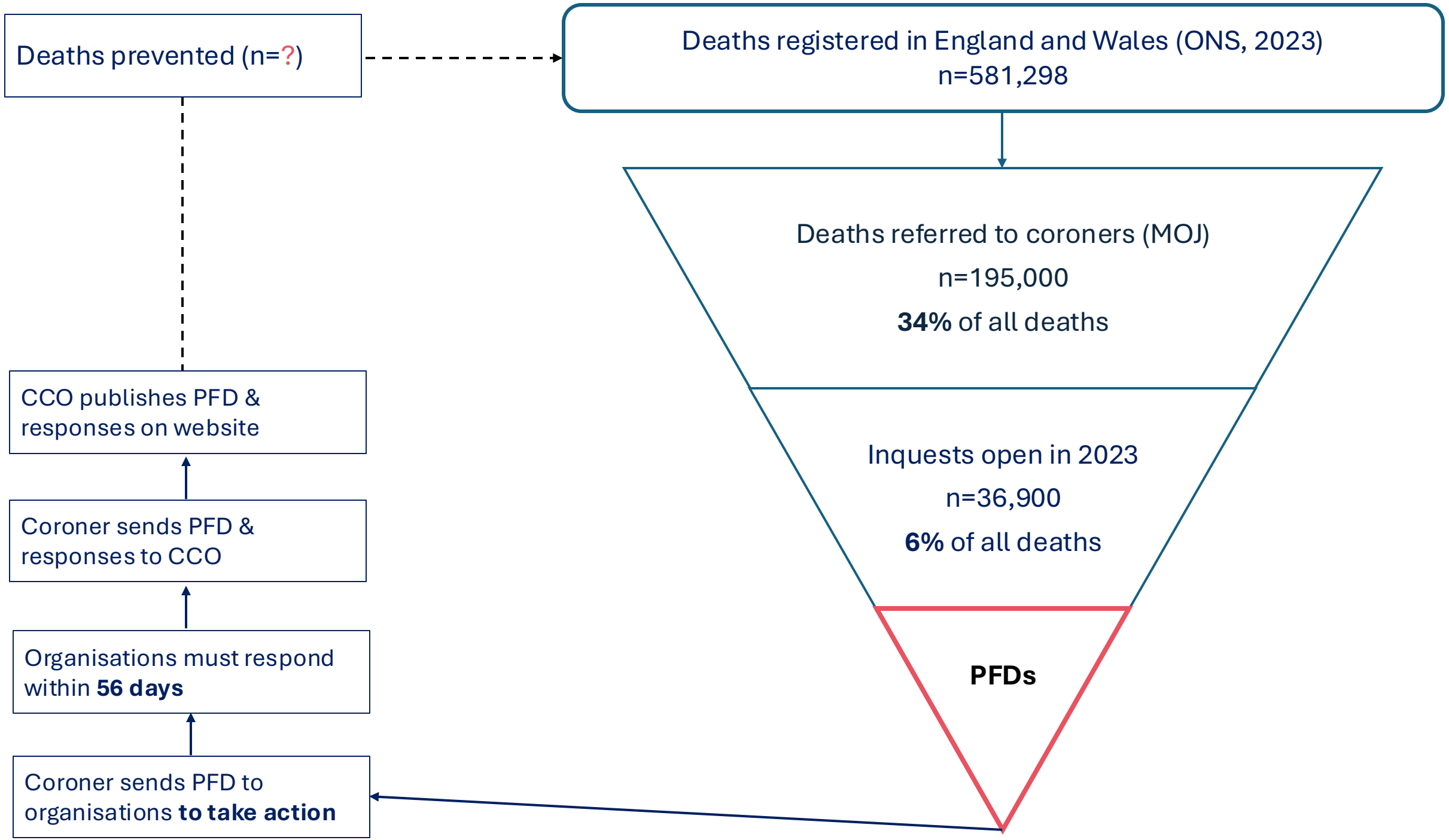
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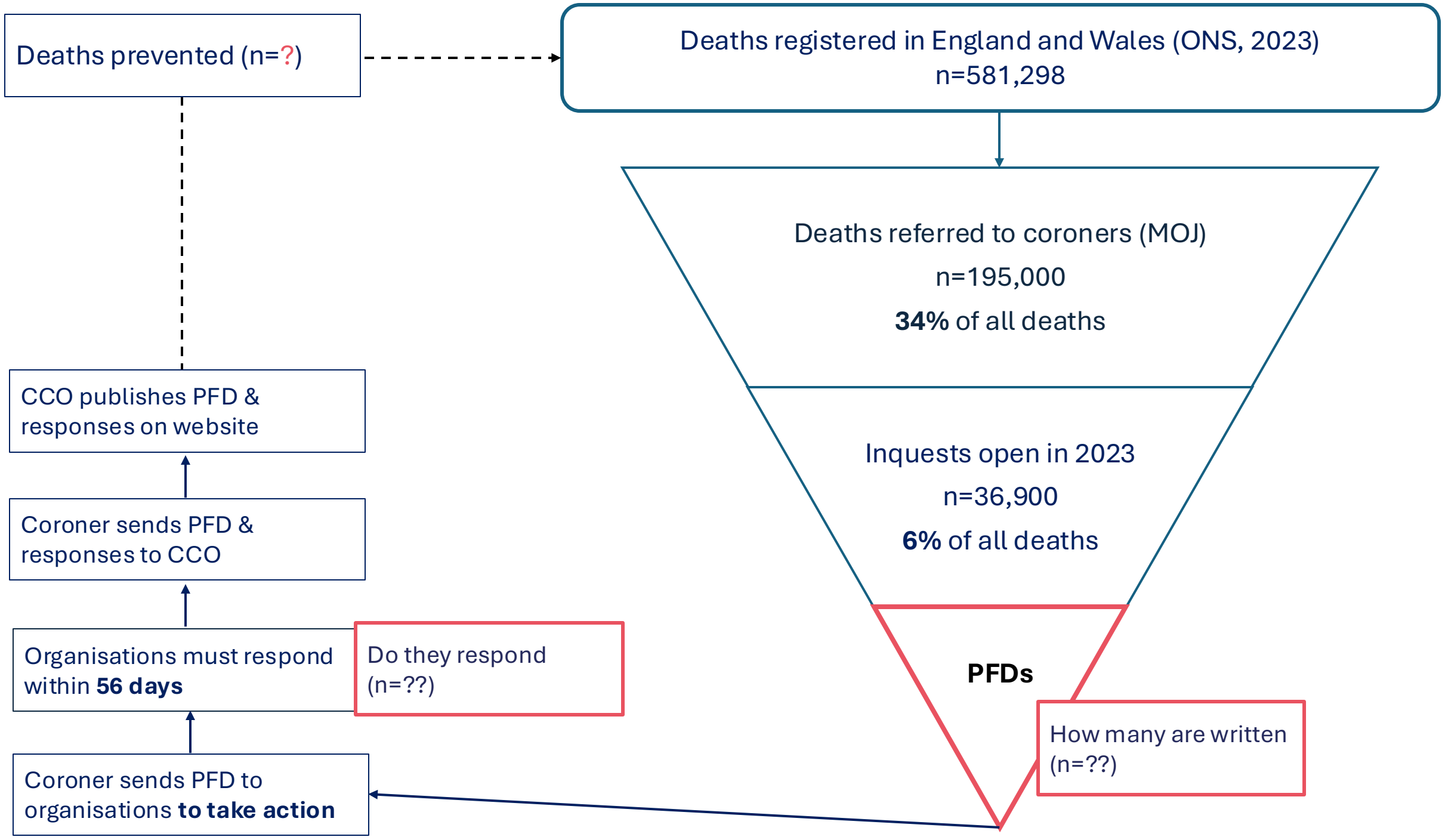
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How many are written
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Do they respond
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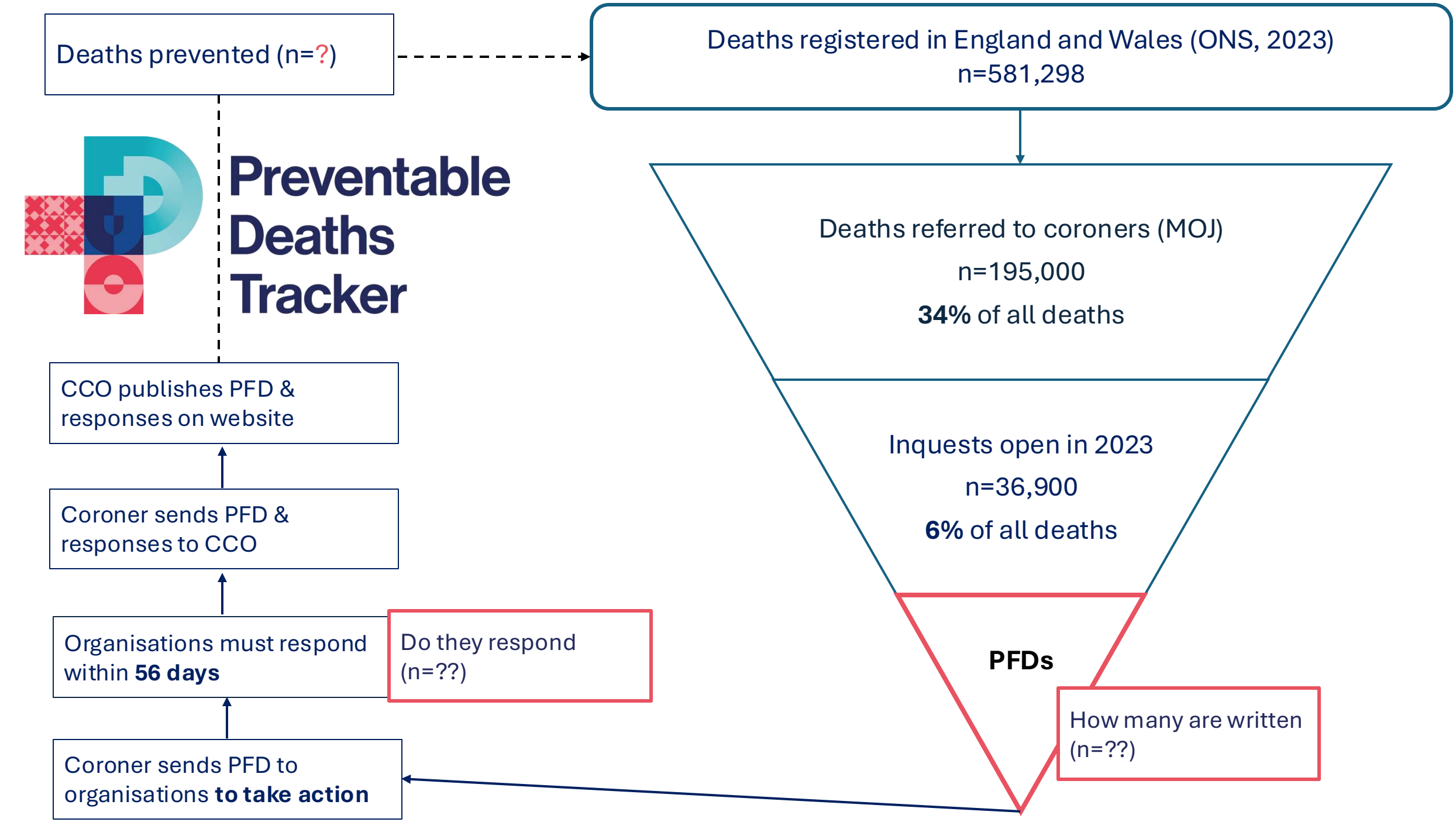
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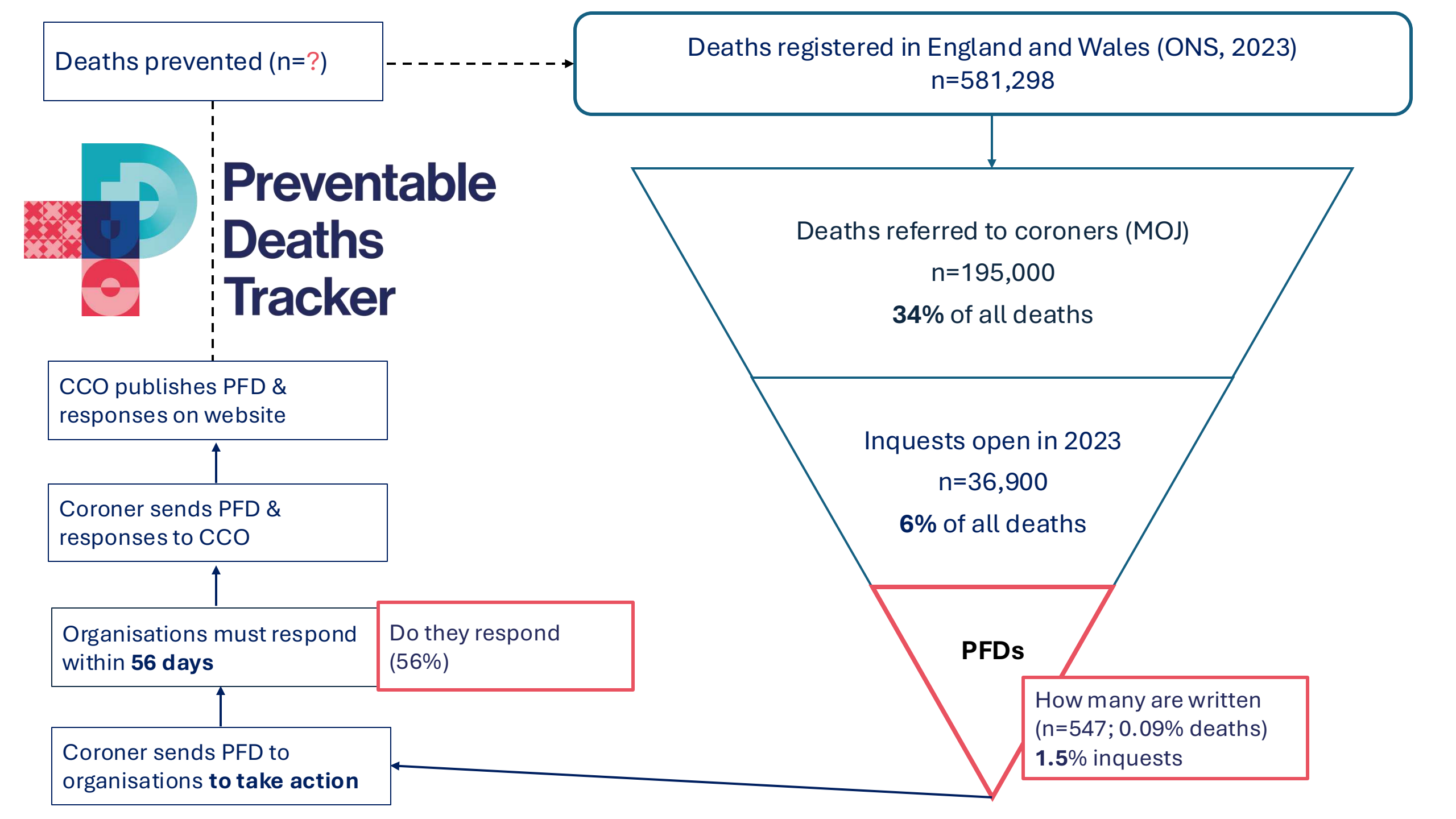
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(n=547; 0.09% deaths)
1.5% inquests
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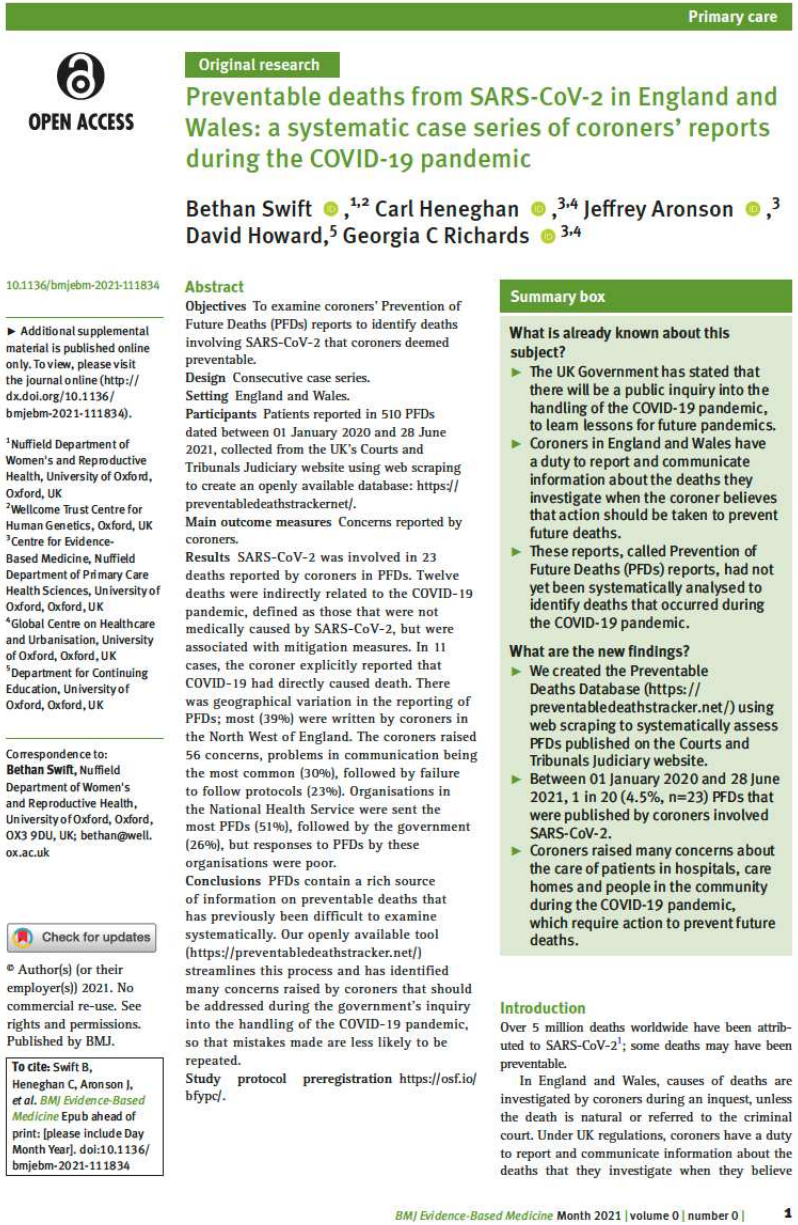
Organisations must respond within 56 days
Do they respond (56%)
Coroner sends PFD to organisations to take action



Primary care

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Original research

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

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[5]Department for Continuing Education, University of Oxford, Oxford, UK

Correspondence to:
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Check for updates

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

Abstract

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.

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 systematically. Our openly available tool (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 repeated.

Study protocol preregistration https://osf.io/bfypc/.

Summary box

What is already known about this 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 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 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

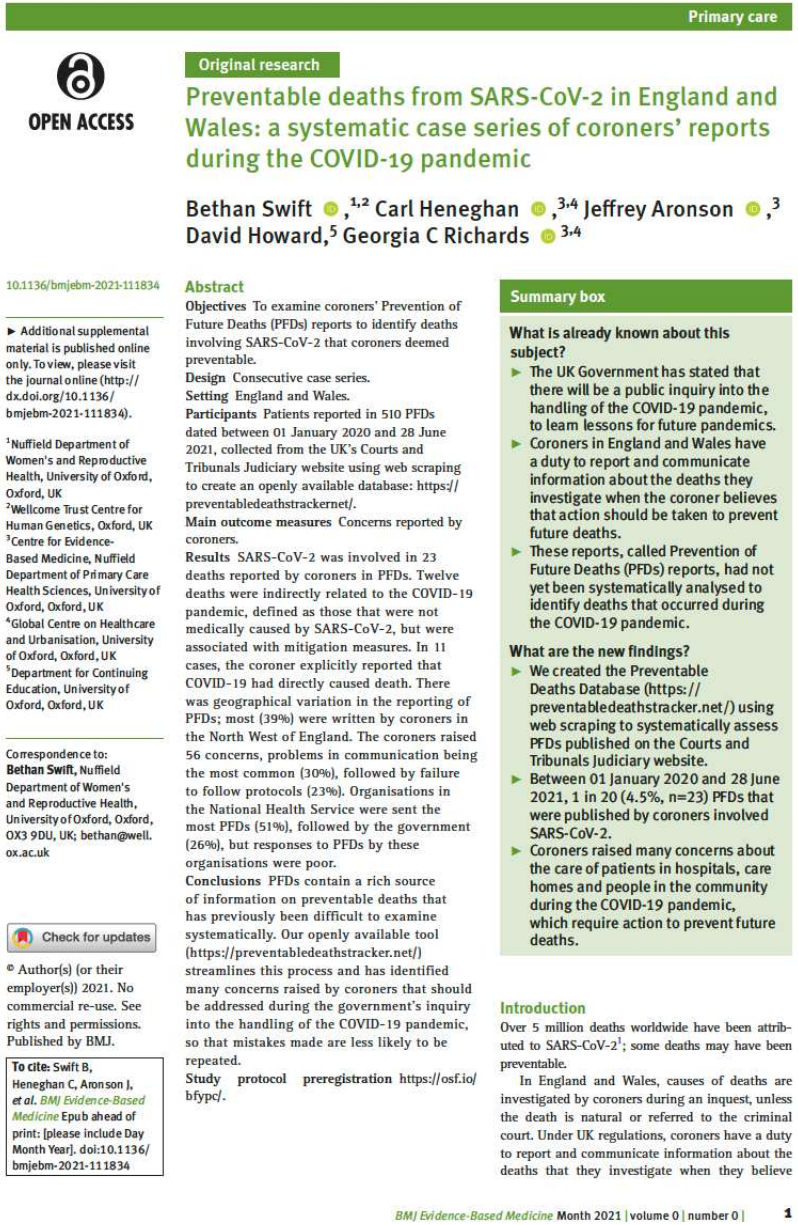
Over 5 million deaths worldwide have been attributed to SARS-CoV-2[1]; some deaths may have been preventable.

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

- 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**)

Preventable Deaths Tracker



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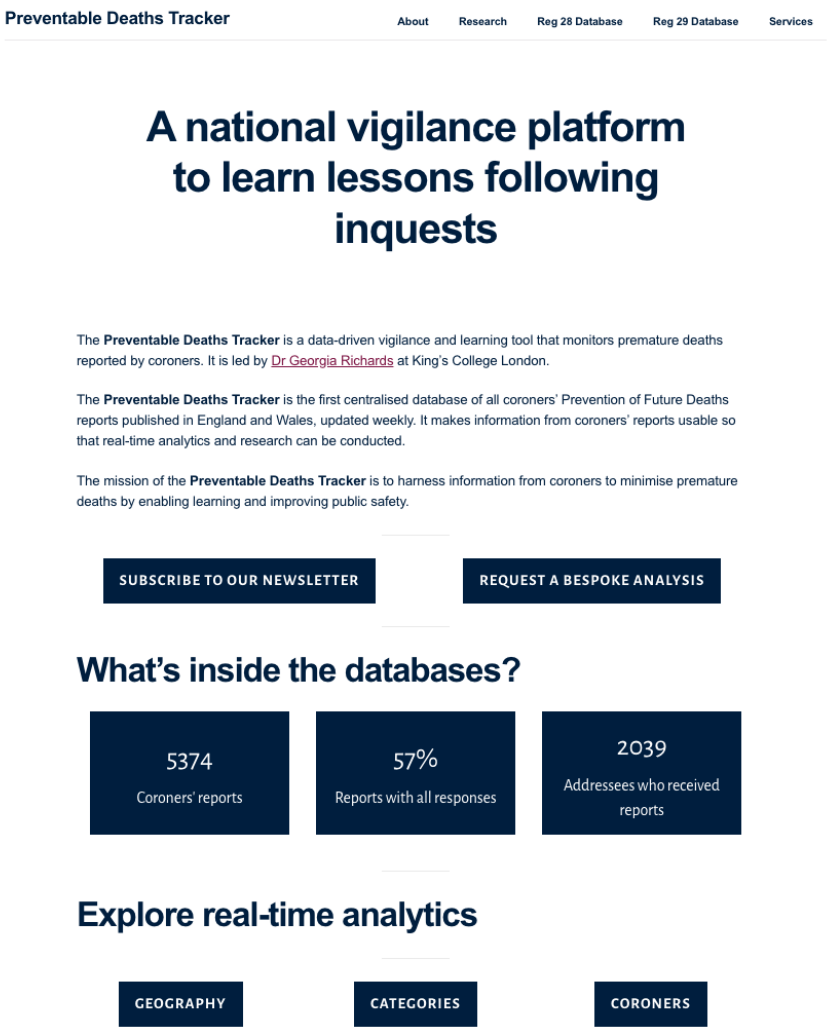
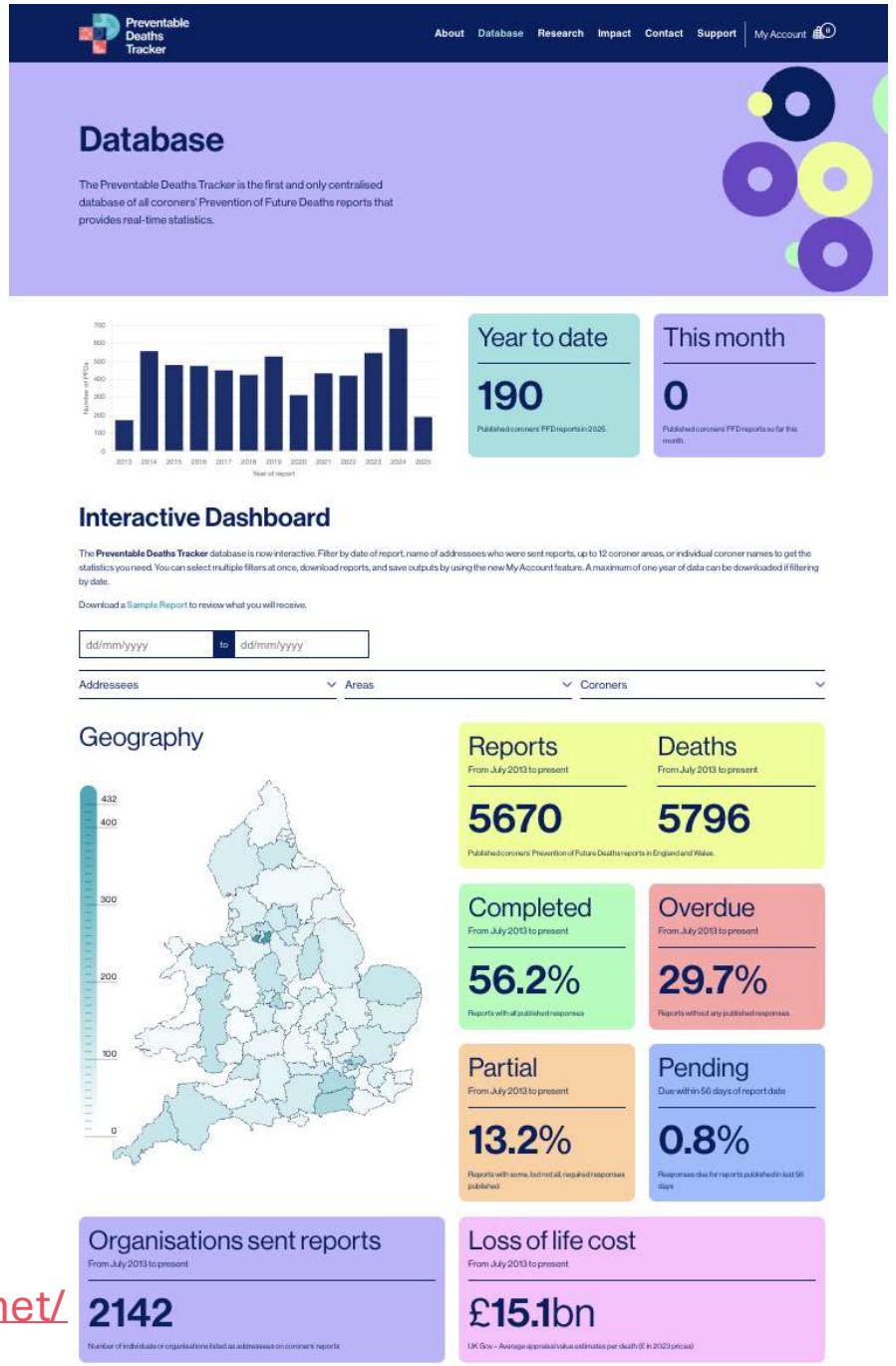
Findings

- 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.

Preventable Deaths Tracker

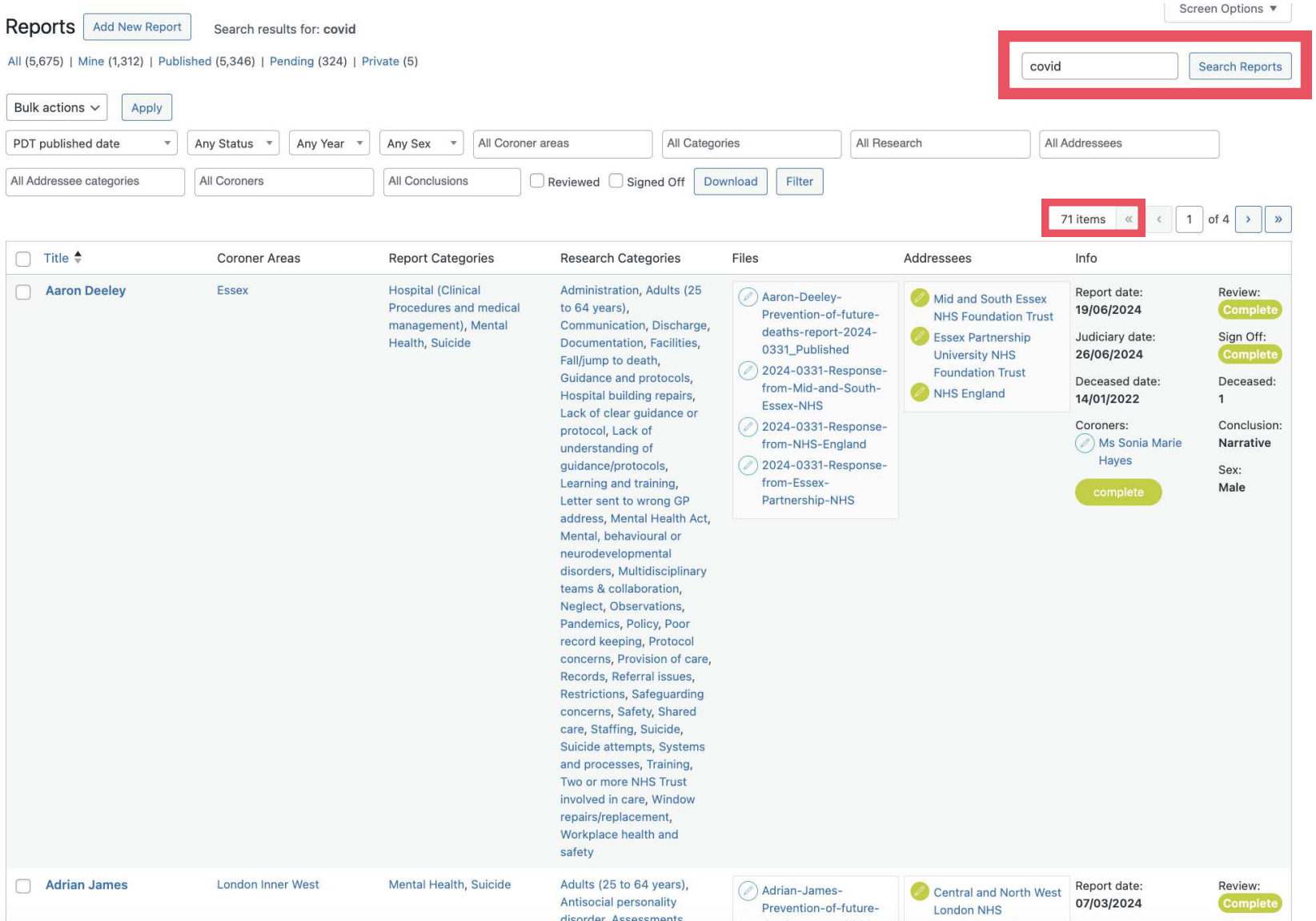
2020-Jan 2025





https://preventabledeathstracker.net/

From manual screening to machine readability



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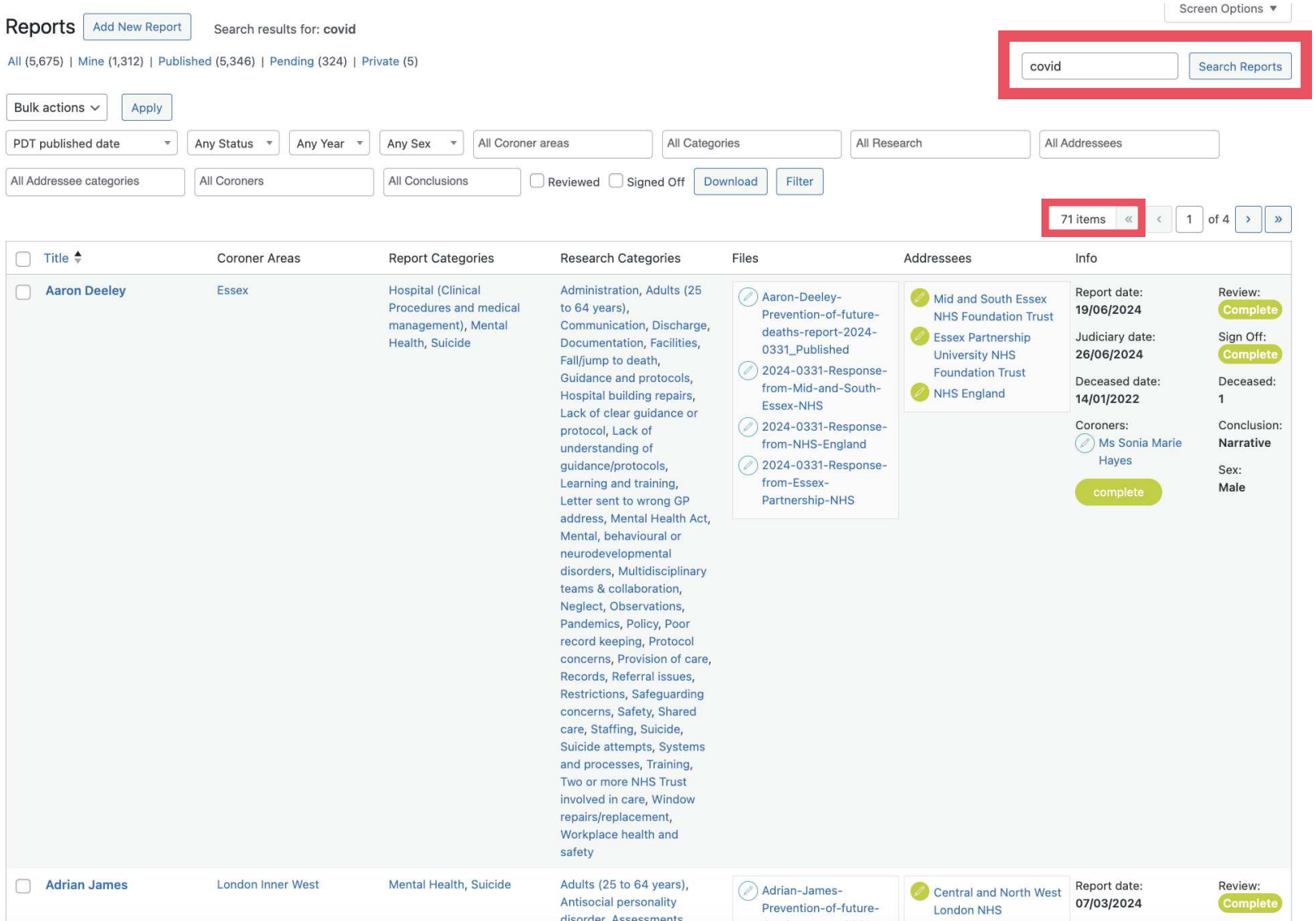

Terms	Hits
Covid	71
Corona	63
Pandemic	32
Lockdown	4
Sars	1


Reports
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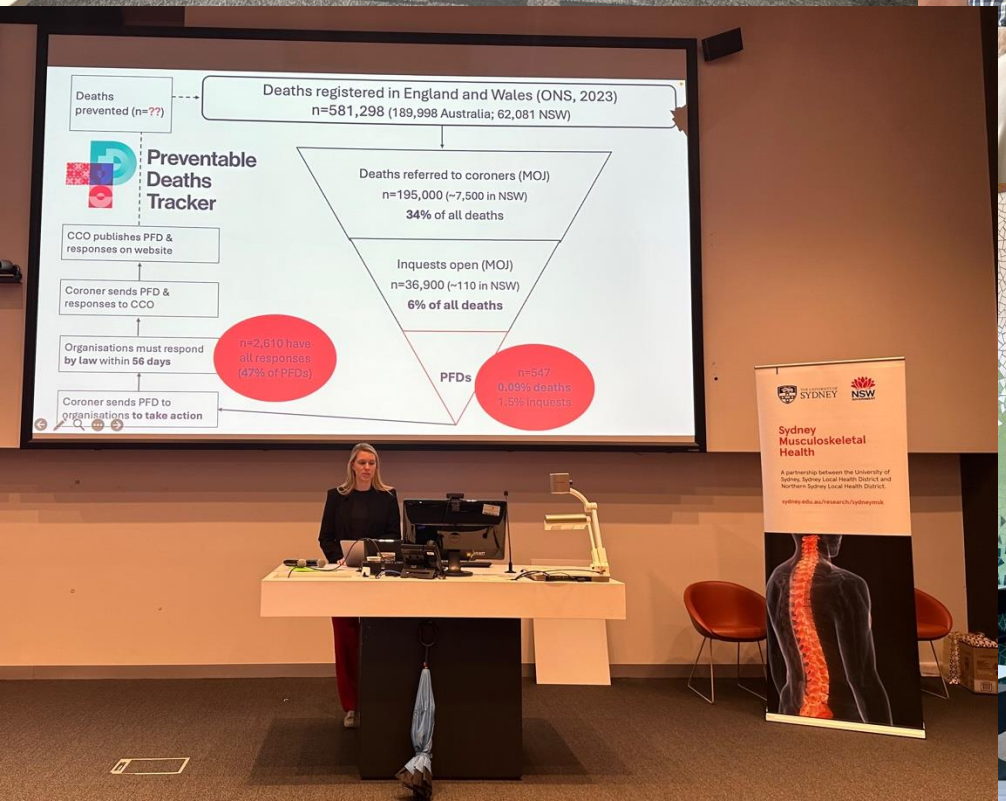
Apply
PDT published date
All Addressee categories
Title
Aaron Deeley
Adrian James
The Pandemic
EVIDENCE Collaboration
SAVE the DATE
24 – 26 JUNE 2026
EBMLive - Creating High Quality Evidence
for Evidence-Informed Policy
Rhodes House, Oxford, UK

A global Preventable Deaths Tracker

Preventable Deaths Tracker


CORONERS COURT
OF QUEENSLAND
QUEENSLAND COURTS


VIFM
VICTORIAN INSTITUTE OF FORENSIC MEDICINE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34% of all deaths
Inquests open (MOJ)
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6% of all deaths
PFDs
n=547
0.09% deaths
1.5% inquests
CCO publishes PFD & responses on website
Coroner sends PFD & responses to CCO
Organisations must respond by law within 56 days
n=2,610 have all responses (47% of PFDs)
Coroner sends PFD to organisations to take action
Sydney Musculoskeletal Health


Forensic Medicine &
Coroners Court Complex

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 'mind-blowing'

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

Preventable Deaths Tracker

07:49

Top stories

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

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

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

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

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Preventable Deaths Tracker

07:49

Top

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Email

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100

THE TIMES

Wednesday January 15 2025

NEWS WORLD COMMENT BUSINESS

Traitor or faithful? It depends on your political beliefs

Backstabbing, treachery and suspicion are traits more commonly associated with Westminster than BBC1 entertainment...

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

Type of drug taken by Thomas Kingston flagged 40 times by coroners

Why telling your child to finish their

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Preventable Deaths Tracker

Preventable Deaths Tracker

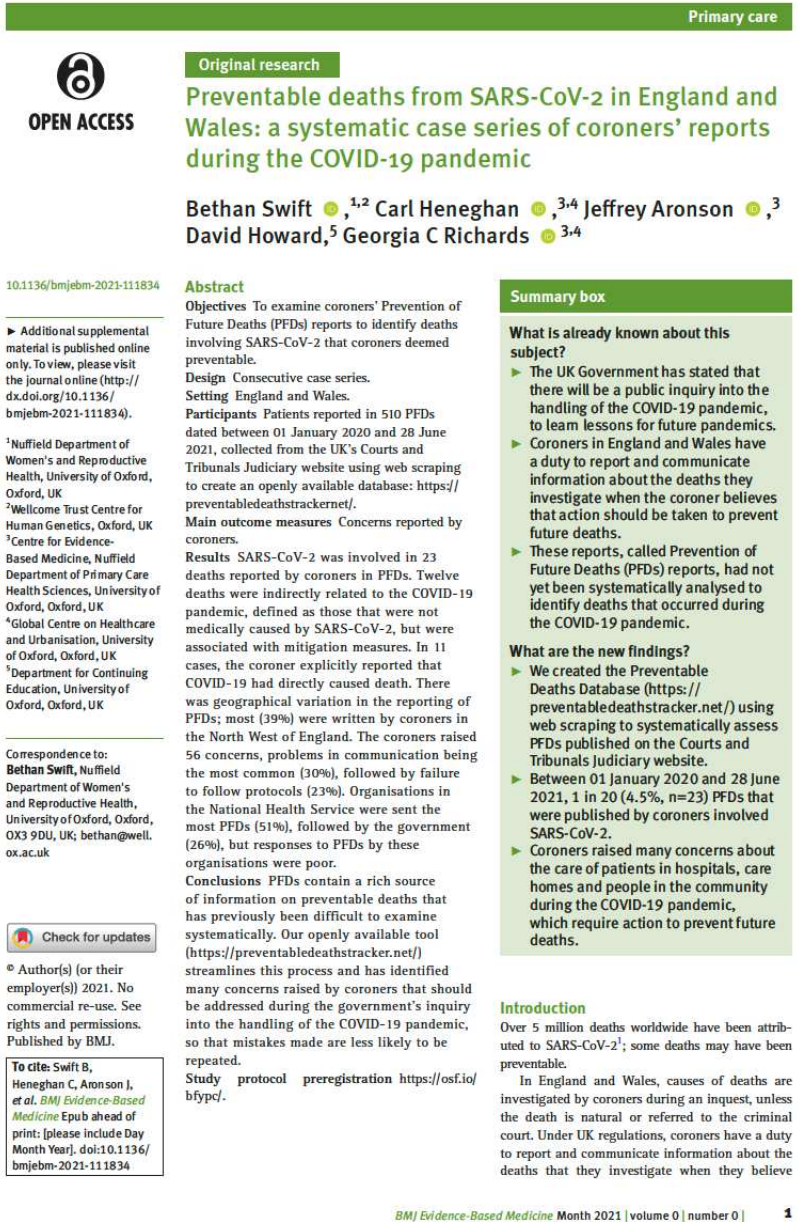
Preventable Deaths Tracker

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

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Original research

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]

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Abstract

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Study protocol preregistration https://osf.io/bfypc/.

Summary box

What is already known about this 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 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.
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Introduction

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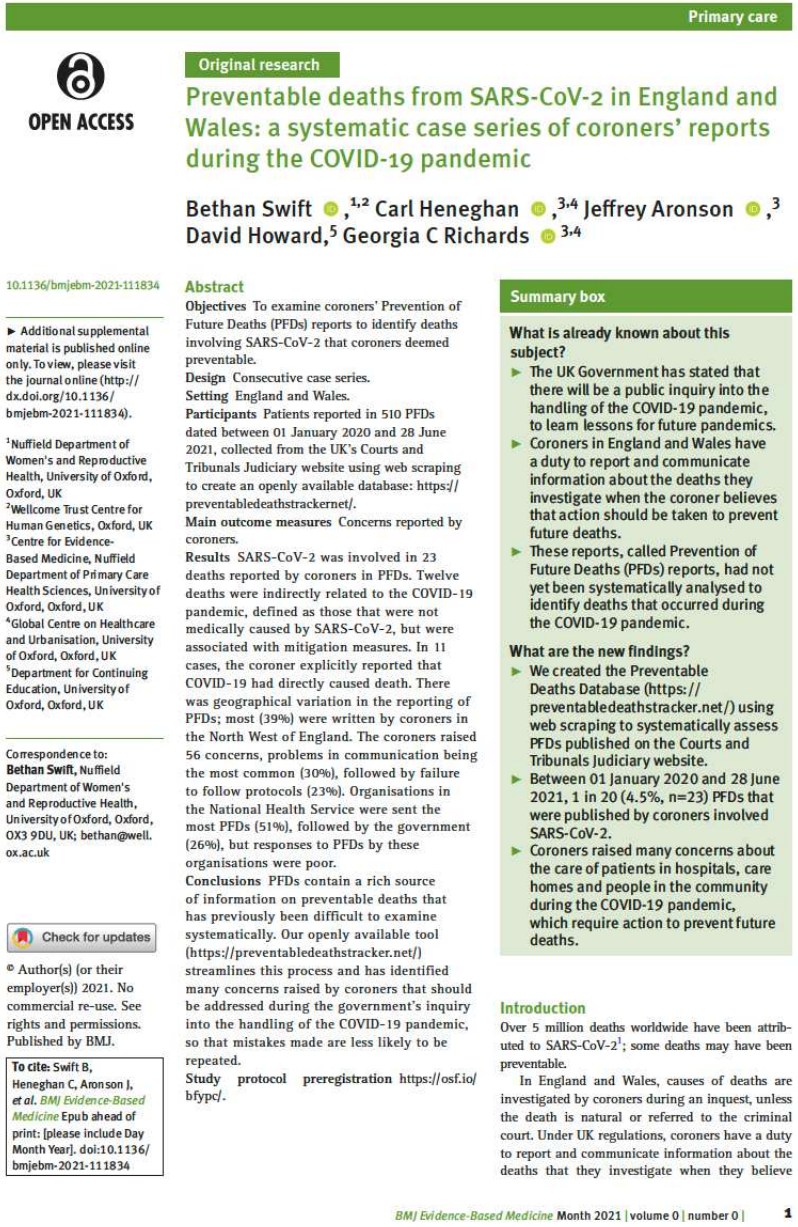
In England and Wales, causes of deaths are investigated by coroners during an inquest, unless the death is natural or referred to the criminal court. Under UK regulations, coroners have a duty to report and communicate information about the deaths that they investigate when they believe

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

Preventable Deaths Tracker



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Limited risk assessment of mitigation measures

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

Preventable Deaths Tracker

Concerns raised by coroners

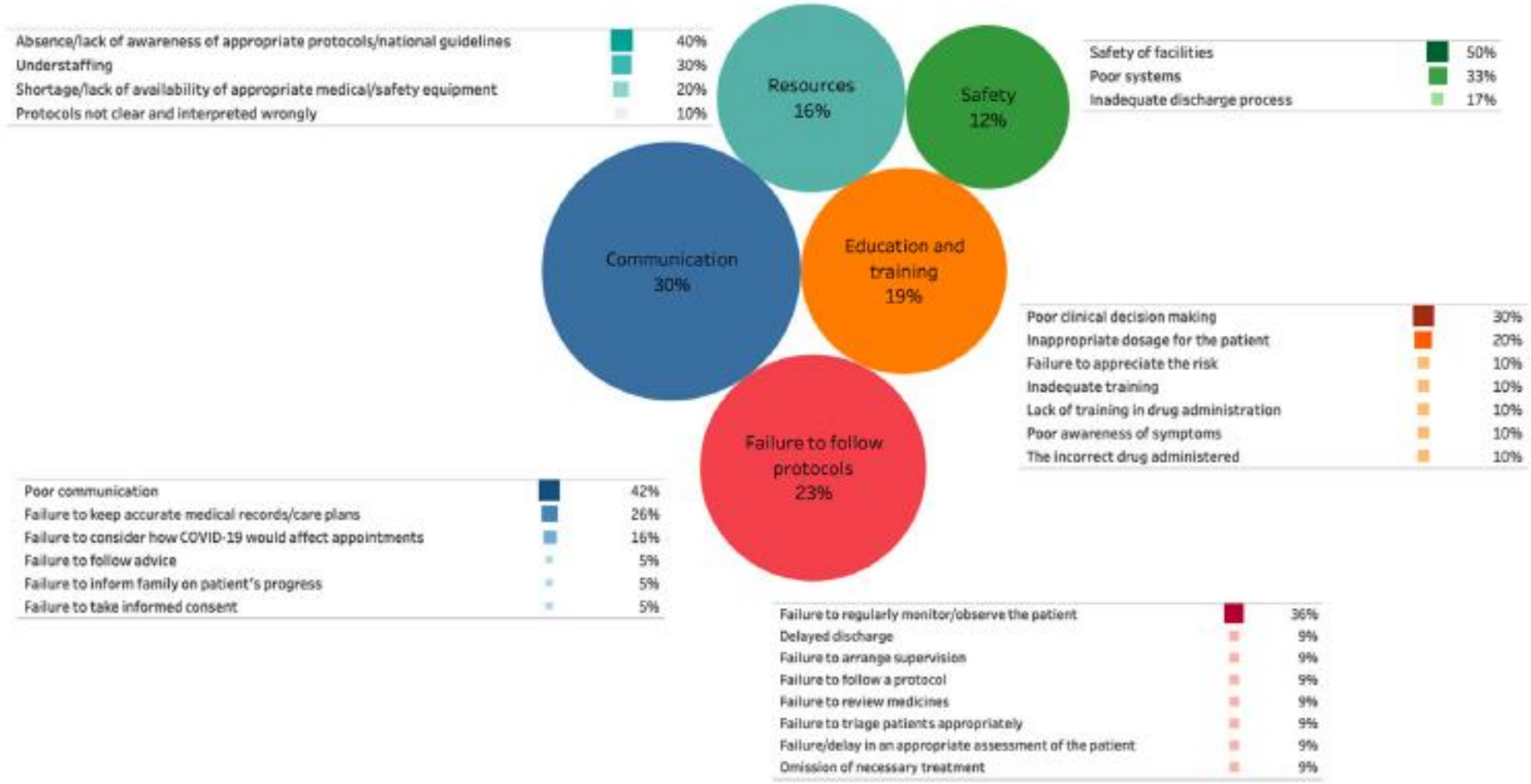

Figure 3 Concerns raised by coroners in Prevention of Future Deaths reports involving COVID-19 in England and Wales between 1 January 2020 and 28 June 2021. Created by the authors.

Preventable Deaths Tracker

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

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)

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 Pathways†	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 Service†	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.

†NHS 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.

Preventable Deaths Tracker

Original Research Paper

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

DOI: 10.1177/25160435231198685
journals.sagepub.com/home/cri
Sage

Benjamin T. Bremner[1], Carl Heneghan[2], Jeffrey K. Aronson[2] and Georgia C. Richards[2]

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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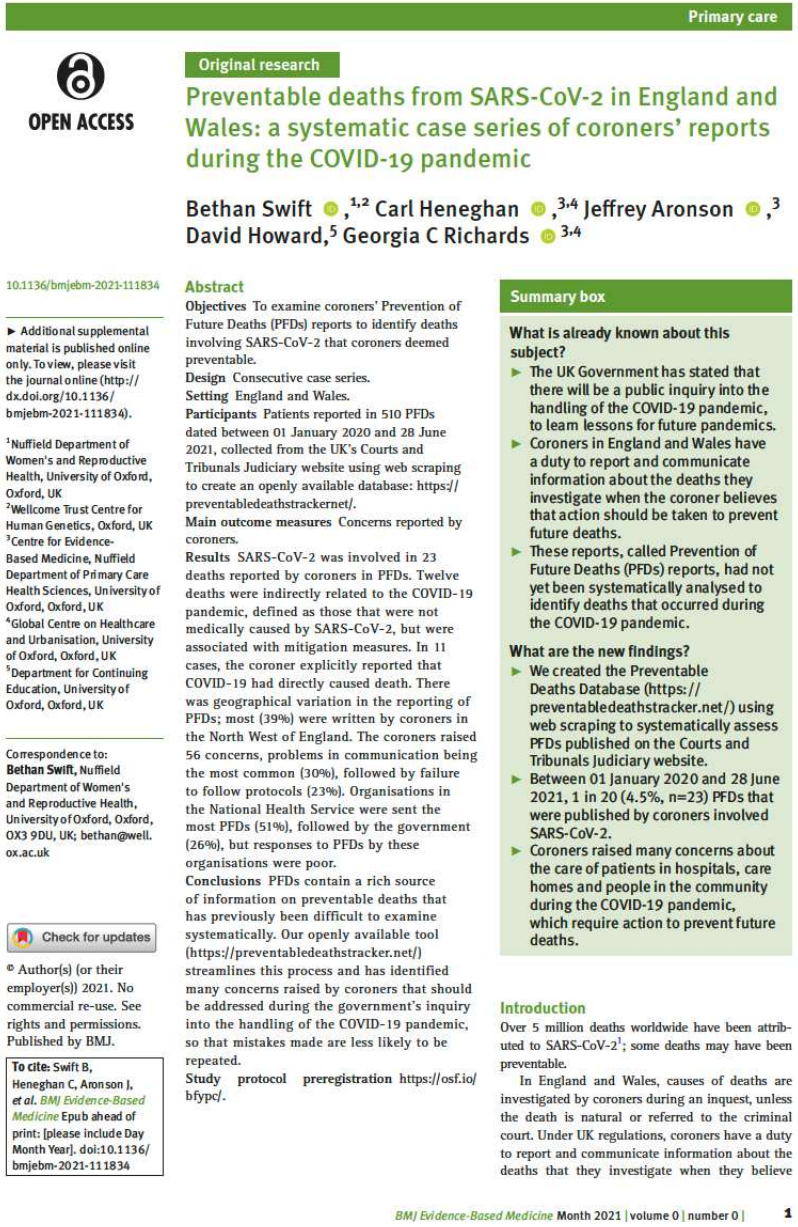
Limitations (Feb 2023)

- 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



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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.