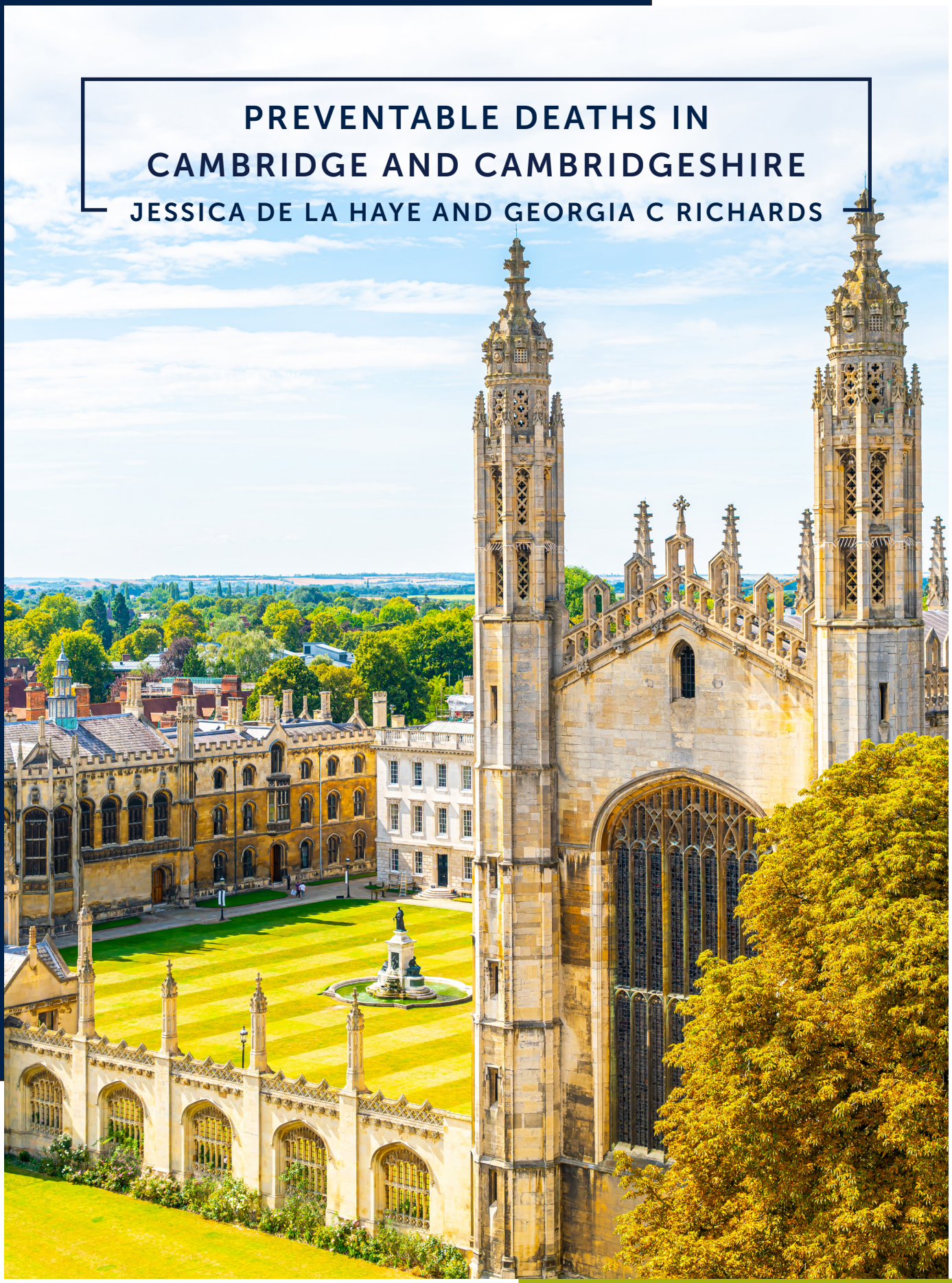
PREVENTABLE DEATHS IN CAMBRIDGE AND CAMBRIDGESHIRE

JESSICA DE LA HAYE AND GEORGIA C RICHARDS



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Preventable deaths in the city of Cambridge and Cambridgeshire, UK

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Overview

Cambridgeshire is amongst the least deprived counties in the UK[1], but it has large health inequalities and higher rates of hospital admissions for alcohol-related conditions, serious road injuries, and self-harm[2]. To identify possible policy and public health strategies that can combat the issues faced in Cambridgeshire, this report analyses the content of Prevention of Future Death (PFD) reports published between 1st July 2013 and 7th September 2021.

We identified 22 PFD reports, which provided a rich source of data, pinpointing deficiencies in policy where changes can prevent future harms and deaths. Many of these deaths were attributed to systemic issues within the healthcare system. Concerns were frequently raised about the lack of guidelines for clinicians in certain high-risk substance abuse circumstances and failures in the assessments of patients in emergency situations due to inadequate training. These two areas highlight weaknesses in current systems, demonstrating where governments should focus efforts on implementing new policies to prevent further harm.

There was poor compliance (45% addressees responded) in responding to coroner PFD reports, which is mandated under regulation 29 of The Coroners (Investigations) Regulation 2013, requiring a response within 56 days. Consequently, tracking the implementation of appropriate action is difficult and the crucial lessons reported in PFDs may be lost. More attention should be paid on securing responses from addressees, ensuring these are available publicly, and action is taken to prevent harm.

[1] Cambridge and Peterborough Clinical Commissioning Group, 2020: https://www.cambridgeshireandpeterboroughccg.nhs.uk/EasySiteWeb/GatewayLink.aspx?alId=21928
[2] Public Health England, 2020: https://fingertips.phe.org.uk/static-reports/health-profiles/2019/e07000008.html?area-name=cambridge

Introduction

With an estimated population of 125,000 as of 2020, Cambridge is a relatively small and busy city with substantial economic success, such as its thriving tech and biotech industry and large student population[3]. Its county, Cambridgeshire, is amongst the 10-20% least deprived upper tier local authorities nationally regarding income, crime, employment, disability, and health[1]. However, these outcomes are not homogenous across the county, with districts such as Fenland having significantly higher levels of deprivation. Consequently, large health inequalities exist, such as the 10 year life expectancy difference between men in the richest areas compared to the poorest areas[1]. Though life expectancy, causes of death and indicators of child health are comparable to national statistics, Cambridge has high rates of hospital admissions due to alcohol-related conditions and serious or fatal road injuries[2]. Additionally, hospital admissions resulting from self-harm have been higher in Cambridgeshire than England for over 6 years, with rates rising higher than national rates, despite the NHS Local Transformation Plan for child and adolescent mental health services[4]. Analysing Prevention of Future Death Reports can identify potential actions that can inform policy and public health strategies to minimise these preventable deaths and health inequalities.

Coroners in England and Wales must report and communicate deaths when they believe that actions should be taken to prevent future deaths. These reports, named Prevention of Future Deaths reports (PFDs), involve three processes: 1) coroners write PFDs highlighting concerns and address reports to specific individuals or organisations; 2) addressees respond to the concerns raised in PFDs within 56 days; 3) the actions taken (or proposed) are explained and implemented. However, this process and the statutory requirement of responding to PFDs and taking action is not audited, and concerns have been raised regarding the lack of wider communication of the lessons reported in PFDs.

PFDs have been analysed to examine preventable deaths involving cardiovascular disease and anticoagulants, the covid-19 pandemic, cyclists, suicides, medicines and drugs of misuse, including an analysis of opioid-related deaths. However, PFDs in Cambridge have not been assessed and compared with other cities.

Analysis

We conducted a case series of coroner PFD reports using the Preventable Deaths Database, created using web scraping. We screened 3699 PFDs dated between 1 July 2013 and 7 September 2021 and included PFDs that occurred in Cambridge. We removed duplicates and reports where deaths did not occur in Cambridge. We extracted relevant information reported by coroners and categorised the types of deaths in each city by assigning numeric codes to each PFD from the World Health Organizations (WHO) International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10). We calculated summary statistics where possible and used content analysis to categorise concerns raised by coroners thematically.

[3] Cambridge City Council, 2018: https://www.cambridge.gov.uk/media/6890/local-plan-2018.pdf

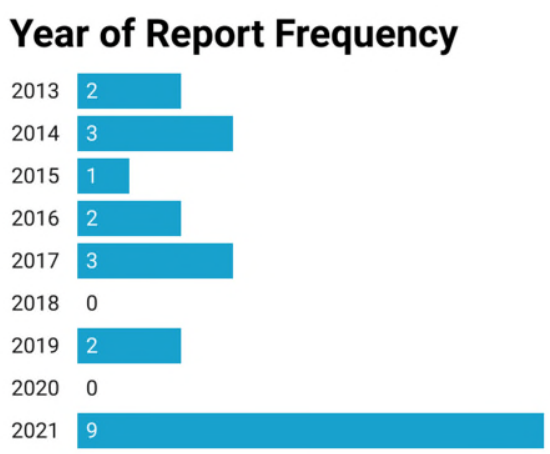
[4] Cambridgeshire County Council, 2019: https://cambridgeshireinsight.org.uk/wp-content/uploads/2020/01/CCC-APHR-2019-final.pdf

The data created for this report is openly available on the Open Science Framework, available here: https://doi.org/10.17605/OSF.IO/GV9EZ

Findings

There were 21 preventable deaths (22 PFDs) reported by coroner's in Cambridgeshire between 1 July 2013 and 7 September 2021 (Table 1). Most (41%, n=9) PFDs were published in 2021 (Figure 1a), with deaths occurring across 2012 and 2021 (Figure 1b) with an average of a 2.4 year delay (871 days, Figure 2), illustrating the delay in submissions to the Judiciary website. The average duration between date of death and date of report was greatest in 2019, taking more than 3 years (1132 days, Figure 2), delaying the opportunity to learn from these preventable deaths and implement changes to prevent further harms.

a.



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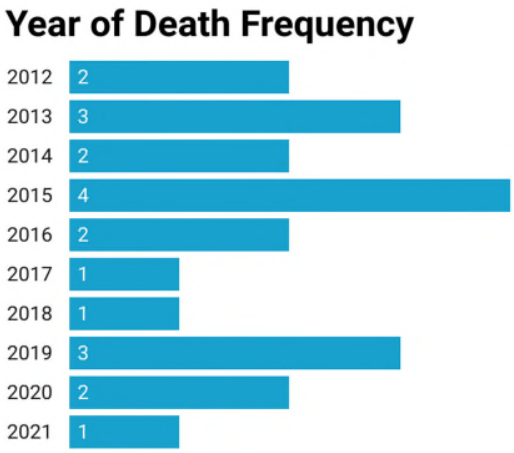

Figure 1: Frequency of Prevention of Future Death reports (PFD) by date of report (a.) and date of death (b.)

Year of Report	Average Date of Death	Average No. of Days Between Death and Report
2013	17/01/2013	272
2014	23/10/2013	203
2015	15/07/2014	245
2016	05/02/2015	576
2017	26/02/2016	563
2018		
2019	12/07/2016	1,132
2020		
2021	02/01/2019	871

Figure 2: Table showing the average date of death and average number of days between the death and the report per year

Table 1: Summary of the 22 Prevention of Future Death reports in Cambridge and surroundings between July 2013 and September 2021.

Code	Age	Sex	Cause of Death	Summary of Concerns	Addressee	Date Due	Date of Response	Actions
2013-0272	39	M	Suicide by jumping in front of a train	1. Lack of communication between relevant parties 2. Ensure clear policies for staff to patient ratios and escorting patients as they leave psychiatric wards	Cambridgeshire and Peterborough Foundation Trust	17/12/2013	N/A	
2013-0288	70	M	Right haemothorax, rib fracture and fall	1. No method to differentiate between discharge summaries with serious injurious and those without 2. Failure to see patient when prescribing strong painkillers despite serious medical history	Nuffield Road Medical Centre	3/1/2014	N/A	
2014-0082	76	M	Accident by being struck by train	Poor positioning and function of the warning light system	Network Rail	24/4/2014	N/A	

2014-0159	33	M	Myocardial ischaemia	1. Requirement for assessment and communication of emergency team's training for transfers 2. Requirement for emergency clincians only with certain training to attend acute coronary syndrome ambulance transfers 3. Requirement for additional training for emergency teams 4. Requirement for increased communication with relatives	East of England Ambulance NHS Trust	4/6/2014	N/A	
					Messrs StewartsLAW LLP (for the family)		N/A	
					Messrs Hempsons (Solicitors for The Trust)		N/A	
2014-0393	-	F	Chronic renal failure and neglect	1. Lack of nursing care offered 2. Poor communication and handover 3. Neglect 4. Lack of inquiry following this event	Senior Nurse, Hinchingbrooke Hospital	30/10/2014	N/A	
					Chief Executive Hinchingbrooke Hospital		29/10/2014	Introduced spot checks on wards and increased training to recognise deteriorating patients; Updating the ward transfer policy to improve handovers; Raised awareness for acute kidney injury in chronal renal patients by recirculating guidance to staff; Revising Serious Incident process
2015-0101	55	M	Haemothorax/acute Aortic Dissection	Consider training like the East Midlands Ambulance Service Paramedic Pathfinder Programme to identify if a patient requires community or hospital transfer treatment	East of England Ambulance NHS Trust	28/4/2015	28/4/2015	Implementation of the Paramedic Pathfinder Programme is being discussed

2016-0254	18	M	Suicide by jumping in front of a train	1. GP prescribed antidepressant without consulting patient personally and GPs appear unaware there is a duty psychiatrist available to consult 2. Patient received no advice about medication's potential side effects, future mental health appointments or where to ask questions	GP Practice Orchard Surgery	7/11/2016	N/A	
					NHS England		N/A	
					Cambridge and Peterborough NHS Trust		N/A	
					Cambridgeshire and Peterborough Clinical Commissioning Group		N/A	
2016-0314	-	M	Suicide by stab wound	1. Limited information available about prisoners to assess risk factors 2. The use of personal officers with a meaningful interaction with prisoners nationally	National Offender Management Service	25/10/2016	N/A	
2017-0325	41	M	Gunshot wound by police	The ammunition was unbonded, even though bonded ammunition is recommended nationally, causing unnecessary injury	National Police Chiefs' Council	18/9/2017	N/A	
					Bedfordshire Police Constabulary		Undated	No longer using unbonded ammunition and amended systems of selecting ammunition

2017-0404	71	M	Brain damage from lack of lung ventilation	1. Failure to understand capnography indications 2. Lack of on-going training for anaesthetists	NHS England	12/1/2018	6/7/2018	Trust conducted a Serious Incident Investigation and NHS Improvement has included 'undetected oesophageal intubation' into their Never Event Framework that details preventable, serious events
					North West Anglia NHS Trust		12/1/2018	Introduced airway simulation training to improve technical skills and human factors training for non-technical skills; Conducted a feedback session for anaesthetists
					Royal College of Anaesthetists		12/1/2018	Raising awareness of capnography training to all trainees of anaesthesia through articles, meetings and online educational programmes; Asking the RCoA Simulation Working Group to create guidance on introducting regular crisis simulation for operating theatre teams
					The Difficult Airway Society		12/1/2018	Shared response - see above response for Royal College of Anaesthetists

2017-0457	24	M	Obstructive hydrocephalus	Wider communication of the consequences of using an opioid analgesia in someone with raised intracranial pressure	NHS England	20/10/2017	14/11/2017	Raised this with the Society of British Neurological Surgeons to discuss at the meeting and recommend a solution and distribute this nationally
				1. No serious incident report 2. Missed clear indicator of rising intracranial pressure 3. Delayed and poor communication 4. Poor patient management	Barking, Havering and Redbridge NHS Trust		18/10/2017	A Serious Incident Report was not triggered because the Trust was not notified of the death and had no process to review externally reported deaths, which will be altered to recommend a weekly review of externally reported deaths; The complication was missing because it was exceptionally rare, but ongoing investigation with include clear guidelines for escalation; Circulated standards expected when making radiology requests; All trusts are required to collate and publish quarterly information in accordance with National Guidance on Learning from Deaths
				Poor patient management	Care Quality Commission		8/12/2017	Implemented an enhanced programme of review with the trust; Carried out a focused inspection;

2019-0239	33	F	Accident involving tiger attack	1. Firearms not held at Hamerton Zoo 2. Lack of clear national guidelines 3. Absence of air-lock type double keeper gates to the tiger paddock 4. Working hours for keepers working with tigers	The Health and Safety Executive	6/9/2019	N/A	
					Cambridgeshire Constabulary		N/A	
					Sphere Risk & Safety Management Ltd		N/A	
					Hamerton Zoological Park		N/A	
					The Local Government Association		N/A	
					Department of the Environment, Food and Rural Affairs		19/12/2019	Creating a robust set of standards with clear obligations on zoos and the zoo inspection reporting process
2019-0311	2	F	Small intestinal infarction	1. Training for staff of 111 for recognising and interpreting signs and symptoms in children and infants 2. Availability of a paediatric specialist clinician to review cases 3. Advise callers to call an ambulance if in doubt	Public Health England	19/11/2019	N/A	
					NHS 111		N/A	
					Herts Urgent Care Limited		N/A	

2021-0058	19	F	Anorexia nervosa contributed to by neglect	1. Inadequate training 2. Lack of formally commissioned service level agreement for robust and effective monitoring of anorexia patients 3. Lack of data regarding prevalence of eating disorders 4. Impact of the COVID-19 pandemic	SoS for Health and Social Care	28/4/2021	28/4/2021	Working with HEE and others for training courses in eating disorders; Committed to ensure a more integrated service across primary and secondary care for those with severe mental illnesses; Published guidance to support models of Adult Eating Disorder care; Additional funding for community mental health care and expanding children's mental health services; Changing waiting times and implementing early intervention services for young people with eating disorders; Conducting a survey in 2022
					NHS England		4/5/2021	New integrated models of primary and community healthcare; Reduced waiting times; Improving commission arrangements for medical monitoring; Improving workforce training for adult eating disorders; Increased funding for mental health services
					Health Education England		30/4/2021	Commissioned learning resources about mental health for medical students and Foundation 1 and 2 doctors; Enhancing mental health education in GP training; Undertaking a project to scope eating disorder training nationally as part of HEE's National Mental Health Programme; Expanding the workforce delivering eating disorder services; Running an e-learning platform including eating disorder training

					General Medical Council		21/4/2021	Created new outcomes for undergraduate education surrounding mental health, nutrition and vulnerable groups; Surveyed medical schools about eating disorder teaching; Creating new training resources; Shared learning across postgraduate specialities; Working with other bodies to fulfil shortage of eating disorder specialists; Reviewing the impact of the pandemic on training
					Academy of Medical Royal Colleges		26/4/2021	Developing shared curricula content and plan to include eating disorders; Contacted Royal College of Psychiatrists to help develop this
2021-0124	50	M	Suicide by drowning	1. The patient did not fit the criteria for any mental health service according to the Norfolk & Suffolk NHS Foundation Trust, leaving him with no care	NHS Norfolk and Waveney CCG	23/6/2021	N/A	
2021-0130	59	M	Pulmonary thrombo-embolism	1. Poor state of cleanliness in prison 2. Missed opportunity for consideration of whether anticoagulation therapy should have been provided due to poor systems, lack of reviews and failure to follow protocoll	Minister of State for Prisons and Probation	25/6/2021	N/A	
					Cambridge University Hospitals NHS Foundation Trust		N/A	

2021-0156	0	F	Severe anaemia	1. No national guidelines for monitoring and treating infants at risk of haemolytic disease of the newborn/DCT positive patients exist. 2. No guidelines for good practice following acute treatment immediately after birth or following discharge	National Institute for Clinical Excellence	12/7/2021	N/A	
					British Association of Perinatal Medicine		N/A	
2021-0184	16, 17	F	1. Suicide by overdose of prescribed medication 2. Suicide by jumping in front of a train	1. Availability of overnight assistance for adolescent mental health patients being cared for at home 2. Involvement of the CCC and the CPFT in complex adolescent mental health cases for sufficient support	Cambridgeshire County Council	23/7/2021	Undated	Creating integrated models of mental health support services; Increased support for more acute mental health needs; Commissioned a CAMHS crisis team; Families are able to request assessments for Direct Payments to fund carers; New policies for day to day duties; Increased training
				1. Reluctance to diagnose "Borderline Personality Disorder" even when it was well-supported 2. Unclear guidance for AWOL patients at Darwin Centre for Young People	Cambridgeshire and Peterborough Foundation Trust		23/7/2021	Commissioned the expansion of First Response Service to include a dedicated CAMHS crisis team working 8am-8pm 5 days a week, a 24/7 advice crisis service and a CAMHS home treatment team operating 9-9 with up to 3 contacts per day in the home, but not yet a 24/7 service.

				1. With regards to the girls' sexual abuse allegation, no follow up between the police forces, clinicians, the parents, or the girls was made to keep the option of provided an account later 2. No guidance was present to police forces on how to communicate with victims of child abuse with mental ill health and unwilling to provide an evidential account at first	National Police Chiefs' Council		13/7/2021	Amended the current Authorised Professional Practice to establish why victims/witnesses may be reluctant to provide a statement and agree on a contact strategy
2021-0185	17	F	Suicide by jumping in front of a train	1. Further mitigating measures should be considered to prevent further fatalities 2. Consider other possible routes of access to the railway line without prior assumptions	British Transport Police	23/7/2021	22/7/2021	Established a trained Fatality Investigation Team for investigate all non-suspicious deaths and conduct post incident scene visits and mitigate against risk
					Network Rail		23/7/2021	Upgrading the fencing to be completed by July 2021, BTP carries out fatality investigations but they have shared guidance within the Anglia Route that a fence check should also be carried out and remedied promptly.

2021-0186	16	F	Suicide by overdose of prescribed medication	Local action has been taken but there is no national guidance for sharing of risk information or medication safety plans with local pharmacies for high-risk adolescent mental health patients.	NHS England	23/7/2021	8/8/2021	Established a working group with the aim of rolling out a national protocol in the next 6 months and following this, ensure digital means like the Summary Care Record are used to their full benefit
					Royal Pharmaceutical Society		1/7/2021	Out-of-scope to take national action but they will campaign for changes and inform pharmacists.
					General Pharmaceutical Council		14/7/2021	Published guidance and advice for prescribers suggesting that prescribing information should be shared. NHS England should take this on a national level.
					The Company Chemists' Association		15/7/2021	Cannot take direct action because they don't operate community pharmacies or set standards. They will raise it at the next meeting and communicate it with the pharmacy network nationally.
2021-0238	47	M	Pulmonary thromboembolism	Risk assessment did not consider risk factors other than mobility and contains no guidance for completion	The Secretary for the Department of Health, Ministerial Correspondence and Public Enquiries Unit, Department for Health and Social Care	7/9/2021	N/A	

2021-0260	23	M	Suicide by sodium nitrate	1. Lack of research, training and guidance for practitioners nationally concerning sodium nitrate/nitrite cases and the potential antidote; 2. Failure to learn from previous cases about the risks associated with sodium nitrate/nitrite	Public Health England	23/9/2021	N/A	
					Royal College of Psychiatrists		N/A	

Demographics of deaths

The median age of death was 33 years old (IQR: 18-51, n=20) and two-thirds (67%) of deaths in Cambridgeshire occured in males. Eight (38%) individuals were reported to have a history of diagnosed mental health issues and a further eight had a physical health issue, although the level of detail varied in each report. Social history was vaguely reported in all cases, but two cases explicitly mentioned that the deceased had a criminal history.

PFDs were submitted by 11 different coroners, which occurred throughout the county (Figure 3). Most (29%, n=6) deaths occured in the City of Cambridge, which can be attributed to the location of the main hospital, Addenbrooke's, where five deaths occured. There were also five deaths in South Cambridgeshire, five in Huntingdonshire, two in the City of Peterborough and Fenland, and one in East Cambridgeshire.

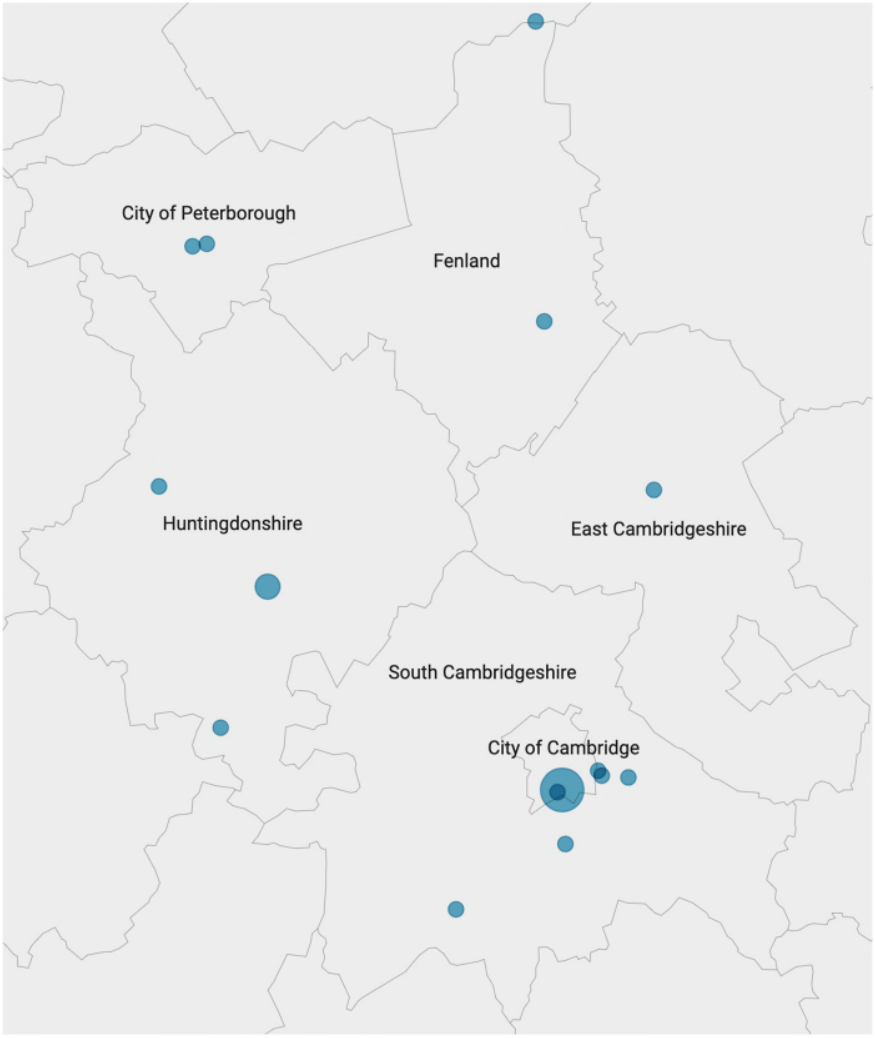

Figure 3: Geographical map of the 21 deaths that occurred in Cambridge and surrounds between July 2013 and September 2021 with larger circles indicating numerous deaths at the same location

Classification of deaths

PFDs are categorised on the Courts and Tribunals Judiciary website, but many of these categories have changed over time (such as suicide only being classified after 2015) and there is a lack of standardisation so this varies between coroners. The 22 PFDs were categorised into 11 categories (Figure 4). The most frequent (27%, n=12) category was hospital deaths related to clinical procedures and medical management, followed by community and healthcare and emergency services related deaths. Though these categorisations are limited in their validity, they highlight that these deaths frequently occurred within the healthcare system.

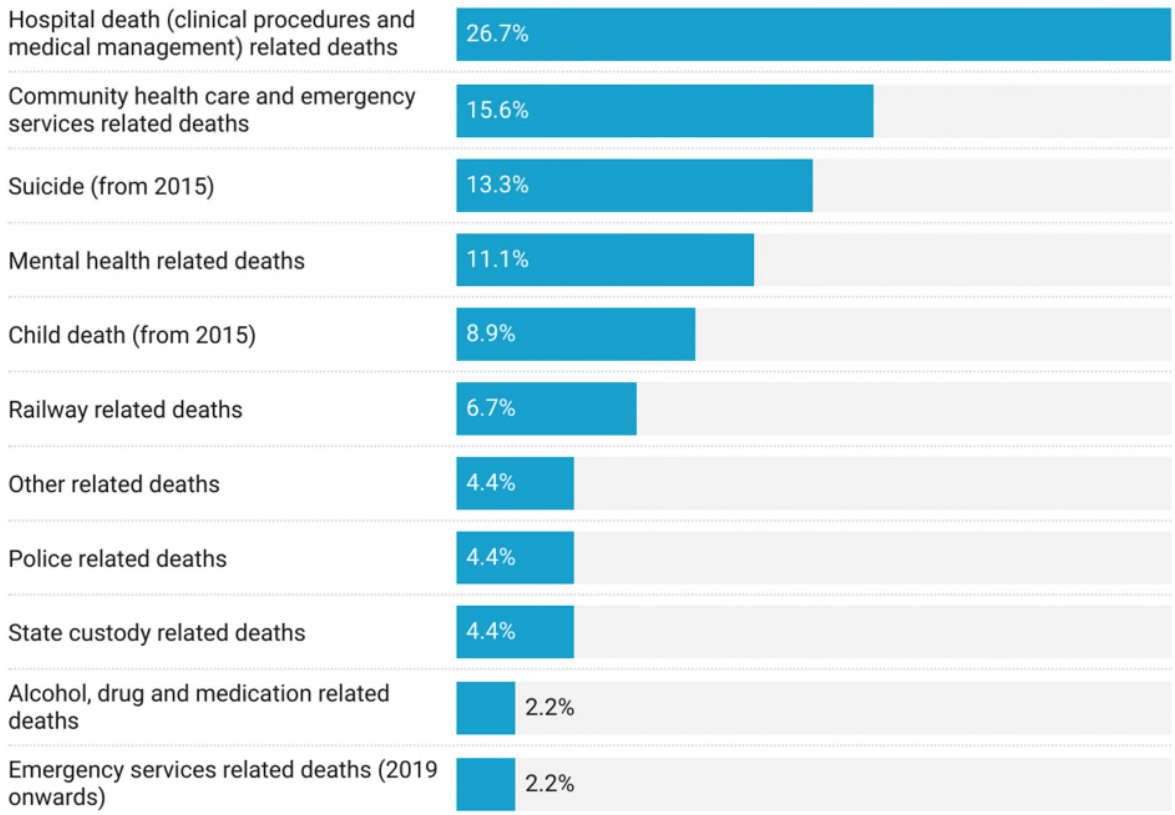

Figure 4: Bar chart summarising the classifications of PFDs on the Courts and Tribunals Judiciary website

The conclusions of coroners' varied (Figure 5), with three PFDs concluding specific medical causes such as 'severe anaemia' or 'small intestinal infarction'. Coroners reported a narrative conclusion and suicide in six PFDs.

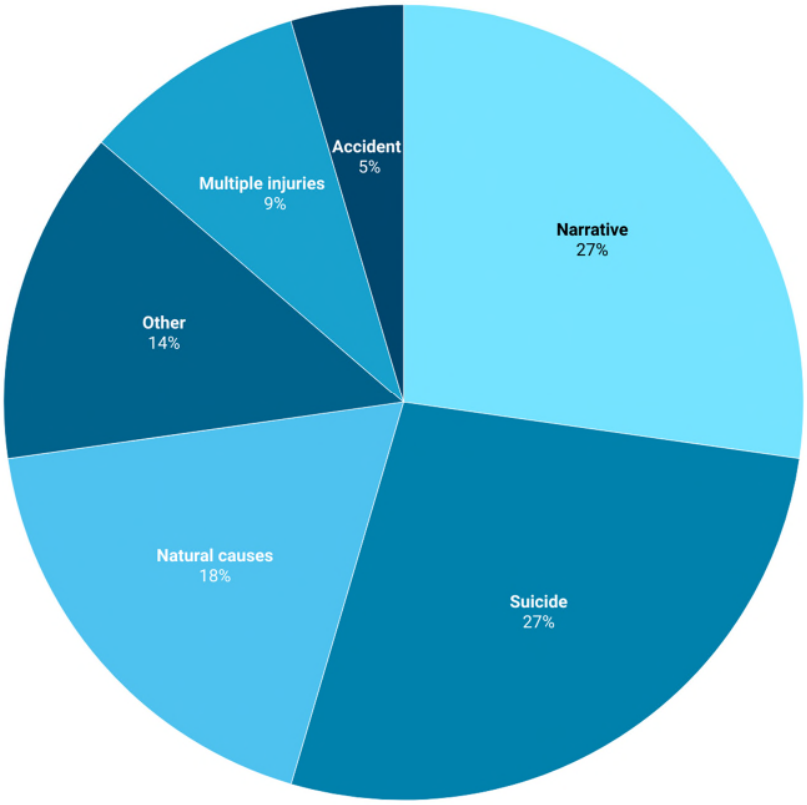

Figure 5: Coroners' conclusions reported for all 22 PFDs. The 'other' category included conclusions that reported specific medical causes of death such as bleeding into the chest, severe anaemia, and small intestinal infarction.

We assigned 34 ICD-10 categories to the 21 deaths (Figure 6). The most common (47%, n=15) cause of death was "external causes", which included suicides, deaths owing to neglect or accidents, followed by "mental and behavioural disorders", such as borderline personality disorder or anorexia. There was significant overlap between the top two causes of death with seven deaths having both classifications. The majority of the other deaths were due to other natural or other internal causes of death, principally those affecting the circulatory system or the nervous system. Three deaths attributed to internal causes were also exacerbated by external causes, such as a fall, neglect, or a misplaced ventilation tube.

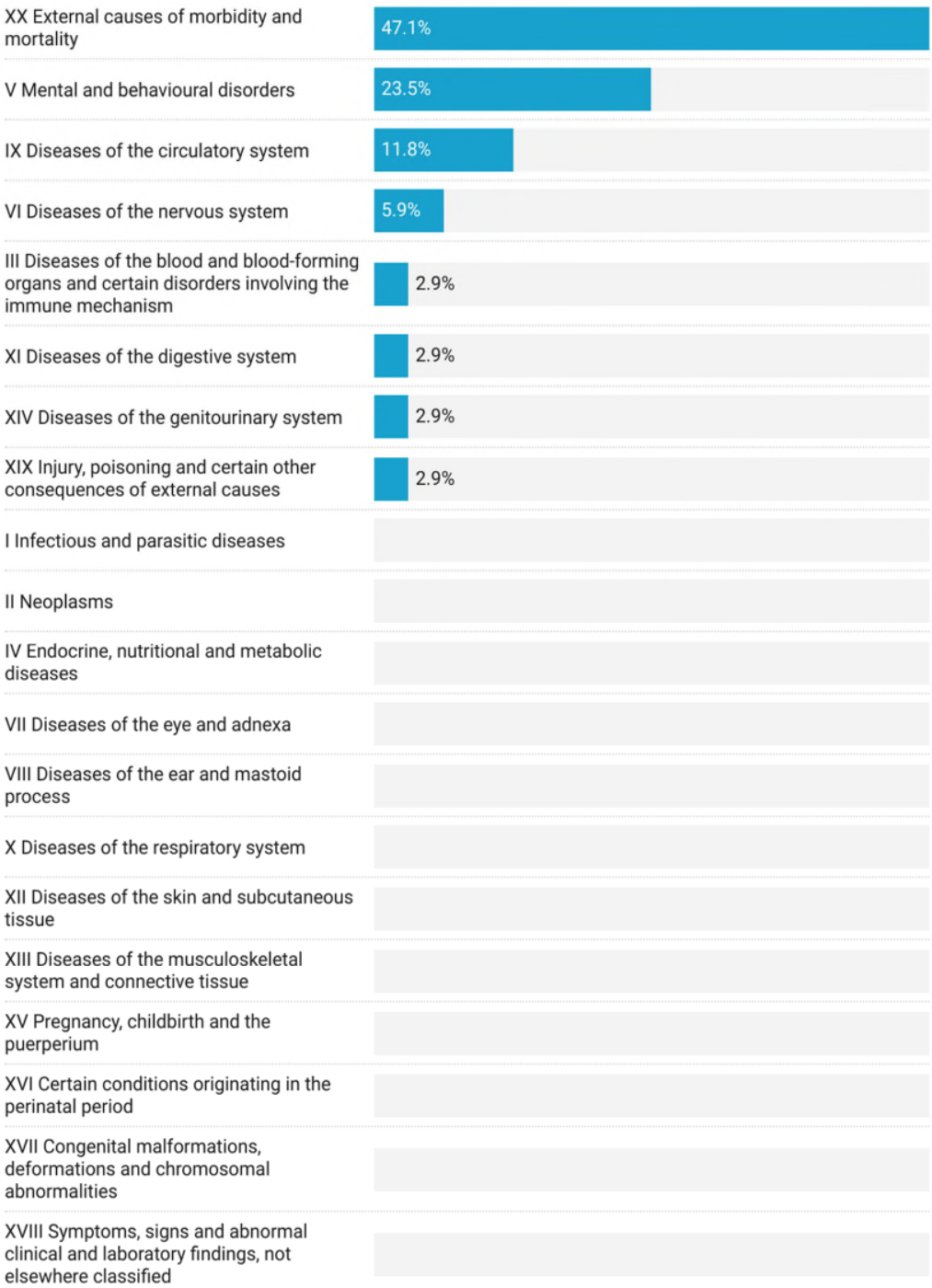

Figure 6: Classification of the causes of death based on the ICD-10 categories for the 21 deaths

Concerns raised by coroners in Prevention of Future Deaths reports

We identified 61 individual concerns raised by the 11 coroners in 22 PFDs, which were classified into five major themes (Figure 6) and 19 minor themes (Figure 7). The concerns were spread fairly evenly across these five major themes, ranging from 25% of concerns identified as education and training issues, 21% as safety issues, 20% as communication issues, 18% as resource issues and 16% as a failure to carry out necessary tasks.

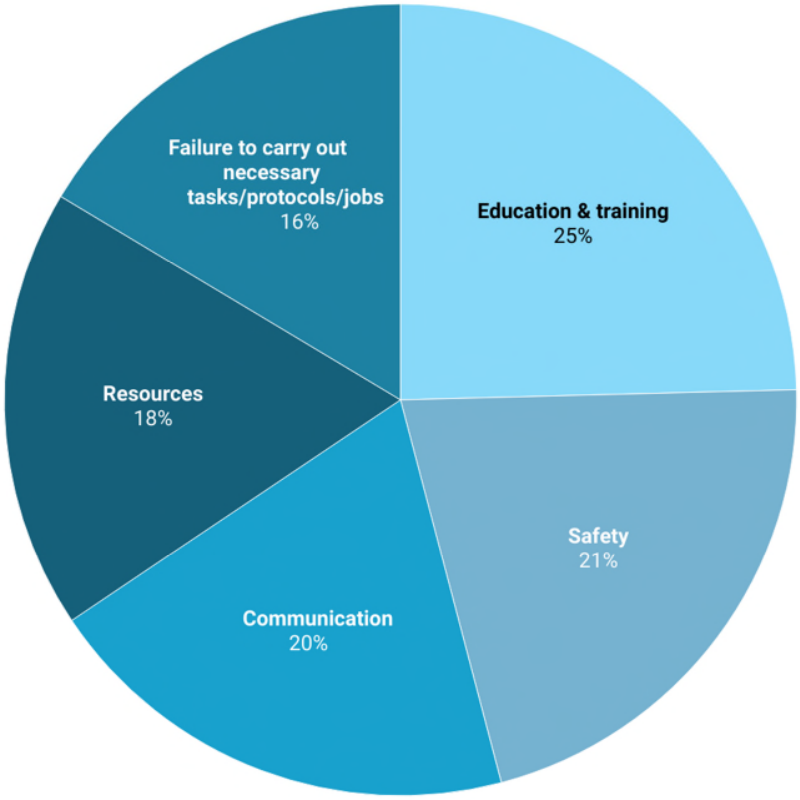

Figure 7: Frequency of major themes identified in the 61 concerns across 22 PFDs

Amongst the minor themes (Figure 8), the most frequent (41%, n=8) concern was a lack of guidelines, with half of these PFDs (n=4) related to mental health. This was followed by concerns of inadequate training (32%), occurring in deaths due to external causes (n=4), including suicide, neglect and a misplaced ventilation tube. Coroners also frequently raised concerns about failure to appreciate risks, failure in assessment of a patient, and poor systems.

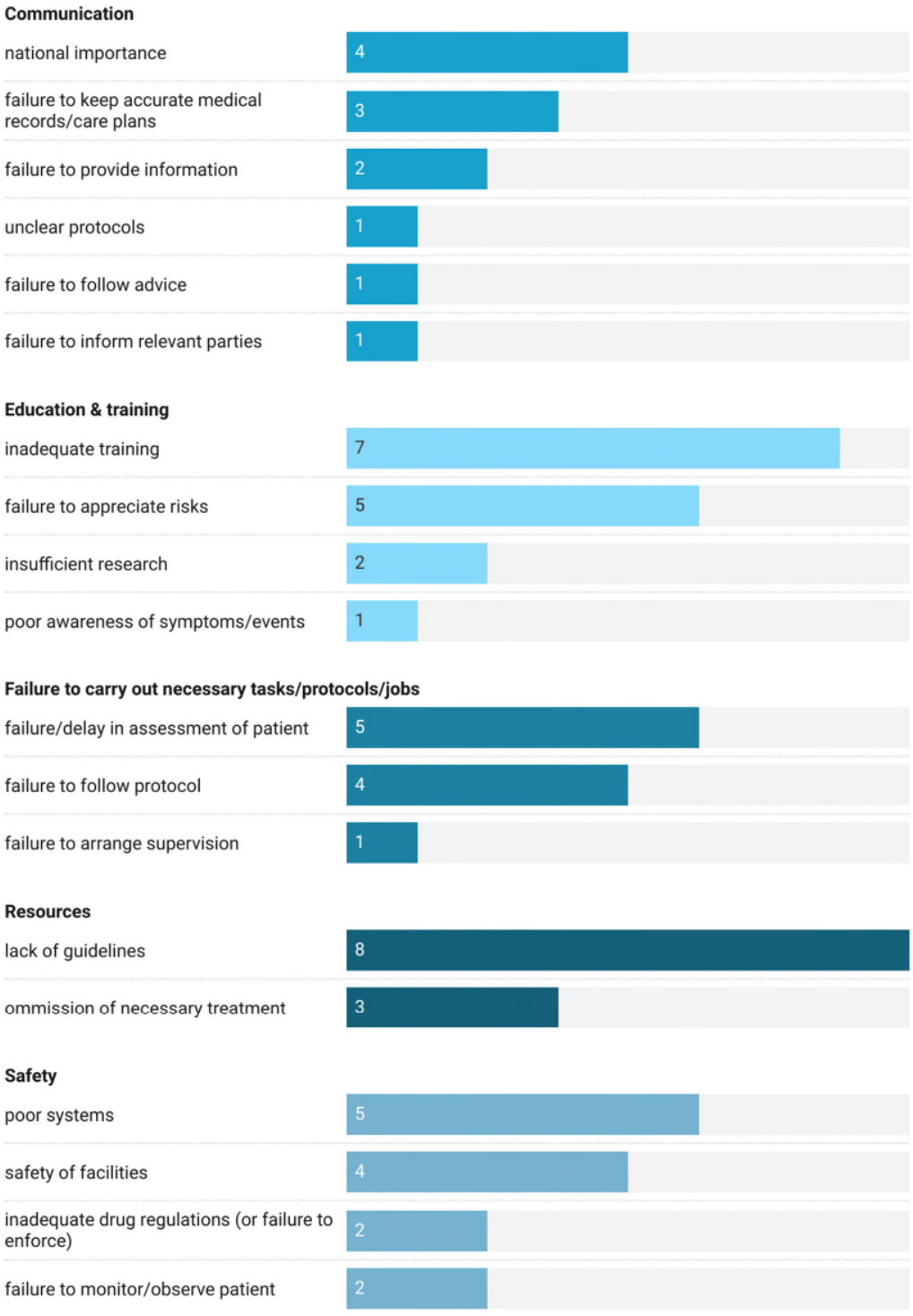

Figure 8: Bar chart showing the frequency of minor themes identified in the 61 concerns across 22 PFDs

1: Lack of guidelines for clinicians in high-risk substance abuse circumstances

In two cases (9%), the coroners identified that a lack of guidelines in high-risk mental health situations related to substances had led to two suicides. Despite the awareness that these individuals were more likely to self-harm through substance abuse, there was a lack of guidelines in place to take appropriate action. As a result, these systemic issues led to a lack of intervention or allowed the individuals to gain access to the means of suicide. Considering that hospitalisation rates due to self-harm in Cambridgeshire are rising more rapidly than national levels[2], addressing where mental health services can be improved to prevent harms and future deaths is paramount. Reducing access to means of suicide is a key priority of Cambridgeshire's Suicide Prevention Strategy[5], yet their recommendations principally focus on reducing suicide resulting from multiple injuries rather than from substances. Though these cases differ in their circumstances, they highlight weaknesses in the system where the potential risks and consequences are significant and can be mitigated against.

Whilst safety care plans can be an effective method of minimising the access to the means of suicide, this case demonstrates how poor communication can hinder these efforts.

> **Case Report 1 (2021-0186)**
> *A 16-year-old girl was diagnosed with borderline personality disorder, resulting in a high risk of self-harm and suicide. To prevent harm, a safety plan was in place for her parents to control her psychiatric medication. However, the girl was able to collect her prescription from her local pharmacy and later overdosed. The coroner highlighted that no national guidelines currently exist to encourage the sharing of risk information or safety plans with pharmacies. Locally, the Cambridgeshire and Peterborough Foundation Trust's Child and Adolescent Mental Health Service has introduced a guideline where pharmacies that are used regularly by adolescent patients can be advised of care plans and risk. They have also incorporated this as part of mandatory training for CAMHS prescribing staff.*

This case highlights the importance of creating robust guidelines that facilitate communication between GPs and pharmacies. Although the three pharmaceutical bodies (The Royal Pharmaceutical Society, The General Pharmaceutical Council and The Company Chemists' Association) have responded and shown support for a national initiative, they have stated that it is only within the NHS' scope. However, the NHS have not yet responded.

Though the above case concerns guidelines surrounding access to prescription drugs, guidance is also lacking for clinicians regarding readily available toxic substances, such as sodium nitrate.

> **Case Report 2 (2021-0260)**
>
> *A 23-year-old male with depression committed suicide by ingesting sodium nitrate. He had expressed this intention to the Cambridgeshire and Peterborough NHS Foundation Mental Health Trust, but they had not informed his family. The coroner noted that there is no national guidance for psychiatrists and mental health practitioners about the potential risks when dealing with sodium nitrate/nitrite cases. Equally, there are no guidelines for clinicians about the appropriate use of the antidote "methylene blue", which could further prevent deaths.*

As of this report, no responses are yet available publicly but this PFD has been submitted very recently. This case emphasises that while common forms of suicide covered by the Suicide

[5] Peterborough City Council, 2017: https://cambridgeshireinsight.org.uk/wp-content/uploads/2019/04/Suicide-prevention-strategy-2017-2020-v8.pdf

Prevention Plan are important, considering less common but easily accessible forms of suicide are crucial to further reducing harms.

2: Failure in the assessment of patients due to inadequate training in emergency situations

In three cases (14%), coroners noted that individuals who should have had urgent care did not, partly due to inadequate training of staff. In these cases, emergency clinicians (ambulance crews and NHS 111 advisers) did not correctly recognise the symptoms or failed to understand the severity and therefore take appropriate action for treatment.

Firstly, case report 1 demonstrates how inadequate training in emergency situations has led to an incorrect assessment and failing to understand the severity of the patient's symptoms. The assessment by paramedics on-site is crucial to determine whether a patient can be treated within the community through long-term care plans or whether they need urgent, hospital care. To be able to triage patients effectively and minimise harm, emergency clinicians need to be well-trained to recognise and respond to symptoms.

> **Case Report 1 (2015-0101)**
>
> *A man aged 65 experienced chest pain and an ambulance was called. The paramedics took readings from ECGs and blood pressure. They incorrectly assessed these to suggest that the patient did not require hospital treatment. However, the patient's condition deteriorated and he died the following morning. The coroner suggests that training using the Paramedic Pathfinder Programme, a flowchart of symptoms used to determine whether a patient needs to be transferred to hospital, is used.*

In this case, the emergency responders failed to understand the severity of the patient's condition and therefore did not respond appropriately. To improve this, the Paramedic Pathfinder Programme, a solid framework that has proved successful in other regions to differentiate between patients needing urgent care and those who require community care may be beneficial. A response from the East of England Ambulance NHS Trust has stated that an implementation of the Paramedic Pathfinder Programme is being discussed, but further evidence of this being implemented is not clear.

Secondly, emergency clinicians may require further training beyond the first assessment on-site. In the following case, the patient was identified as requiring specialist care, but the same ambulance team which brought him to the hospital attended and did not appear to have appropriate training for his condition.

> **Case Report 2 (2014-0159)**
>
> *A man aged 33 experienced chest pain and attended a health centre on his way home where he collapsed. An ambulance was called and he was taken to a general hospital (Bedford Hospital). His diagnosis of an ST elevation myocardial infarction meant he was being transferred to Papworth Hospital for specialist treatment by the same ambulance team. However, he died en route. The coroner suggests that improved training of emergency care clinicians (Emergency Care Assistants, Emergency Medical Technicians and Paramedics) and ensuring that clinicians with the appropriate training are mandated to attend transfers may have prevented this.*

This case highlights the importance of proper training, particularly in situations where the patient has been identified as requiring specialist care. Moreover, additional training to identify whether a patient requires specialist care immediately may have further prevented these delays. However, this report did not receive any responses detailing what action has been taken to prevent future deaths.

Lastly, failing to recognise the severity of symptoms and appropriately respond has also occurred within NHS 111. The below case demonstrates how insufficient training of symptoms presented by children contributed to the death.

> **Case Report 3 (2014-0311)**
>
> *A mother of a 2 year old child contacted NHS 111 to seek advice for her daughter's symptoms of blue lips and breathlessness. The Health Assistant taking the call did not appreciate the significance of the symptoms and passed the call onto the Clinical Adviser. The Clinical Adviser suggested that an ambulance was not required and passed the call to an out-of-hours nurse who also did not suggest an ambulance. The child had a small bowel infarction from an untreated small intestinal volvulus, which could have been treated.*

According to evidence at this case's inquest, approximately 20% of calls to 111 regard sick children, however the set of prescribed pathway questions used to handle calls may be ineffective for young children who cannot articulate their symptoms. Further training for call handlers and advisers to recognise how symptoms present in young children and take further precautions when in doubt to prevent inaccurate assessment. As of this report, no responses are available publicly.

Responses to PFDs and regulation compliance

The 22 PFDs were sent to 46 unique individuals or bodies (Table 2). They were most frequently sent to governmental bodies associated with healthcare, such as units within the Department of Health and Social Care, NHS Trusts, NHS England and local GPs and hospitals. Based on the available data, there was poor compliance to regulation 29 of The Coroners (Investigations) Regulation 2013, requiring a response within 56 days.

25 responses were present on the Courts and Tribunals Judiciary website, resulting in a compliance rate of only 45%. However, this low compliance rate may be partly due to responses being received but not uploaded. For instance, a follow-up response from the Department of the Environment, Food and Rural affairs for one case (2019-0239) states that a response was previously sent, yet this is not present on the judiciary website. Thus, ensuring responses are uploaded may be a point for future consideration, since they are crucial for understanding what action has been taken and what is still to be done.

Professional bodies, such as the Royal Pharmaceutical Society and Royal College of Anaesthetists, had the best response rate, responding to 77.8% of PFDs received. Private companies had the poorest response rates, with only one response received resulting in a response rate of 14.3%.

Table 2: Number of responses received and the compliance rate of the various types of addressees.

Addressee	No of PFDs Sent	No of Responses	Response Rate
Government (Health)	**28**	**12**	**43%**
Department of Health and Social Care	8	3	38%
NHS Trust	5	3	60%
NHS England	5	4	80%
NHS Foundation Trust	3	1	33%
Local GP Practice	2	0	0%
Hospital	2	1	50%
Clinical Commissioning Group	2	0	0%
NHS 111	1	0	0%
Professional Bodies	**9**	**7**	**78%**
Medical Specialist Body	4	2	50%
Pharmaceutical Body	3	3	100%
General Medical Council	1	1	100%
Academy of Medical Royal Colleges	1	1	100%
Police	**5**	**3**	**60%**
National Police Chiefs' Council	2	1	50%
Constabulary	2	1	50%

British Transport Police	1	1	100%
Governmental (Other)	**6**	**2**	**33%**
Justice	2	0	0%
The Local Government Association	1	0	0%
The Health and Safety Executive (Department for Work and Pensions)	1	0	0%
Local Council	1	1	100%
Department of the Environment, Food and Rural Affairs	1	1	100%
Private Companies	**7**	**1**	**14%**
Network Rail	2	1	50%
Law	2	0	0%
Medical	1	0	0%
Health and Safety Consultant	1	0	0%
Hamerton Zoological Park	1	0	0%
Total	**55**	**25**	**45%**

Limitations

Though the PFDs offer a rich source of data and many go into depth about contextual information, many lack crucial data such as social history or mental health background. Consequently, this can make it difficult to determine how these deaths can be prevented. The vast majority of PFDs in Cambridge contained data on age and sex, two PFDs (9%) were missing age data. Moreover, many PFDs are reporting deaths that have occurred many years prior, delaying the important policy changes that may be required to further prevent the deaths. In 2019, the average time between the date of death and the date of report was 3.1 years. However, this may just be due to coroners submitting reports for past deaths that are now recognised as preventable, which may still raise valid and important concerns for changes.

Moreover, it was found that some responses were missing from the Courts and Tribunals Judiciary website. For instance, one response from the Department of the Environment, Food and Rural Affairs alluded to a previous response submitted prior to the deadline but was not present on the website. Thus, the low compliance rate suggested in this report may not be due to the addressees' lack of responses but due to not being uploaded.

Conclusions

Though Cambridgeshire is amongst the least deprived counties nationally, it has large health inequalities and higher rates of hospital admissions for alcohol-related conditions, serious road injuries and self-harm. PFDs provide a rich source of data, pinpointing deficiencies in policy where changes can be made to prevent future harms and deaths. In Cambridgeshire, these deaths frequently resulted from systemic issues within the healthcare system, such as a lack of guidelines for clinicians regarding high-risk substance abuse patients and failures in the assessments of patients in emergency situations due to inadequate training. Further efforts to ensure responses are received and published is crucial to determine what actions have been taken and what is still to be done.

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