QCMHR
Queensland Centre for Mental Health Research

Strong minds, safe sites: enhancing mental and physical wellbeing in construction

A MATES in Construction (QLD & NT) Ltd and Queensland Mental Health Commission funded project.

This report was commissioned by MATES in Construction (QLD & NT) Ltd and the Queensland Mental Health Commission. For further information, please contact Associate Professor Carla Meurk, Principal Researcher, Queensland Centre for Mental Health Research, The University of Queensland on Carla.Meurk@health.qld.gov.au

Suggested citation: Meurk, C., Wittenhagen, L., Lam, M., Doran, C., & Heffernan, E. (2024). Strong minds, safe sites: enhancing mental and physical wellbeing in construction. Brisbane: Queensland Centre for Mental Health Research.

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August 2024

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MATES in Construction™

Queensland Mental Health Commission

Acknowledgements

In the spirit of reconciliation, the Queensland Centre for Mental Health Research (QCMHR) respectfully acknowledges the Traditional Owners as the custodians of the lands in which QCMHR operates. We pay our respects to their Elders, past and present, and extend that respect to Aboriginal and Torres Strait Islander peoples today.

We acknowledge people in our communities with lived experience of mental health, drug and alcohol concerns, and those who care for them. We respect and value their generous contributions to our research.

We acknowledge the role of construction industry workers to Queensland's economy and community and those with lived and living experience of mental health, alcohol and other drug problems, and suicide, their families and carers.

The authors would like to acknowledge Data Linkage Queensland for undertaking linkage activities, and BUSSQ, BERT, MATES in Construction (QLD & NT) Ltd, WorkCover Queensland and the Queensland Ambulance Service for facilitating data extraction for this project. We thank Jorgen Gullestrup, Dr Laura Cox, Dr Damian Santomauro, Dr Ruth Barker and Professor Marco Reale for their contribution of expertise for conceptualisation and/or analysis. The authors also give thanks to Lucretia Ackfield, Laura Corcoran and Liz Christiansen for editorial assistance, project management and visual design.

The study was funded by the Queensland Mental Health Commission and MATES in Construction (QLD & NT) Ltd. Assoc Prof Carla Meurk, Dr Michael Lam and Prof Ed Heffernan receive salary support from Queensland Health. The views expressed in this publication are not necessarily those of the above-named organisations or individuals, and any errors of omission or commission are the responsibility of the authors.

Content warning

The findings contained in the report relate to topics of distress and suicidality. Deaths and characteristics relating to deaths that occurred over this period are reported. We pay our respects to those who died and their families, friends and loved ones. Behind every data point is a person whose experiences cannot be fully encapsulated in findings reported. Efforts have been taken to ensure that individuals whose data is contained in the report do not have their identities inadvertently revealed. Our intent in presenting these findings is to enhance systemic responses in a way that benefits the health and wellbeing of construction industry workers now and in the future.

Executive Summary

The *Strong minds, safe sites: enhancing mental and physical wellbeing in construction* report focuses on distress among Queensland construction industry workers, its drivers, impacts and opportunities for connection with support services. It highlights key findings from a study conducted by researchers from the Queensland Centre for Mental Health Research, in collaboration with construction industry organisations, which aims to improve systemic caring responses for people in the construction industry who experience distress.

Research approach

This study aimed to:

1. Determine the prevalence of distress experienced by construction industry workers
2. Detail their health service use prior to and following a distress-related interaction with a construction industry organisation
3. Examine demographics, health characteristics and outcomes (including deaths) of people who had a distress-related interaction with a construction industry organisation
4. Identify opportunities for connection and help-offering for people experiencing distress.

All workers who had a distress-related interaction with one of four major organisations in the construction industry (MATES in Construction (QLD & NT) Ltd, BUSSQ, BERT or WorkCover Queensland) in Queensland from 1 January 2018 to 31 December 2020 (inclusive) were identified and this data was linked to Queensland Health administrative datasets from 1 January 2017 to 31 December 2021 (inclusive).

What is distress?

The definition of distress used in this study was co-designed during an earlier phase of research in close consultation with the construction industry and other stakeholders, including people with lived experiences of distress and suicidality.

> Distress is "an emotional state in which individuals feel that they are not in control, overwhelmed, or are unable to cope" (Meurk & Wittenhagen, 2021; Wittenhagen et al., 2024).

For the purposes of this report, all distress-related interactions occurred with one of the four construction organisations, unless otherwise specified, and related to:

> issues of coping, alcohol or drug related distress, psychological distress, including mental health problems and suicidality, a need for compassionate support, relationship issues, financial hardship, and other reasons meeting the definition of distress as defined above.

An interaction was counted each time someone disclosed they were experiencing distress-related issues. Note, they may not have requested assistance to resolve these issues.

The findings

Frequency and demographics

A total of 10,548 people had a distress-related interaction between 1 January 2018 and 31 December 2020 (inclusive). This equates to more than nine people per day or 4.4% of workers in Queensland's construction industry.

People experiencing distress were predominately male (94.4%) with a median age of 40 years, and 6.5% of the total group had an Aboriginal and/or Torres Strait Islander background.

Health services interactions

Most people who had a distress-related interaction also sought support from an emergency department (71.8%) and/or were admitted to hospital (61.8%). A total of 39.4% were attended by the Queensland Ambulance Service (QAS) while 14% were assisted by a public mental health service.

Around half (49.7%) of the group who advised a construction organisation that they were experiencing distress also received assistance from a health service for an injury. Of these, around two-thirds (64%) had their first injury presentation before their first distress-related interaction.

There was a steep increase in injury-related presentations in the 14 days before a distress-related interaction with a construction industry organisation.

There was a notable peak in injury-related presentations to emergency departments and hospitals early in the week (Monday and Tuesday), and during the mid-morning and midday periods (approximately 11am to 1pm).

A total of 6% of people who had an injury-related hospital admission[1] had a presentation that was coded as intentional self-harm, and higher rates of mental health diagnoses were evident for those admissions.

The overall contact rates with health services increased from an average of 123 presentations per day before a distress-related interaction to 137 per presentations per day afterwards. This amounts to an approximate 10% increase.

Mental health profiles

Substance use, trauma and stressor, and depressive disorders were the most common diagnoses for people who had contact with a public mental health service and received a mental health diagnosis.

A total of 14% had interactions with mental health services and most of these involved acute care services, including police, ambulance and mental health co-responder services.

Loss of life

One percent (106) of the overall group died between 1 January 2018 and 31 December 2021. The top five causes of death were (in order, highest to lowest) heart disease, cancer, suspected suicide, respiratory disease and alcohol-related liver disease. Suspected suicide deaths accounted for 24.5% of deaths during this period.

On average, approximately 12 to 18 months elapsed between the first distress-related interaction, and hospitalisation due to intentional self-harm or death due to suspected suicide.

The average length of time between the last distress-related interaction with a construction organisation or last health service contact, and a suspected suicide death, ranged between six months and 10 days respectively.

Implications

Differences between distress and a mental health diagnosis

Research findings suggest people experiencing distress will not necessarily meet the diagnostic criteria for a mental health disorder or be experiencing a mental health crisis. Additionally, construction workers will frequently disclose distress to organisations outside the mainstream health system, but a minority of these people will have contact with a mental health service.

[1] Based on admissions to a Queensland Hospital only. This does not include injury or poisoning-related presentations to emergency departments.

Implications for service delivery

People in distress did not generally access public mental health services or mental health support through emergency departments or ambulance services unless they were experiencing a mental health crisis. It is possible that people accessed federally funded mental health services such as general practitioners, psychiatrists or psychologists, but confirming this information would require additional investigation with data linkages to the Medicare Benefits Schedule and Pharmaceutical Benefits Scheme. However, the findings highlight the importance of non-clinical services that can provide caring and practical support for people experiencing distress.

The relationship between injuries and distress

A high proportion (nearly 50%) of people who experienced distress were also treated for an injury in an emergency department or hospital, and injuries occurred both before and after a distress-related interaction. These findings highlight the interconnection of physical and mental health, and the need for holistic responses to improve both physical and mental health and wellbeing.

Opportunities for connection and help-offering

Information about how and when people interact with health services and construction industry organisations can be used to ensure services are delivered at the right place and time. The study identified multiple touch points where support could be offered to mitigate distress and potentially reduce the likelihood of a future injury.

The way forward

Several opportunities to improve responses to distress, and enhance help-offering were identified during this study.

1. **A partnership approach** between health services and MATES in Construction (QLD & NT) Ltd could help ensure distress is identified earlier and more effectively mitigated, or prevented. This approach should involve close collaboration with emergency departments as they are accessed by most people. Due to the link between injuries and distress, this could also have secondary benefits and reduce injuries overall.
2. **Enhancing connectivity** across the construction industry could drive more innovative and integrated ways to recognise and respond to distress. Comprehensive initiatives that assist employees to identify distress, and facilitate sensitive and appropriate engagement, disclosure and support would further strengthen these approaches.

3. **Providing help at the right time and place** could improve outcomes for people experiencing distress. This could include targeted early interventions when workers attend emergency departments for injuries or initially identify distress with a construction industry organisation. Extending follow-up processes by 12 to 24 months could also help ensure people experiencing worsening distress receive additional and tailored support.
4. **Investigating the links between distress and injury prevention initiatives** could lead to improved workplace health and safety in the construction industry.

Figure 1. Summary of findings

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Acronyms and abbreviations

Acronym / abbreviation	Description
BERT	Building Employees Redundancy Trust
BUSSQ	Building Unions Superannuation Scheme Queensland
CIMHA	Consumer Integrated Mental Health and Addiction Application
COD URF	Cause of death unit record file
ED	Emergency department
EDC	Emergency Data Collection
QAS	Queensland Ambulance Service
QHAPDC	Queensland Hospital Admitted Patient Data Collection
QHNAPDC	Queensland Hospital Non-admitted Patient Data Collection
RBDMs	Registries of Births, Deaths and Marriages

Glossary

For the purposes of this report, the following definitions apply.

Term	Description
Cohort	Construction workers who were identified as having one or more distress-related interaction with any of the construction industry organisations (identified below) from 1 January 2018 to 31 December 2020.
Construction industry organisations	MATES in Construction (QLD & NT) Ltd, Building Employees Redundancy Trust (BERT), Building Unions Superannuation Scheme Queensland (BUSSQ), WorkCover Queensland.
Distress	An emotional state in which individuals feel that they are not in control, overwhelmed, or are unable to cope.
Distress-related interactions	Relate to issues of coping, alcohol or drug related distress, psychological distress (including mental health problems and suicidality), a need for compassionate support, relationship issues, financial hardship, and other reasons meeting the definition of distress (see above).
Episode rate	Describes the frequency of distress-related interactions among the cohort.
Health services	Refers to health services predominantly funded and delivered by the Queensland Government.
Interactions	Contact with a construction industry organisation or health service.

Background

Approximately 9% of the Australian workforce is employed within the construction industry, making it the third largest workforce in the country (National Skills Commission; The Department of Education Skills and Employment). Work within the industry is often characterised by variability in the security and frequency of work opportunities, long working hours and the requirement to work in remote locations with varying working conditions, contracts and support across different trades and contractors. The majority of this workforce are male. An estimated 15% are female and a low proportion of this group are involved in trades (CSQ, 2021).

Studies have identified workers in the construction industry are at a heightened risk of suicide (Maheen et al., 2020). However, the gap in suicides between males working in construction and those employed elsewhere appears to have narrowed over the past 20 years and this indicates prevention strategies within the sector may have improved outcomes (Maheen et al., 2020).

Several issues impact people who die by suicide and are employed in the construction industry. These include an inability to obtain steady employment, injury or major illness, and relationship issues (Heller et al., 2007; Milner et al., 2014). However, research has not yet examined the characteristics of people who work in the construction industry and experience distress.

The most appropriate and caring ways to respond to someone in distress are still being identified and developed. There is relatively new interest in addressing distress within the context of suicide prevention, and an increasing focus on providing non-clinical peer-led services. MATES in Construction (QLD & NT) Ltd is at the forefront of these approaches (World Health Organization, 2021).

Systematically enhancing holistic, caring and practical responses to distress requires identification of:

- the most appropriate definition of distress
- key touch points where people identify they are in distress
- the optimal care pathways for people in distress.

Constructing a definition of distress

The project team developed, tested and validated the following definition of distress through extensive consultation with MATES in Construction (QLD & NT) Ltd and other construction industry stakeholders, including those with lived experiences of distress and suicidality.

"Distress is an emotional state in which individuals feel that they are not in control, overwhelmed, or are unable to cope." (Meurk & Wittenhagen, 2021; Wittenhagen et al., 2024).

The types of distress referenced in this report include alcohol or drug related distress, psychological distress, mental health problems and suicidality, relationship issues and financial hardship.

Note, an agreed concept of distress that is contextually and culturally specific for the construction industry has not been previously defined within the suicide prevention sector or elsewhere.

Help-offering outside the health system

Making the most appropriate caring response available to people who need it, when they need it, is a core challenge for people who design, implement and manage elements of complex systems. This is further impacted in the context of responses to distress and suicidality, when a complicated and contested array of medical, practical and psychosocial factors may be at play.

The MATES in Construction (QLD & NT) Ltd model addresses part of this challenge by 'flipping the narrative' from discussing help-seeking, including its barriers and enablers, to emphasising the importance of help-offering (Ross et al., 2019). This reframing highlights the responsibility of every community and workplace to proactively ensure people receive help, feel cared for, and have the practical supports they need, and shifts the burden away from people who may feel overwhelmed, not in control or unable to cope. A help-offering approach asks us to consider the diverse places where people might identify distress and their need for support, including organisations that sit outside the health system.

Pathways

Another way to inform and enhance help-offering is by exploring the systems people traverse when in need of assistance. Administrative datasets provide traces of people's journeys and can be used to inform and evaluate both prevention and response initiatives. Combining a detailed understanding of the distress-related interactions outside the mainstream health system with health-related administrative datasets, can inform targeted and systematic approaches for help-offering.

Aims

This research project included the following aims:

1. To determine the prevalence of distress experienced by construction industry workers
2. To detail their health service use prior to and following a distress-related interaction with a construction industry organisation
3. To examine the demographics, health characteristics and outcomes (including deaths) of people who had a distress-related interaction with a construction industry organisation
4. To identify opportunities for connection and help-offering for people in distress.

Understanding the extent of distress-related interactions among people associated with the construction industry and their use of health services will provide valuable information regarding the need for services. It may also facilitate an evaluation of health service use and demand over time, and contribute to an assessment of the costs and benefits of different service models to reduce distress.

Methods

Ethics and governance

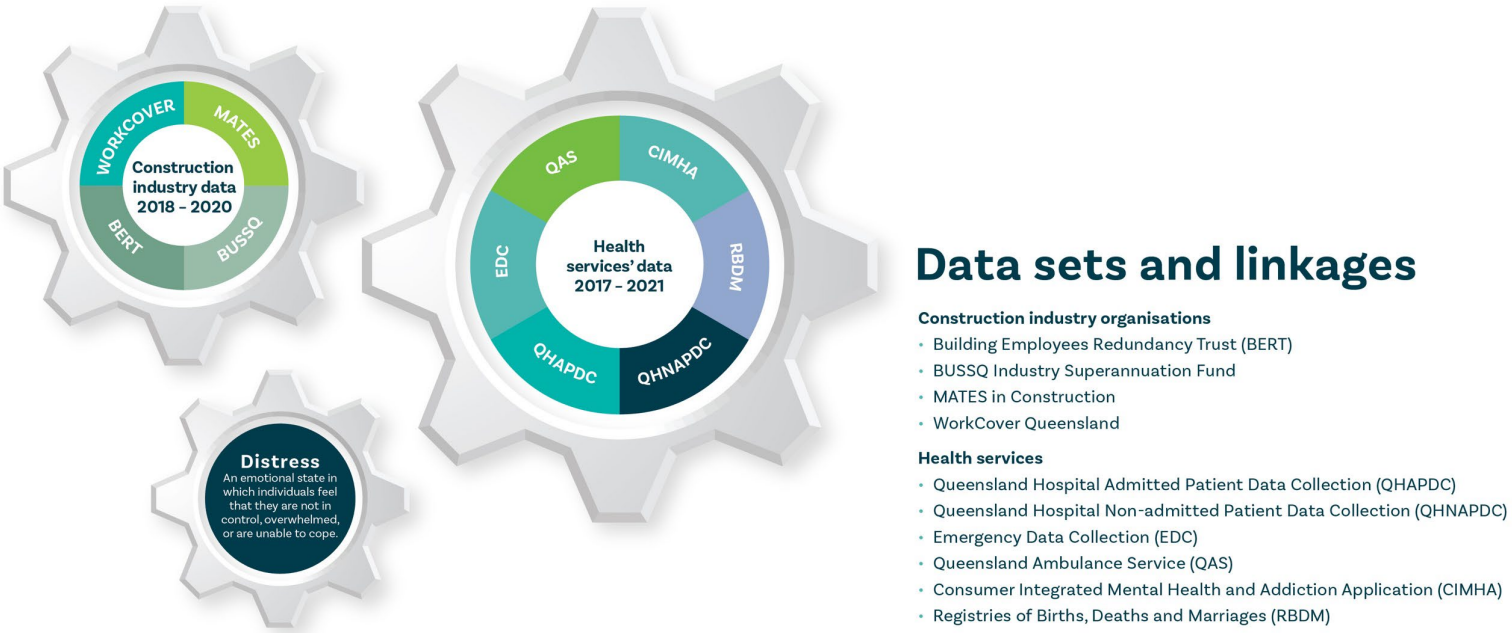
This project is a data-linkage study and was approved by the Human Research Ethics Committee of The University of Queensland (2021/HE001885). A waiver of consent was obtained under Sections 95 and 95a of the *Privacy Act 1988*. Legislative approval to access Queensland Health administrative data was granted via a Public Health Act Approval (21.1885).

Data linkage is the process of combining data from different datasets into a unified repository for analysis. This harnesses the power of routinely collected data to inform questions regarding complex processes. Data linkage is conducted using mathematical and statistical processes and is undertaken in ways that preserve the privacy and anonymity of people whose data is used, namely by adhering to the principle of separation, where content information is managed separately from identifying information to ensure records can be individually linked in a de-identified way.

Setting

This data-linkage study was set in the state of Queensland which had an estimated resident population of about 5.2 million people (as of 31 December 2020). Data from the Queensland Government Statistician's Office indicates the construction industry employed approximately 239,400 individuals in 2020 (https://www.qgso.qld.gov.au/).

Figure 2. Data sets and linkages



Data linkage

Step 1

Anyone who had a distress-related interaction with a construction industry organisation (see list below) from 1 January 2018 to 31 December 2020 (inclusive) was identified using criteria provided by the research team to the organisation.

Step 2

The construction industry organisations sent identifying information about this cohort to a third party to process securely. All individuals were then assigned randomly selected numbers to ensure their information was de-identified.

Step 3

The numbers were provided to the construction industry organisations who gathered relevant data associated with these numbers (employees or members) and supplied this to the research team for analysis.

The numbers were also linked to data from the Queensland Hospital Admitted Patient Data Collection (QHAPDC), Queensland Hospital Non-admitted Patient Data Collection (QHNAPDC), Emergency Data Collection (EDC), Queensland Ambulance Service (QAS) and the Consumer Integrated Mental Health and Addiction Application (CIMHA), as well as the Registries of Births, Deaths and Marriages (RBDMs) Cause of Death unit record file (COD URF). The data was linked over a five-year period (1 January 2017

to 31 December 2021) to enable researchers to understand how people interacted with health services before and following their first distress-related interaction with a construction industry organisation, and their outcomes following the interaction.

Step 4

Researchers collated and integrated all data, and conducted an analysis to identify connections, similarities and differences across the cohort, their interactions with construction industry organisations and health services, and outcomes.

Cohort identification

The cohort was identified through keyword and category searches of industry datasets provided by four construction industry organisations. The organisations are briefly described, as follows:

- MATES in Construction (QLD & NT) Ltd is an industry-backed, research-based, suicide prevention and support program. All people receiving case management were included in the research cohort.
- BERT is the Building Employees Redundancy Trust and provides redundancy payments and benefits to its members. All people who participate in this scheme were eligible for inclusion, subject to meeting the criteria outlined below.
- BUSSQ is a construction industry superannuation fund. All members who were associated with the construction industry were eligible for inclusion, subject to meeting the criteria outlined below.
- WorkCover Queensland is a government-owned insurance provider and provides services across several sectors. All people who contacted WorkCover Queensland and were associated with the construction industry were eligible for inclusion, subject to meeting the criteria outlined below. For simplicity, it is referred to as a "construction industry organisation" in this report.

Records were extracted for people working in the construction industry who had a distress-related interaction with any of the four construction industry organisations between 1 January 2018 and 31 December 2020.

Identifying distress-related interactions: criteria

Data fields, including free-text boxes, were searched for a range of distress-related terms using a method previously developed to identify individuals from free-text data (Meurk et al., 2022). This involved working on iterative data extracts to refine keywords and terms that identified distress and focused on maximising true positive cases. Initial search terms were based on the definition of distress.

For example, “out of his/her/their control”, “overwhelm*”, “distress*”, “unable to cope” and “not coping” (*indicates an allowance for word variations). Specific data fields, terms and keywords were also chosen to identify types of distress, including financial hardship, relationship issues and suicidality. Finally, terms indicating someone had been referred to specific services that assist people in crisis were identified. This search was tailored to the database structure of each participating organisation by closely working with their data teams. The details for people who were identified via this method (i.e. names, ages or dates of birth, addresses, sex) were securely transferred by the organisations to Data Linkage Queensland for linkage to Queensland state-wide datasets (Department of Health, 2021).

Data analysis

Data analysis was conducted in R (R Core Team, 2019) and findings were predominately presented descriptively. These included estimates of prevalence of distress; the episode rate of distress-related interactions; timing, frequency and the type of health service contact; and outcomes.

Denominators used for prevalence estimates and episode rates were calculated based on the estimated size of the construction industry, and extracted from data available from the Queensland Government Statistician’s Office (QGSO, https://www.qgso.qld.gov.au/).

Some data was unavailable for the last six months of the cohort identification period due to variations in data extraction processes across organisations. This missing data was estimated using an autoregressive integrated moving average model to provide prevalence estimates.

Data on health characteristics is primarily reported in relation to International Classification of Diseases (ICD) 10th revision codes. These codes are used within health systems to document health conditions in a standardised way that allows for consistent comparisons across time and settings. Though subject to tailoring across jurisdictions (i.e. Australia uses ICD-10-AM), a general list of codes can be found online (https://icd.who.int/browse10/2019/en). For the purposes of this report, the following ICD-10 codes are particularly relevant:

- Chapter V Mental and behavioural disorders (F00-F99 codes - F coded presentations)
- Chapter XIX Injury, poisoning and certain other consequences of external causes (S00-S99 and T00-T98 codes - S&T coded presentations)
- Chapter XVII Symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified (R00-R99 codes - R coded presentations)
- Chapter XI Diseases of the digestive system (K00-K93 codes - K coded presentations)

- Chapter XX External causes of morbidity and mortality (V01-Y98 codes - V-Y coded presentations)
- Chapter XXI Factors influencing health status and contact with health services (Z00-Z99 codes - Z coded presentations).

F coded presentations include mental illnesses (e.g. depressive or anxiety disorders), personality disorders (e.g. borderline personality disorders), substance use disorders, and neurocognitive and neurodevelopmental disorders (e.g. cognitive impairment, attention deficit hyperactivity disorders, autism spectrum disorders and dementia). For ease of communication, mental health diagnoses have been mapped from ICD codes to those based on the Diagnostic and Statistical Manual 5th edition (American Psychiatric Association).

S&T coded presentations include injuries and poisonings. However, the coding is only used to describe the nature of the injury or poisoning, and does not assign intent. Therefore, these include presentations that were unintentional or intentional in nature (including intentional self-harm or the impacts of an assault), but do not distinguish between these causes. Information regarding cause and intent is provided in the coding of the V-Y codes, as well as X codes, although these are applied inconsistently. Intentional self-harm hospitalisations can be identified based on a combination of codes in one of the linked datasets (QHAPDC). This attribution is based on Australian Institute of Health and Welfare definitions. Specifically, a presentation was determined to be a result of intentional-self harm if the person received a principal diagnosis ICD-10 code in the chapter range of S00-T75 “Injury, poisoning, and certain other consequences of external causes” and the first reported external cause code is in the ICD-10 code range of X60-X84 (intentional self-harm) OR Y87.0 (Australian Institute of Health and Welfare, 2024).

R coded presentations include a range of unrelated codes that are applied when other specific conditions cannot be identified. It includes R45.81 – suicidal ideation, which is only applied if another specific code, including an F code, does not apply.

The K codes include codes related to the digestive system. This incorporates diseases of the liver, including those that may be alcohol related.

V codes are another injury-related categorisation. These are not considered in the overall analysis of injuries presented in this report as they included a relatively small number of additional people and interactions.

Z codes include a range of codes and can be applied to cases where a consultation is not completed (e.g. someone leaves prior to completing an assessment) and another specific diagnosis cannot be applied.

Categorisation of mental health diagnoses and the use of mental health services builds on classifications reported elsewhere (Meurk et al., 2024). For the purposes of this analysis, unless otherwise stated, the term 'mental health related interactions with health services' includes mental health (F-coded or MPDS25) presentations to emergency departments, Queensland hospitals, QAS and Authorised Mental Health Services (public mental health services).

To ensure health service interactions were not artificially inflated due to COVID-19, data was adjusted to count people separately if their only record of a presentation to a health service was for a reason related to COVID-19. This was applied to QHNAPDC and QAS datasets as these were the only datasets where this impact was noticeable. Negligible records due solely to COVID-19 were identified in EDC.

Analysis of health service interactions before and after a distress-related interaction with a construction industry organisation was conducted using a seven-day moving-average model.

Qualifications and limitations

All references to the 'first distress-related interaction' with a construction industry organisation refer to interactions which occurred from 1 January 2018 to 31 December 2020. These people may have contacted the organisations before 2018, but this data was not explored in this study.

Each contributing construction industry organisation records and stores information differently. However, this is unlikely to affect prevalence estimates of distress interactions as these were based on, and limited to, one episode per person per calendar year. However, it does mean that the episode rate is likely an underestimate of the true distress-related episode rate in Queensland.

The participating construction industry organisations have a broad reach in their respective roles. However, a low overlap in interactions across these organisations potentially means the estimates would increase, possibly markedly, if further construction industry organisations were included.

Like construction organisations, each health service datasets records and labels information differently, including in the way it records information that can be used to measure the use of health services. In some cases, a maximum of one interaction with a health service per day per person was counted in the study. This approach prevented duplication of recording in some data sets and avoided inflating the number of interactions someone had with the health system. As a result, resourcing implications of attendances will be underestimated in some cases. For this report, the following interpretations apply when referring to contacts or interactions with a health service:

- EDC, CIMHA and QHNAPDC – record or presentation refers to an interaction with a service (or a provision of service in CIMHA), limited to one interaction per person per day
- QHAPDC – record or presentation refers to an admission
- QAS – record refers to an attendance by one or more units.

The data used for analysis of mental health diagnoses was extracted from CIMHA. This dataset provides a comprehensive repository for data relating to people who access public mental health services in Queensland. However, Australia operates within a federated system of government, with both the states and federal government, as well as the private sector through private health insurance, providing funding to different parts of the health system. In relation to mental health care, this creates a broad division where common mental health conditions such as mild-moderate depressive, anxiety or substance use problems are more likely to be treated by primary care and private specialist service providers, which are subsidised by federal funding, while less prevalent and more serious mental health conditions are more likely to be treated by public mental health services. Consequently, data is likely to show higher accuracy for population prevalence of less common mental illnesses and lower accuracy for population prevalence of more common mental illnesses (Grace et al., 2015). For QAS, MPDS codes should not be considered a definitive diagnosis. MPDS 25 attendances (identified as psychiatric/abnormal behaviour/suicide attempt) represent an undercount of the true number of mental health related presentations attended by the QAS.

Findings relating to injury and poisoning presentations which are identified as being due to intentional self-harm are measured based on variables contained in the QHAPDC dataset only. As outlined below, injury and poisoning presentations were more prevalent in the EDC dataset. This data could not be used to identify intentional self-harm presentations due to limitations in reporting known to impact on the identification of suicidality within emergency department datasets (Sveticic et al., 2020). There is likely to be some similarities between the findings from QHAPDC and EDC in terms of the patterns identified. However, the prevalence of intentional self-harm reported here will be an undercount.

Results

Dataset overview

Table 1 shows the number of people who interacted with a construction industry organisation for distress during the study period. In total, 10,548 individuals had a distress-related interaction between 1 January 2018 and 31 December 2020. This equates to more than nine construction workers per day. The table describes the cohort and the organisations where people had their first (or any) distress-related interaction. Approximately 3% of people had a distress-related interaction with two or more construction industry organisations.

Table 1 Cohort dataset overview.

Construction industry organisation	People, first interaction for distress (n)	People, any interactions (n)
BERT	207	255
BUSSQ	6,530	6,718
MATES	1,185	1,245
WorkCover Queensland	2,626	2,668
Total unique	**10,548**	**10,886**

Table 2 provides an overview of the cohort selection process which was based on field codes or keywords. Reasons for inclusion included issues of coping, alcohol or drug related distress, psychological distress (including mental health problems and suicidality), a need for compassionate support, relationship issues or financial hardship.

Table 2 Reason for inclusion in cohort.

Inclusion criteria[1]	BERT[2]	WorkCover Queensland[2]	BUSSQ[2]
Issues with coping identified	8	1,129	
Alcohol or drug-related	7	440	
Psychologically related, including mental health and suicidality	29	614	4,624
Relationship issues identified	25	502	
Compassionate grounds	-	-	544
Financial hardship identified	176	-	1,641
Other	21	7	NA[3]

[1] '-' indicates the word or field was not used as part of the search criteria in that organisation.

[2] Counts represent number of people with the field or keyword identified with their case. People can have multiple keywords. To preserve privacy in relation to free text data, BUSSQ keyword searching was not disaggregated by thematic area.

[3] Counts included in 4,624 figure above.

Prevalence and episode rate

Table 3 shows the 12-month prevalence rate of distress-related interactions between people in the construction industry and the four organisations. This prevalence ranged between 1.72% and 1.83% during the period examined. The table shows a peak in 2019 with stable rates either side.

Table 3 Twelve-month prevalence.

Year	Number of people who had a distress-related interaction[3]	Number of construction workers in Queensland[1]	% of construction workers in Queensland who had a distress-related interaction with construction industry organisations	95% Confidence interval
2018	4,169	239,400	1.74%	1.69 - 1.79
2019	4,329	236,600	1.83%	1.78 - 1.88
2020	4,232[2]	246,300	1.72%	1.67 - 1.77

[1] Population number sourced from the Queensland Government Statistician's Office.

[2] Adjusted to account for missing data.

[3] Individuals are counted a maximum of once per year.

Table 4 shows the three-year pooled prevalence of distress-related interactions divided by the smallest and largest population denominator over the period examined. It shows between 4.38% and 4.56% of the cohort had at least one distress-related interaction with a construction industry organisation.

Table 4 Three-year pooled prevalence.

Rate estimation	Number of people who had a distress-related interaction over a three-year period[1]	Number of construction workers in Queensland	% of construction workers in Queensland who had a distress-related interaction with construction industry organisations	95% confidence interval
Maximum	10,796[2]	236,600	4.56%	4.48 - 4.65
Minimum	10,796[2]	246,300	4.38%	4.3 - 4.46

[1] Population number sourced from the Queensland Government Statistician's Office.

[2] Adjusted to account for missing data.

Table 5 shows the rate of interactions with each organisation. Interactions were counted as a maximum of one per day per organisation, regardless of the number of interactions within a single day. Consistent with the above-mentioned rates in Table 3, the episode rate shows a spike of interactions in 2019 with relative stability in 2018 and 2020.

Table 5 Twelve-month episode rate.

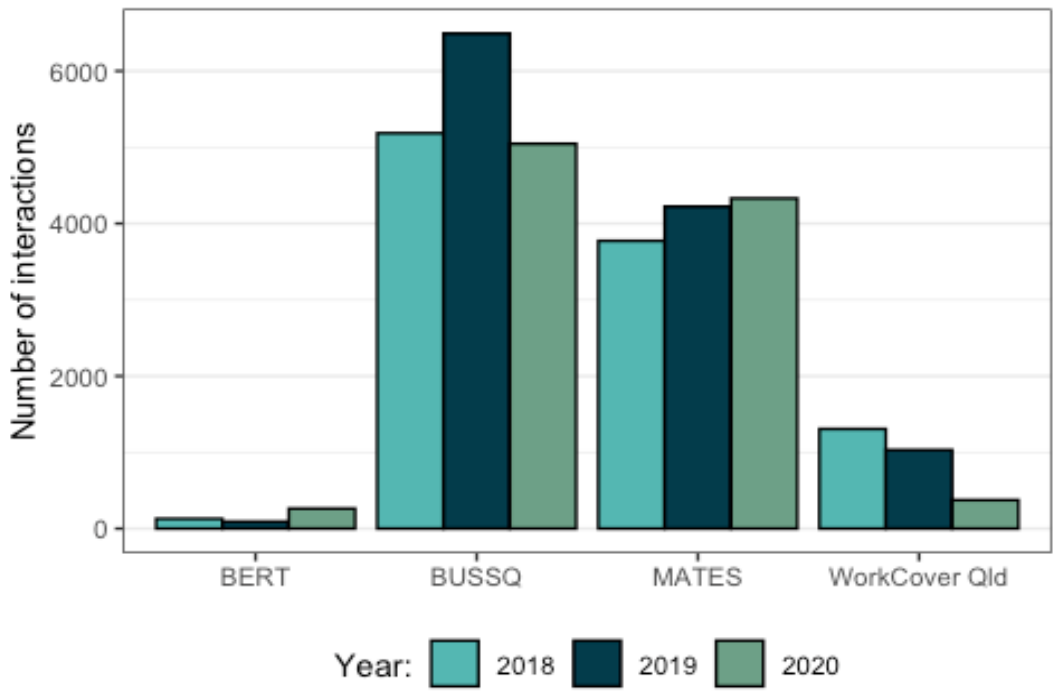
Year	Number of distress-related interactions	Number of construction workers in Queensland[1]	% of distress-related interactions from construction worker population per year	95% confidence interval
2018	8,259	239,400	3.45%	3.38 - 3.52
2019	9,472	236,600	4%	3.92 - 4.08
2020	8,594[2]	246,300	3.49%	3.42 - 3.56

[1] Population number sourced from the Queensland Government Statistician's Office.

[2] Adjusted to account for missing data.

Despite the overall stability in interactions in 2018 and 2020, Figure 3 shows variability across organisations. Specifically, BERT and MATES experienced increased interactions during 2020, while BUSSQ and WorkCover Queensland experienced reductions.

Figure 3. Number of interactions by organisation, per year. *



*Interactions with BERT during 2020 are undercounted.

Demographic profile

The demographic profile of the cohort is shown in Table 6 and was predominately male with a mean age of 40 at the time of their interaction for distress. A total of 6.5% identified as having an Aboriginal and/or Torres Strait Islander background.

Table 6 Demographic profile of cohort

Demographic	Female	Male	Overall
% (n) cohort	5.6% (n = 591)	94.4% (n = 9,957)	10,548
Age at index (median)	42	40	40
Aboriginal and/or Torres Strait Islander background % (n)	6.1% (n = 36)	6.5% (n = 652)	6.5% (n = 688)

Health services records

Overall, 152,610 health records were identified from 1 January 2017 to 31 December 2021 and this encompassed one year either side of the cohort period. Table 7 shows the cohort's total use of health services over five years. The majority had at least one interaction with a Queensland hospital (emergency department, public or private inpatient admission), while almost 40% were attended by the QAS. Females appeared to have lower rates of interaction with emergency departments and mental health services, but higher rates of interaction with other services, compared to males.

Table 7 Health service interactions dataset overview.

Health services	Individuals	Records	Female	Male
Emergency departments (EDC)	71.8% (n = 7577)	27,983	67.3% (n = 398)	72.1% (n = 7,179)
Hospital admissions (QHAPDC)	61.8% (n = 6520)	24,416	67.9% (n = 401)	61.5% (n = 6,119)
Non-admitted hospital presentations (QHNAPDC[1)]	48.8% (n = 5148)	49,993	56.7% (n = 335)	48.3% (n = 4,813)
Attendances by Queensland Ambulance Service (QAS)[1]	39.4% (n = 4156)	10,273	42.3% (n = 250)	39.2% (n = 3,906)
Public mental health services (CIMHA)	14.0% (n = 1478)	33,652	12% (n = 71)	14.1% (n = 1,407)
COVID-19 only	4.7% (n = 500)	6,1871	5.1% (n = 30)	4.7% (n = 470)
Deaths (QDR)	1.0% (n = 106)	-	1.0% (n = 6)	1.0% (n = 100)

[1]Excludes COVID-19 only presentations.

Mental health profile

Mental health profiles were examined based on recorded diagnoses in CIMHA. Only 14% had an interaction with these services, but some did not receive a diagnosis. Overall, 6.9% (n=723) of the total cohort had at least one mental health diagnosis recorded in CIMHA (Table 8) and the largest diagnosis category was mental illness, followed by substance-related and addictive disorders. The most common diagnoses were substance use, trauma and stressor related, and depressive disorders.

Table 8 Mental health diagnosis, reported as a percentage of people interacting with a public mental health service and in reference to the total cohort.

Mental health category	Number within total cohort	% with a public mental health service interaction	% total cohort
Mental illness	**619**	**85.6%**	**5.9%**
Trauma and stressor related disorders	287	39.7%	2.7%
Trauma disorder	226	31.3%	2.1%
Acute and other reaction to stress	87	12.0%	0.8%
Depressive disorders	221	30.6%	2.1%
Schizophrenia spectrum and other psychotic disorders	162	22.4%	1.5%
Psychotic disorders - schizophrenia	88	12.2%	0.8%
Psychotic disorders - substance induced	76	10.5%	0.7%
Psychotic disorders - acute and transient	45	6.2%	0.4%
Psychotic disorders - other	17	2.4%	0.2%
Other mental illness	124	17.2%	1.2%
Anxiety disorders	102	14.1%	1.0%
Bipolar and related disorder	46	6.4%	0.4%
Substance related and addictive disorders	**385**	**53.3%**	**3.6%**
Substance use disorders	321	44.4%	3.0%
Substance induced disorders	87	12.0%	0.8%
Substance use (other)	69	9.5%	0.7%
Personality disorder	**105**	**14.5%**	**1.0%**
Other personality disorders	53	7.3%	0.5%
Borderline personality disorder	43	5.9%	0.4%
Antisocial personality disorder	28	3.9%	0.3%
Other[1]	**28**	**3.9%**	**0.3%**

[1]Includes neurocognitive and neurodevelopmental disorders.

Health characteristics

Queensland Ambulance Service

Table 9 includes the most common Medical Priority Dispatch System (MPDS) codes for attendances by the QAS. For those people who were attended by the QAS, 15.3% had chest pain, 14.6% were coded as psychiatric/abnormal behaviour/suicide attempt and 14.4% had traumatic injuries. When examining QAS attendances, psychiatric/abnormal behaviour/suicide attempts were the most common overall.

Table 9 Ten most common Medical Priority Dispatch System (Queensland Ambulance Service) codes.

Medical Priority Dispatch System (MPDS)[1]	Number of people attended by Queensland Ambulance Service	% attended by Queensland Ambulance Service	% of total cohort	% (n) of records
Non-specific MPDS code[2]	898	21.2%	8.5%	11.3% (n = 1,158)
10: Chest pain (non-traumatic)	646	15.3%	6.1%	8.9% (n = 911)
25: Psychiatric/abnormal behaviour/suicide attempt	618	14.6%	5.9%	10.2% (n = 1,051)
30: Traumatic injuries (specific)	609	14.4%	5.8%	6.8% (n = 694)
29: Traffic/transportation Incidents	602	14.2%	5.7%	6.3% (n = 645)
17: Falls	490	11.6%	4.6%	5.8% (n = 598)
26: Sick Persons (specific diagnosis)	437	10.3%	4.1%	5.4% (n = 554)
4: Assault/sexual assault	367	8.7%	3.5%	4.1% (n = 423)
31: Unconscious/fainting (near)	349	8.2%	3.3%	4.0% (n = 413)
1: Abdominal pain	328	7.8%	3.1%	4.8% (n = 490)

MPDS: Medical Priority Dispatch System. This code is assigned by the Emergency Medical Dispatcher at point of call to 000. It should not be considered a definitive diagnosis. MPDS = 25 (psychiatric/abnormal behaviour/suicide attempt) may not accurately represent the true number of mental health-related attendances by QAS to people in this cohort over this period.

[1]Code 36 removed - Pandemic/epidemic/outbreak.

[2]In this report "non-specific MPDS codes" are used to describe interhospital transfers, aeromedical retrievals, medically authorised transfers, etc. (e.g. where a patient is transferred from a GP to a hospital). Where these codes are recorded, the underlying reason for ambulance attendance is not captured.

Emergency departments

Table 10 includes the most common interactions with emergency departments (ED) by ICD-10 code. For those people who visited an ED, almost 65% required treatment for injuries, poisoning and certain other consequences of external causes. Almost half of the total cohort (46.5%) visited an ED for this reason. These interactions primarily related to injuries rather than poisonings (see Appendix). The second category in Table 10 (R00-R99) includes the code R45.81 – suicidal ideation. A total of 19.6% of people in this category visited an ED for this reason. Additionally, 60 individuals (<1%) visited due to X60-84 (self-harm). When examining ED presentations, mental and behavioural disorders were the third most frequent presentation type.

Table 10 Ten most common ICD-10 presentation codes for people visiting emergency departments.

ICD10 Chapter	Number of people	% emergency departments	% cohort	% (n) records
Injury, poisoning and certain other consequences of external causes (S00-T98)	4,910	64.8%	46.5%	34.1% (n = 9,539)
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)	2,474	32.7%	23.5%	16.3% (n = 4,559)
Factors influencing health status and contact with health services (Z00-Z99)	1,237	16.3%	11.7%	6.4% (n = 1,785)
Diseases of the musculoskeletal system and connective tissue (M00-M99)	1,223	16.1%	11.6%	6.0% (n = 1,675)
Diseases of the digestive system (K00-K93)	1,118	14.8%	10.6%	5.9% (n = 1,658)
Mental and behavioural disorders (F00-F99)	954	12.6%	9.0%	6.8% (n = 1,910)
Certain infectious and parasitic diseases (A00-B99)	834	11.0%	7.9%	3.6% (n = 1,008)
Diseases of the skin and subcutaneous tissue (L00-L99)	832	11.0%	7.9%	4.3% (n = 1,191)
Diseases of the circulatory system (I00-I99)	813	10.7%	7.7%	4.4% (n = 1,238)
Diseases of the respiratory system (J00-J99)	629	8.3%	6.0%	2.1% (n = 840)

Queensland hospital admissions

Table 11 shows the most common reasons for admission to a Queensland hospital. People were most frequently admitted for injuries followed by diseases of the digestive system and musculoskeletal system.

Table 11 Ten most common admission diagnoses for Queensland hospitals.

ICD10 Chapter	Number of people with an admission diagnosis	% QHAPDC	% cohort	% (n) record
Injury, poisoning and certain other consequences of external causes (S00-T98)	2,572	39.4%	24.4%	16.3% (n = 3,978)
Diseases of the digestive system (K00-K93)	1,567	24.0%	14.9%	10.2% (n = 2,480)
Diseases of the musculoskeletal system and connective tissue (M00-M99)	1,554	23.8%	14.7%	10.9% (n = 2,671)
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)	1,543	23.7%	14.6%	9.6% (n = 2,354)
Factors influencing health status and interaction with health services (Z00-Z99)	741	11.4%	7.0%	15.7% (n = 3,824)
Mental and behavioural disorders (F00-F99)	633	9.7%	6.0%	8.9% (n = 2,178)
Diseases of the circulatory system (I00-I99)	567	8.7%	5.4%	5.1% (n = 1,237)
Neoplasms (C00-D48)	548	8.4%	5.2%	4.1% (n = 993)
Diseases of the skin and subcutaneous tissue (L00-L99)*	493	7.6%	4.7%	2.9% (n = 697)
Diseases of the genitourinary system (N00-N99)	489	7.5%	4.6%	3.1% (n = 758)

*When admissions were examined, diseases of the nervous system (G00-G99) were the ninth most common presentation.

Queensland hospital non-admitted patients

Table 12 shows the most common non-admitted hospital clinic codes. Consistent with the prominence of injuries and musculoskeletal conditions, orthopaedic services were the most common clinic code (both in terms of individuals who received this service and overall interactions), followed by surgery-related codes and physiotherapy.

Table 12 Ten most common non-admitted hospital clinic codes.

Type of service	Number of people	% QHNAPDC	% cohort	% (n) records
Orthopaedics	2,099	40.8%	19.9%	15.4% (n = 7,713)
General surgery	1,334	25.9%	12.6%	7.1% (n = 3,526)
Pre-admission and pre-anaesthesia	1,201	23.3%	11.4%	4.0% (n = 1,992)
Physiotherapy	1,021	19.8%	9.7%	8.9% (n = 4,442)
Clinical measurement	986	19.2%	9.3%	5.4% (n = 2,679)
Clinical pharmacy	713	13.9%	6.8%	3.0% (n = 1,479)
Anaesthetics*	697	13.5%	6.6%	2.0% (n = 978)
Gastroenterology	619	12.0%	5.9%	3.1% (n = 1,547)
Occupational therapy	561	10.9%	5.3%	3.5% (n = 1,773)
Endoscopy – gastrointestinal*	530	10.3%	5.0%	1.5% (n = 769)

QHNAPDC: Queensland Hospital Non-admitted Patient Data Collection.
*Radiation therapy and cardiology replace these items when attendances are examined.

Health services use

Timing and pathways

Figure 4 depicts the timing of health service contacts in the 10 weeks before and after the first distress-related interaction with a construction industry organisation. This shows a steep increase in the use of health services in the seven to 14 days leading up to the interaction and a subsequent steep decrease immediately afterwards. However, the average number of health service contacts per day increases after the distress-related interaction.

Figure 4. Use of health services 10 weeks before and after the first distress-related interaction with a construction industry organisation.

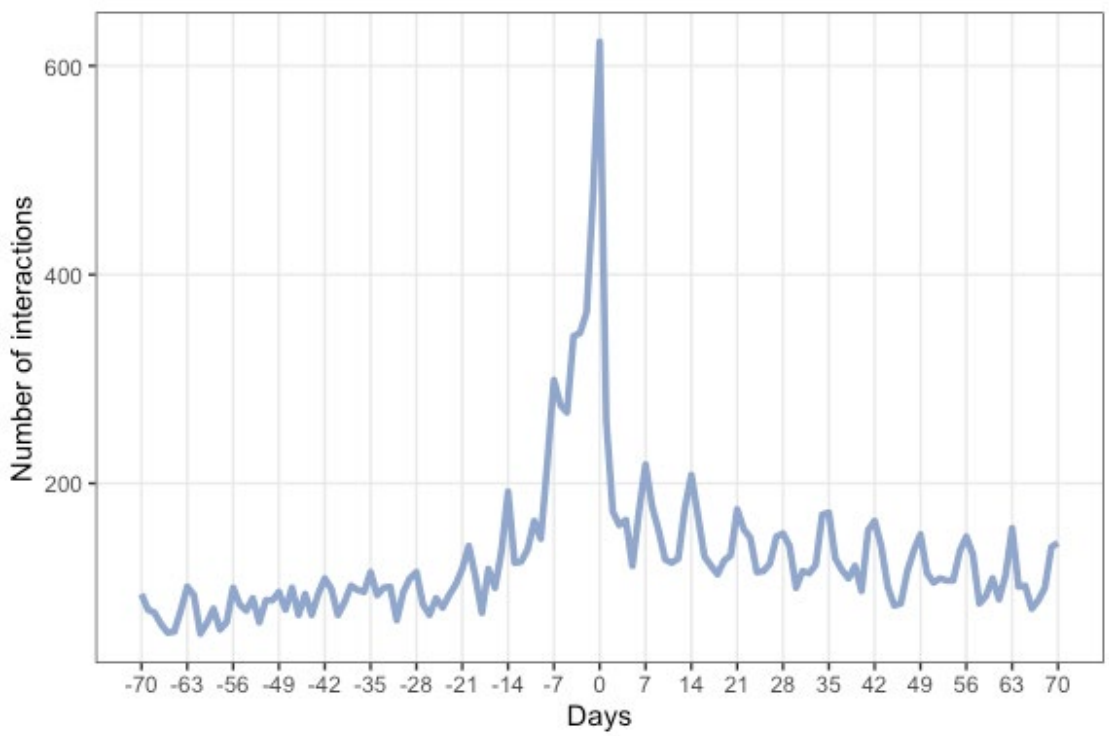


Table 13 shows how people interacted differently with health services in the 14 days before and after their first distress-related interaction with a construction industry organisation. More people contacted emergency departments, hospitals and the QAS before a distress-related interaction than afterwards. Accessing non-admission hospital services and public mental health services after expressing distress was more common than using these services beforehand. While accessing emergency departments was the most common type of health service contact in the 14 days before a distress-related interaction, use of non-admission hospital services was more frequent afterwards. Contact with mental health services was rare in the 14 days beforehand, but was the second most common interaction in the following fortnight.

Table 13 Interactions with health services 14 days before and after the first distress-related interaction.

Health services	Before index[1]	Same day as index[1]	After index[1]
Emergency departments	19.8% (n = 1278)	3.2% (n = 207)	5.2% (n = 334)
Hospital admissions	11.0% (n = 708)	2.9% (n = 190)	7.4% (n = 478)
Mental health services	5.9% (n = 380)	0.8% (n = 49)	7.7% (n = 497)
Non-admitted patients	9.9% (n = 639)	1.5% (n = 95)	14.4% (n = 930)
Queensland Ambulance Service	7.3% (n = 471)	1.3% (n = 82)	2.0% (n = 127)
Overall	53.8% (n = 3476)	9.6% (n = 623)	36.6% (n = 2,366)

[1]Proportions are calculated based on the total number of interactions 14 days before and after the first distress-related interaction (n = 6,465).

Injury-related presentations to emergency departments (S00-T98) were the most common health service interactions in the seven to 14 days before someone articulated distress to a construction industry organisation. A total of 49.7% of the cohort had an S00-T98 related interaction during the five-year study period. Of those who had an injury-related presentation, 64% (n=3357) had their first injury before their first distress interaction. Approximately 40% (n=1363) of people who had a S00-T98 presentation before their distress interaction also had another S00-T98 presentation afterwards.

Figure 5 applies a moving-average model to the interactions data shown in Figure 4. Once the interactions on day zero are removed, a seven-day moving-average of 123 presentations per day in the 10 weeks before the distress-related interaction was evident and this increased to 137 presentations per day in the following 10 weeks. This is an approximate 10% increase.

Figure 5. Moving-average model applied to presentation data before and after a distress-related interaction.

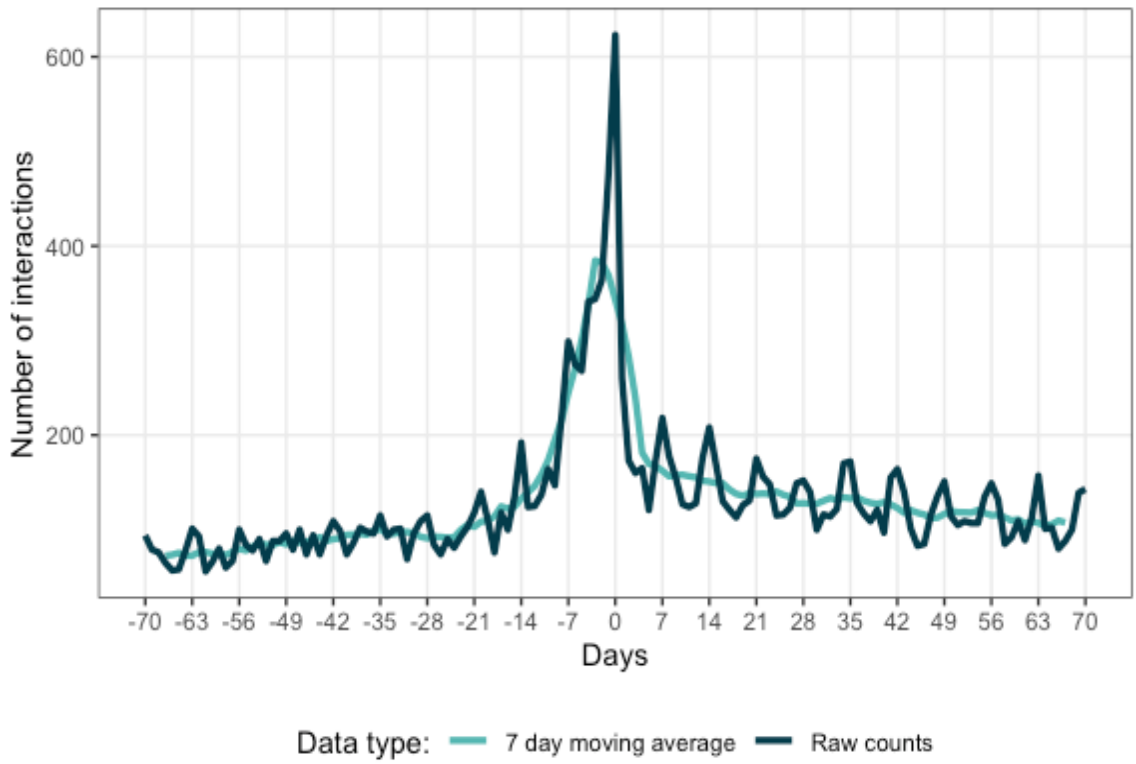
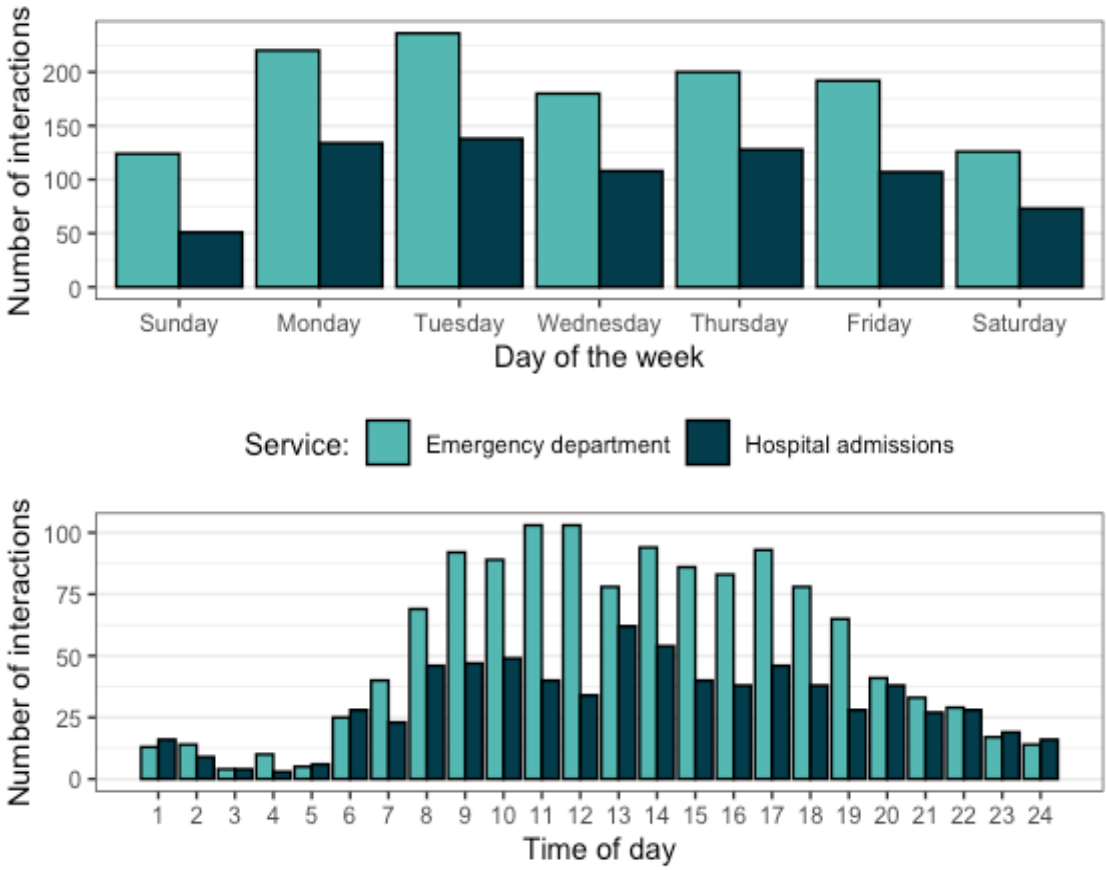


Figure 6 shows the timing of visits to EDs and hospitals in the 14 days before and after someone's first distress-related interaction with a construction industry organisation, by time and day of the week. The most common days for presentations were Mondays and Tuesdays, and the peak time for presentations was around midday (11am - 12noon inclusive) for EDs and 1-2pm (inclusive) for hospital admissions.

Figure 6. Presentations to emergency departments and Queensland hospitals in the 14 days before and after a distress-related interaction with a construction industry organisation, by time and day of the week.



Use of mental health services

A total of 17.5% (n =1843) of the cohort had at least one mental health related interaction with a health service, including a public mental health service, an ED F-coded presentation, or an attendance by the QAS with an MPDS25 dispatch. Table 14 shows the most common type of interaction was related to acute care services, including acute care and mental health co-responder (police-mental health or ambulance-mental health) teams.

Table 14 Breakdown of mental health related services interactions according to type.

Mental health related service contacts	Number of people	% MHS	% cohort
Bed based	**771**	**41.8%**	**7.3%**
Hospital admitted inpatient	768	41.7%	7.3%
Residential care	85	4.6%	0.8%
Clinical ambulatory	**1,115**	**60.5%**	**10.6%**
Specialised mental health services	761	41.3%	7.2%
Community mental health services	705	38.3%	6.7%
Hospital outpatient non-admitted	601	32.6%	5.7%
Acute Care Services	**1,407**	**76.3%**	**13.3%**
Acute Care Teams	1,074	58.3%	10.2%
Co-responder/crisis models	979	53.1%	9.3%
Alcohol and other drug	**25**	**1.4%**	**0.2%**
Outpatient alcohol and other drugs service	25	1.4%	0.2%
Opioid replacement therapy	24	1.3%	0.2%
Emergency department (F-Code)	**954**	**51.8%**	**9.0%**
Queensland Ambulance Service (MPDS 25: Psychiatric/abnormal behaviour/suicide attempt)[1]	**618**	**33.5%**	**5.9%**

[1]This estimate will undercount the true number of mental health related attendances by QAS.

Injury related presentations and intentional self-harm

The findings show a relationship between injury-related presentations (intentional or unintentional) to EDs and hospitals, and distress-related interactions with construction industry organisations.

Chapter S00-T98 presentations by year

Table 15 shows the number of S00-T98 interactions with EDs and Queensland hospitals from 1 January 2018 to 31 December 2020. It identifies a decline in the number of people treated for injuries as well as injury-related interactions during the three-year period.

Table 15 S00-T98 admissions by year.

Year	Number of people	Number of presentations
2018	1,906	3,254
2019	1,819	3,102
2020	1,519	2,578

Hospital admissions due to intentional self-harm

The proportion of injury and poisoning-related admissions due to intentional self-harm were examined in QHAPDC records using the Australian Institute of Health and Welfare classification of intentional self-harm (S00-T75 plus reported external cause code in the range of X60-X84 or Y87.0). Table 16 shows nearly 5.9% of people who had an admission recorded in the range of S00-T75 were identified as having at least one admission due to intentional self-harm, while 5.3% of all presentations were due to this reason.

Table 16 Proportion of people and records with a hospital admission diagnosis in the range of S00-T75, disaggregated by intentional or unintentional self-harm causes.

Counts	S00-T75 admissions not due to intentional self-harm[3]	Admissions due to intentional self-harm[3]
% (n) people[1]	96.7% (n = 2,334)	5.9% (n = 143)[4]
% (n) records[2]	94.7% (n = 3,373)	5.3% (n = 188)[5]

[1]Proportions are calculated from the total number of people with the ICD10 range 'S00-T75' (22.9%, n = 2,413 of cohort).

[2]Records are counted by the total number of principal diagnoses with ICD10 codes as self-harm related. Proportions are calculated from the total records of S00-T75 ICD10 code range admissions (n = 3,561).

[3]People can be double counted across categories.

[4]Values in this row do not add up to 100% due to some people having both types of admissions.

[5]Values in this row add up to 100% because records can only be classified as intentional self-harm or not intentional self-harm.

Table 17 shows important differences between people who:

- did not having an injury-related hospital admission
- had an injury-related hospital admission that was not due to intentional self-harm
- had an injury-related admission that was due to intentional self-harm.

People who had an injury-related hospital admission were slightly younger than those who were admitted for another reason. Sex-based findings showed more males than females had an injury-related admission. However, females had a relatively higher proportion of injuries due to intentional self-harm than males. People who had an Aboriginal and/or Torres Strait Islander background appeared to be relatively over-represented among those who had an injury-related admission.

There was also a marked increase in the prevalence of mental health diagnosis among people who had a S00-T98 presentation, regardless of whether this was due to intentional self-harm or not.

Prevalence of death, due to all causes, was markedly higher among people who were admitted due to intentional self-harm in comparison to those who had either no S00-T98 related admission or an injury-related (but not intentional self-harm related) admission. Prevalence of death appeared to be similar for these latter two groups.

Table 17 Disaggregation of admissions, by an injury or poisoning-related admission with or without evidence of intentional self-harm (ISH).

	Injury (S00-T98)		
Demographic	Number of injuries	Injury without ISH	Injury and ISH
% (n) Cohort	77.1% (n = 8,135)	23.7% (n = 2,495)	1.4% (n = 143)
Age (median)	41	38	39
Male	93.8% (n = 7,632)	96.0% (n = 2,394)	93.0% (n = 133)
Female	6.2% (n = 503)	4.0% (n = 101)	7.0% (n = 10)
Aboriginal and/or Torres Strait Islander	6.0% (n = 492)	8.1% (n = 202)	14.0% (n = 20)
Mental health diagnosis	5.2% (n = 419)	10.6% (n = 264)	65.0% (n = 93)
Died (any cause)	1.0% (n = 84)	0.8% (n = 21)	5.6% (n = 8)

Outcomes

Hospital admissions for intentional self-harm

More people were hospitalised or treated in ED for injury or poisoning before their first distress-related interaction with a construction industry organisation than afterwards. However, Table 18 shows hospitalisations for intentional self-harm followed a different pattern with higher numbers admitted

after a distress-related interaction. The findings identified people were either hospitalised for this reason before or after their first distress-related interaction, but rarely in both situations.

Table 18 S00-T75 and intentional self-harm before and after the first distress-related interaction with a construction industry organisation.

	Before first interaction[1]	After first interaction[1]
% (n) People[2]	46.9% (n = 67)	58.7% (n = 84)
% (n) People's first ISH hospitalisation	46.9% (n = 67)	53.1% (n = 76)
Number of hospitalisations[3]	77	111

[1]Proportion is calculated based on the number of people with intentional self-harm hospitalisation (n = 143). Note, as outlined in the qualifications and limitations section, data is based on Queensland hospitals admissions but not Emergency Data Collection. While there is likely to be similarities in patterns, the overall prevalence will be an underestimate.

[2]People can be counted across both time points.

[3]Records counted by the total number of unique event identifiers.

There was a median period of 338 days between hospitalisation for self-harm and a subsequent distress-related interaction. An average of 434 days elapsed between an initial expression of distress and a subsequent hospitalisation for self-harm.

Deaths

As shown in Table 19, a total of 1% of the cohort died over the four-year period from 1 January 2018 to 31 December 2021. The median age of those who died was 50 years and 7.5% of these people had been hospitalised for intentional self-harm, while 11% had received a mental health diagnosis.

Table 19 Demographic details for people who died from 1 January 2018 to 31 December 2021.

Demographic	Alive	Died
% (n) Cohort	99.0% (n = 10,442)	1.0% (n = 106)
Age at first distress interaction (median)	40	50
Female % (n)	5.6% (n = 585)	5.7% (n = 6)
Male % (n)	94.4% (n = 9,857)	94.3% (n = 100)
Aboriginal and/or Torres Strait Islander % (n)	6.5% (n = 683)	-
Mental health diagnosis % (n)	6.8% (n = 711)	11.3% (n = 12)
S00-T98 ICD chapter presentation[1] % (n)	49.8% (n = 5,203)	47.2% (n = 50)
Intentional self-harm hospitalisation % (n)	1.3% (n = 135)	7.5% (n = 8)

[1]Includes both hospital admissions and emergency department presentations.

Table 20 shows the most common causes of death were diseases of the circulatory system followed by neoplasms (i.e. cancers). Cancers of digestive organs were the most common, and suspected suicide was the third most prevalent cause of death, followed by diseases of the digestive system. In this latter group, diseases of the liver (K70-K77) relating to alcohol use and/or cirrhosis accounted for the majority (n=11) of deaths. Causes of death attributable to mental and behavioural disorders were predominately related to alcohol use.

Table 20 Ten most common causes of death.

ICD10 Chapter	% (n)[1]
Diseases of the circulatory system (I00-I99)	29.2% (n = 31)
Neoplasms (C00-D48)	28.3% (n = 30)
Suspected suicide death[2]	24.5% (n = 26)
Diseases of the digestive system (K00-K93)	13.2% (n = 14)
Diseases of the respiratory system (J00-J99)	11.3% (n = 12)
Mental and behavioural disorders (F00-F99)	11.3% (n = 12)
Endocrine, nutritional and metabolic diseases (E00-E90)	9.4% (n = 10)
Certain infectious and parasitic diseases (A00-B99)	5.7% (n = 6)
Diseases of the genitourinary system (N00-N99)	5.7% (n = 6)
External causes of morbidity and mortality (V01-Y98)	5.7% (n = 6)
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)	5.7% (n = 6)

[1]There are multiple death causes per person. Individuals can be counted more than once across chapters.

[2]ICD10 'X' codes were not available. Coding of suspected suicide were based on terms in the cause of death text.

The median time of death for people who died by suicide was 466 days (approximately 1.25 years) after a distress-related interaction with a construction industry organisation.

Table 21 shows that the period between the last interaction with a health service or construction industry organisation, and death by suicide, ranged from 10 days to approximately six months respectively.

Table 21 Interactions with health services and construction industry organisations prior to death.

Organisation[1]	Suicide % (n)	Median number of days between final interaction and death
EDC	61.5% (n = 16)	26 days
CIMHA	-	10 days
QAS	57.7% (n = 15)	58 days
QHAPDC	57.7% (n = 15)	21 days
QHNAPDC	38.5% (n = 10)	99 days
Construction agency	100.0% (n = 26)	188 days

[1]Interactions on same day as death not counted.

Implications

The intersection of mental health services and distress

Several features of a distress-related interaction, as defined in this project, are notable. Firstly, people who experience distress do not necessarily meet the diagnostic criteria for a mental health disorder or a mental health crisis. Specifically, while a mental health crisis could be a manifestation of distress, not all distress manifests as a crisis.

Secondly, public mental health services, EDs and ambulance services were accessed at low levels for mental health related support, and most were used in the context of a mental health crisis. This may have been caused by a reluctance to seek out these services. However, it is more likely they were unsuitable because the distress was chronic and not generally related to a diagnosed mental health disorder or restricted to a mental health crisis. People may have accessed federally funded mental health services (i.e. general practitioners, psychiatrists or psychologists), but confirming this would require further investigation through additional linkages to Medicare Benefits Schedule and Pharmaceutical Benefits Scheme data.

Link between injuries and distress

The research showed physical injuries occurring in the workplace may precede or follow a distress-related interaction. Overall, there appeared to be a link between injuries and mental health diagnoses. Further research would be needed to make strong claims about the precise cause and effect relationships involved.

Overall, the findings support the growing consensus among mental health researchers about the interconnection between physical, and mental health and safety, including its impacts on suicidality, and the need for holistic responses to support both physical, and psychological health and wellbeing (Favril et al., 2023; Meurk et al., 2024; Scott et al., 2010).

The way forward

The findings from this study highlight three key opportunities to improve both injury-related and distress-related 'touchpoints' within the health system and construction industry.

1. **A partnership approach** between health services and MATES in Construction (QLD & NT) Ltd could help ensure distress is identified earlier and more effectively mitigated, or prevented. This approach should involve close collaboration with emergency departments as they are accessed by most people. Due to the link between injuries and distress, this could also have secondary benefits and reduce injuries overall.

2. **Enhancing connectivity** across the construction industry could drive more innovative and integrated ways to recognise and respond to distress. Comprehensive initiatives that assist employees to identify distress, and facilitate sensitive and appropriate engagement, disclosure and support would further strengthen these approaches.
3. **Providing help at the right time and place** could improve outcomes for people experiencing distress. This could include targeted early interventions when workers attend emergency departments for injuries or initially identify distress with a construction industry organisation. Extending follow-up processes by 12 to 24 months could also help ensure people experiencing worsening distress receive additional and tailored support.
4. **Investigating the links between distress and injury prevention initiatives** could lead to improved workplace health and safety in the construction industry.

Appendix

Emergency department presentations relating to S00-T98 codes

ICD10 S&T Subchapter	Number of people	% S&T Chapter	% cohort
Injuries to the wrist and hand (S60-S69)	1,393	28.8%	13.2%
Injuries to the head (S00-S09)	1,003	20.7%	9.5%
Injuries to the ankle and foot (S90-S99)	781	16.1%	7.4%
Injuries to the knee and lower leg (S80-S89)	760	15.7%	7.2%
Injuries to the abdomen, lower back, lumbar spine and pelvis (S30-S39)	487	10.1%	4.6%
Injuries to unspecified part of trunk, limb or body region (T8-T14)	479	9.9%	4.5%
Injuries to the shoulder and upper arm (S40-S49)	438	9.0%	4.2%
Injuries to the thorax (S20-S29)	362	7.5%	3.4%
Injuries to the elbow and forearm (S50-S59)	348	7.2%	3.3%
Effects of foreign body entering through natural orifice (T15-T19)	346	7.1%	3.3%

Queensland hospital admissions relating to S00-T98 codes

ICD10 S&T Subchapter	Number of people	% S&T Chapter	% cohort
Injuries to the wrist and hand (S60-S69)	651	25.3%	6.2%
Injuries to the head (S00-S09)	408	15.9%	3.9%
Injuries to the knee and lower leg (S80-S89)	352	13.7%	3.3%
Complications of surgical and medical care, not elsewhere classified (T80-T88)	248	9.6%	2.4%
Injuries to the shoulder and upper arm (S40-S49)	229	8.9%	2.2%
Injuries to the abdomen, lower back, lumbar spine and pelvis (S30-S39)	205	8.0%	1.9%
Injuries to the elbow and forearm (S50-S59)	198	7.7%	1.9%
Poisoning by drugs, medicaments and biological substances (T36-T50)	175	6.8%	1.7%
Injuries to the ankle and foot (S90-S99)	174	6.8%	1.6%
Injuries to the thorax (S20-S29)	163	6.3%	1.5%

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