Evaluation of the National Suicide and Self-harm Monitoring Project and System| Interim Report

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Anna Flego, Georgia Dempster, Tessa Cutler, Jo Robinson and Jane Pirkis
Centre for Mental Health
Melbourne School of Population and Global Health
University of Melbourne

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Use of terms

Terms	Definitions
Suicide and Self-Harm Monitoring System	The National Suicide and Self-Harm Monitoring System brings together existing and new data on suicide and self-harm.
The System	An abbreviation of the Suicide and Self-Harm Monitoring System.
Suicide and Self-Harm Monitoring Project	The Suicide and Self-Harm Monitoring Project includes the activities required to build the system as well as data development activities to improve the collection, supply and timeliness of suicide and self-harm data reporting. The project is comprised of two phases. Phase 1 is the development of the Public Facing Monitoring Site. Phase 2 is the development of the State and Territory Information Portal.
The Project	An abbreviation of the Suicide and Self-Harm Monitoring Project.
The Public Facing Monitoring Site	Brings together existing and new morbidity and mortality data related to suicide and self-harm from across Australia into a public website that will provide interactive data visualisations, geospatial mapping and information on current suicide prevention activities and services.
The Published Site	An abbreviation of the Public Facing Monitoring Site.
The State and Territory Information Portal	Brings together existing and new morbidity and mortality data related to suicide and self-harm from across Australia into a secure environment. The State and Territory Information Portal will contain additional and more detailed information than the Public Facing Monitoring Site. Data custodians and their vetted users will have access to this data in the State and Territory Information Portal to aid policy evaluation, service planning and activities.
Phase 1	Development of the Public Facing Monitoring Site.
Phase 2	Development of the State and Territory Information Portal.

1. Introduction

The University of Melbourne has been commissioned by the Australian Institute of Health and Welfare (AIHW) to undertake an evaluation of the National Suicide and Self-Harm Monitoring Project and System. The National Suicide and Self-harm Monitoring System (the System) brings together existing and new data on suicide and self-harm in Australia and includes a Public Facing Monitoring Site (the Published Site) designed for public users and the State and Territory Information Portal designed for vetted users. The Suicide and Self-Harm Monitoring Project (the Project) includes the activities required to build the System as well as data development activities to improve the collection, supply and timeliness of suicide and self-harm data reporting. The Project is comprised of two phases: Phase 1 involves the development of the Published Site and Phase 2 involves the development of the State and Territory Information Portal. This evaluation formally commenced in May 2020 and is running alongside the Project and development and implementation of the System between 2020–2021.

This Interim Evaluation Report provides an overview of evaluation activity conducted between May 2020 and March 2021. This report includes some preliminary findings, mainly related to the development and publishing of the Published Site (Phase 1). Data collection and analysis continue for each of the data sources so final triangulation of data, results and conclusions will not be available until the final evaluation report which is due December 2021.

2. Scope and structure of this report

This report begins with background information related to the National Suicide and Self-Harm Monitoring Project and System, and the evaluation of the Project and System, including descriptions of the evaluation design and method. The report is then structured around the sources of data collected during the evaluation which include a review of key documents and observational and participatory data, data audits, semi-structured interviews, case studies and routinely collected analytics data. An update on evaluation activity is provided for each data source, and some preliminary results are reported from the review of key documents and observational and participatory data, the data audit and routinely collected analytics data of the Published Site, launched at the end of September 2020. Results for the stakeholder interviews and case studies are not included in this report as recruitment, data collection and analyses are ongoing. Additionally, this report does not include triangulation of primary and supplementary data sources as data collection and analysis are not yet completed.

3. Background

3.1. Suicide and suicide prevention

Suicide is a major public health problem both in Australia and internationally. In Australia, approximately 3,000 people die by suicide each year (1). Suicide is the leading cause of death among people aged 15–44 and Aboriginal and Torres Strait Islander people (hereafter, respectfully referred to as Indigenous people) have rates of suicide that are almost double those of non-Indigenous Australians (1). Every life lost to suicide is a tragedy, and the ripple effects for family friends, colleagues and communities are profound, far reaching and often long lasting. It has been estimated that up to 135 additional people are impacted by each death by suicide (2).

Suicide is complex and is thought to result from the interaction of many different factors (3). However, suicide can be prevented. To assist with prevention efforts, there is a need to shift greater attention to early indicators and supports to reduce suicide attempts and self-harm behaviour. This shift requires improved monitoring across the spectrum of suicidal behaviours and a better understanding of population and community level risk and protective factors for suicide.

3.2. Monitoring of suicide and self-harm

Public health surveillance systems are critical for informing public health practice. They are essential for quantifying and illustrating public health issues, identifying risks and protective factors, and evaluating interventions for prevention and treatment (4). The World Health Organisation has identified the importance of surveillance of suicide and self-harm as a core component of national suicide prevention strategies (5). However, there has been a paucity of high quality and timely data to inform preventive efforts in most countries around the world. This is particularly the case for self-harm surveillance data, despite suicide attempts being one of the strongest predictors of future death by suicide (6). Monitoring rates and risk factors for suicide and self-harm is critical for timely, targeted and effective intervention and postvention support services.

3.3. The National Suicide and Self-harm Monitoring Project and System

The System was announced as part of the Prioritising Mental Health Package in the 2019-20 Australian Government Budget. The AIHW is managing the three-year Project, which is responsible for building the System. The Department of Health is funding the AIHW $5 million per year, for the three years (2019/20 – 2021-22) to develop and implement the system. The AIHW is working closely with the National Mental Health Commission which has established an Expert Advisory Group, made up of lived experience representatives, government representatives, researchers, and other professionals from the suicide prevention sector, to provide advice as required for the development and implementation of the System.

The overall aim of the System is to assist the Australian Government and state and territory governments to achieve the objectives of the Fifth National Mental Health and Suicide Prevention Plan, which includes a commitment to improving the quality and timeliness of national data on suicide and self-harm. Improved national surveillance and data will inform mental health and suicide prevention policy makers, service providers, communities and researchers to identify emerging areas of concern and population sub-groups. Improved surveillance and data will assist these stakeholder groups to better respond to suicide and self-harm through appropriate policy making and suicide prevention and postvention activities.

The Project has two broad objectives:

- To build an integrated data system which will help increase the timeliness, coherence and quality of data on suicide, suicide attempts and self-harm; and
- To undertake specific data development activities to improve data collection and supply pertaining to suicide, suicide attempts and self-harm.

These two objectives are being addressed concurrently during the Project. The first objective is being addressed through the development of the System in two phases of project activity. Phase 1 is the development of the Published Site which presents national morbidity and mortality data sources and is intended for public users. The Published Site has been available to the public since September 2020 and is continuing to be updated with new data and information. Phase 2 is the design and development of the State and Territory Information Portal which holds more granular data for specialist users with restricted access and will become available over time (2021–2022). The Project is due to be completed by June 30, 2022. Figure 1 provides an illustration of the Project timeline.

The second objective of the Project is being addressed through quality improvement activities including ongoing maintenance and data development activities to improve the timeliness and quality of sourced data and the potential incorporation of additional data sets. For example, over time additional data sets may be included such as police incident data, emergency department data and health service data. This will allow for a comprehensive and timely picture of the rates of suicide and self-harm.

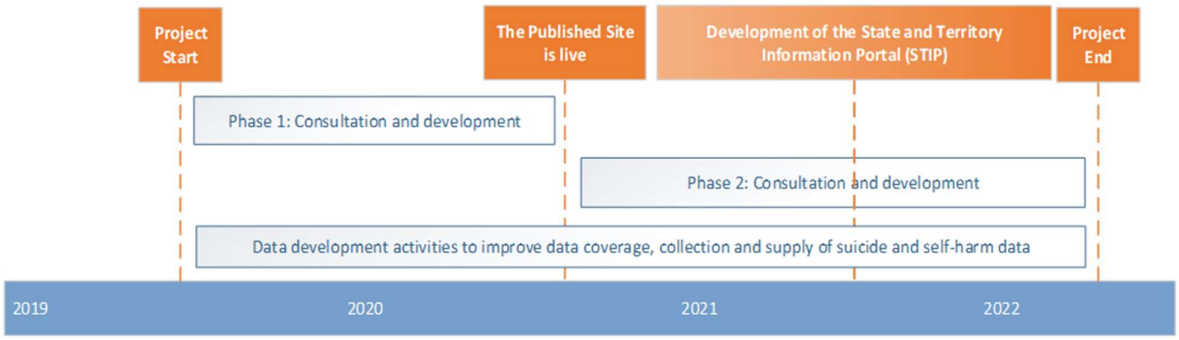


Figure 1: Timeline for the National Suicide and Self-harm Monitoring Project

4. Evaluation of the National Suicide and Self-harm Monitoring Project and System

4.1. Overview

The regular evaluation of public health surveillance systems is considered an important aspect of development and maintenance of these systems to ensure they are achieving their objectives and are providing valuable and useful information for stakeholders (7). The University of Melbourne has been commissioned by the AIHW to undertake an independent evaluation of the Project and System. The evaluation is running alongside the development and early implementation of the System from 2020 to 2021. The evaluation is gathering and analysing information over this time to assess elements of the design and development of the System, as well as the initial performance and effectiveness of the System. Evaluation findings will inform future quality improvements over time and before completion of the Project in June 2022. Evaluation findings may also contribute information to support decision making around future funding and sustainability of the System. A detailed evaluation plan (8) has previously been developed by the evaluation team in close consultation with the AIHW. This section of the report provides an overview of the approach and methods of the evaluation.

The evaluation is drawing on the Centre for Disease Control and Prevention (CDC) Guidelines for Evaluating Public Health Surveillance Systems (9), an evaluation framework widely used to support an assessment of surveillance system performance and efficiency (10). The CDC guidelines were used in a previous evaluation of the Victorian Suicide Register by the University of Melbourne (11). The CDC guidelines consider public health surveillance systems to include systems that are used to: measure the burden of disease and monitor trends in health-related events (such as suicide and self-harm), guide immediate action in relation to these events, guide the planning, implementation and evaluation of programs designed to prevent these events, evaluate public policy, detect changes in practice and examine the effects of these changes, prioritise the allocation of resources, and provide a basis for clinical and epidemiological research. Using this definition, the Suicide and Self-harm Monitoring System can be regarded as a public health surveillance system.

The CDC framework sets out overarching questions that evaluations of public health surveillance systems seek to answer, including the question: ***To what extent is the system meeting its aims and objectives?*** This evaluation is focused on this key evaluation question. The evaluation team have developed a program logic for the Project and System (see Figure 2) which is represented as a series of objectives that form a hierarchy and align with the processes and the intended impacts and outcomes of the Project and System. The logic assumes that the higher order objectives are contingent on achievement of lower order objectives. Together, these objectives highlight the shared understanding among project partners and key stakeholders as to what the Project and System is intended to do and what may change as a result, although it is not a definitive model.

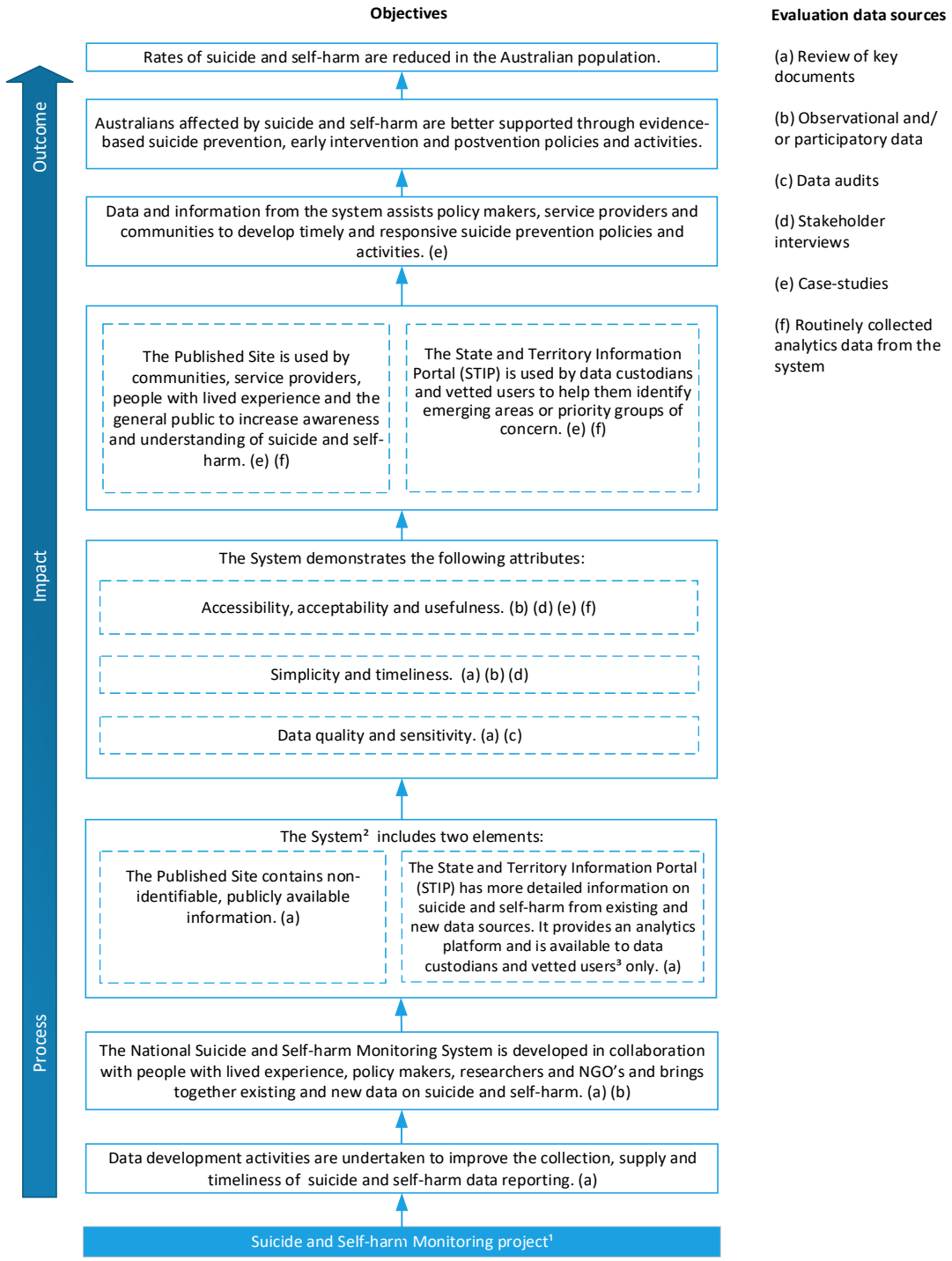
The CDC framework also includes specific guidance for the assessment of key system attributes of a well performing public health surveillance system but suggests focusing on those attributes that are most relevant to the objectives and type of surveillance system being evaluated. The evaluation of the System will assess the following attributes: ***Data quality, sensitivity, simplicity, timeliness, accessibility, acceptability,*** *and* ***usefulness.***

Table 1 provides a brief definition of these terms as applied to the evaluation. These attributes will be evaluated within a broader assessment of whether project and system objectives are achieved, as represented by the program logic.

Table 1: Centre for Disease Control and Prevention attributes as applied to the National Suicide and Self-harm Monitoring System

Attribute	Definition
Data quality	The completeness and validity of the data recorded in the system.
Sensitivity	The ability of the system to detect "true" suicide and self-harm instances and/or rates.
Simplicity	The structure and ease of operation of the system for users.
Timeliness	The speed between steps in the system such as the consideration of the time between the initial case capture and the availability of information for use for public health planning and intervention.
Accessibility	The availability and ease of use of data and information within the system to support the understanding of suicide and self-harm and its prevention.
Acceptability	The willingness of persons and organisations to participate and/or use the system.
Usefulness	The ability of the system to contribute to the prevention and management of suicide and self-harm including an improvement in stakeholders' understanding of the public health implications of suicide and self-harm.

As noted previously, a program logic has been developed (Figure 2). The program logic provides a focal point for evaluation planning and supports mapping of evaluation methods and associated data sources to objectives. The information from the data sources then helps to verify the extent to which objectives have been achieved at different levels of the hierarchy. As the evaluation is being conducted during the development and early implementation of the system and prior to the system being in a sustained and steady state of operation, evaluation of process and impact level objectives are the predominant focus of the evaluation. The iterative and phased nature of the development of the System also means the evaluation is iterative, with some aspects of the evaluation methods (see section 4.2) further developing over time, to ensure an appropriate fit of evaluation activity with project activity across the life of the Project.



¹ Suicide and Self-harm Monitoring project is the name given to the project being led by the AIHW to develop the National Suicide and Self-harm Monitoring System.
² 'The System' is a synonym for the National Suicide and Self-harm Monitoring System.
³ 'Vetted users' are users that have been approved by data custodians to access data in the State and Territory Information portal.

Figure 2: Objectives hierarchy forming the program logic and associated evaluation data sources.

4.2. Evaluation methods

The evaluation is gathering information from six data sources:

a. review of key documents,
b. observational and participatory data,
c. data audits,
d. semi-structured interviews with relevant stakeholders,
e. three case studies, and
f. routinely collected analytics data.

The **primary data sources** that are informing the evaluation are the **data audits, interviews and case studies**. The **document review, observational and participatory data**, and **routinely collected analytics data** are **supplementary data sources.** Triangulation of primary and supplementary data sources will be conducted to support overall synthesis and understanding of information to answer the evaluation questions. Triangulation facilitates validation of data through cross verification from more than two sources. It tests the consistency of findings obtained through different methods.

Each of these data sources will enable an assessment of the extent to which given objectives in the program logic have been achieved (see Figure 2). They will provide a focus on the system attributes identified as important for this system, as per the CDC framework (see Table 1).

The methods that are being used to collect and analyse data for each source are described in subsequent sections of the report. Data from each source are being captured over time to correspond with the development and roll out of Phase 1 and Phase 2 of the System.

4.3. Ethics approval

This evaluation is being conducted in accordance with the National Health and Medical Research Council Guidelines on Ethical Conduct in Human Research and the Australian Research Council Australian Code for the Responsible Conduct of Research. The evaluation team sought ethics approval from the University of Melbourne Human Research Ethics Committee in September 2020. Ethics approval was granted in November 2020. As this evaluation has been designed to be iterative, amendments to the original ethics application will be sought when further information about the methods of the evaluation have been established. As an example, each case study will require an amendment to the ethics application as the interview guide for each case will be developed according to the case's use and interactions with the System. Additionally, an amendment will be submitted to clarify the methods of the second data audit once the data sources that will be included in the State and Territory Information Portal have been identified.

4.4. Data collection and analysis during the COVID-19 pandemic

Due to COVID-19 restrictions in Australia and specifically in Victoria, all data collection and analysis has so far been conducted remotely by the evaluation team and will continue for the foreseeable future.

5. Review of key documents and observational and participatory data

5.1. Summary of methods

The Project is a collaboration between the AIHW (lead developers), the National Mental Health Commission, the Australian Government Department of Health, and an Expert Advisory Group (including lived experience representatives, government representatives, researchers, and other professionals from the suicide prevention sector). The AIHW and the National Mental Health Commission have facilitated meetings with the Expert Advisory Group to ensure their input during all stages of design and development of the system and data development activities. They have also conducted workshops with a User Experience Working Group made up of representatives from collaborating partners, but also broader representation from the mental health and suicide prevention sector. These workshops are designed to seek timely advice and feedback on key elements of the design and content of the Published Site. Media and sector briefings were conducted at the time the Published Site went live to increase the awareness of the System and the Project within the media, mental health, and suicide prevention sectors.

Since May 2020, the evaluation team member has attended workshops and meetings in either an observational or a participatory capacity. The aim of attendance has been to gain a deeper understanding of project activities and outputs contributing to the development of the System, including how identified stakeholders of the System have been involved in the Project. Additionally, attendance at these workshops and meetings has provided the evaluation team with early insights into system attributes from various stakeholder perspectives (i.e., acceptability, accessibility and usefulness of the site). To capture participant and user experiences during these meetings and workshops, the evaluation team has taken notes on key points related to project activities as well as stakeholder interactions and feedback to support evaluation of related objectives noted in the program logic (see Figure 2). Associated documentation from these meetings and workshops such as agendas, minutes, and papers were reviewed, and relevant information has been extracted and collated in an Excel spreadsheet. The information from these meetings and documents has been summarised into three areas of interest: stakeholder involvement in the design and development of the system; early insights into system attributes during design and development of the system; and data development activities. Further participation in meetings and workshops is likely to occur as the System moves towards development of the State and Territory Information Portal. For this reason, information presented here is preliminary and will be further analysed and triangulated with other data sources (such as interviews and case studies) on completion of all data collection in late 2021.

5.2. Sample of information

Members of the evaluation team attended seven events between June 2020 and September 2020. Table 2 shows these events.

Table 2: Events attended for observational and/or participatory data collection.

Date	Event
04.06.2020	Public Facing Monitoring Site: Meeting of the User Experience Working Group – Workshop 1
24.06.2020	Meeting of the Expert Advisory Group Sub-committee for the National Suicide and Self-harm Monitoring System
01.07.2020	Meeting with the Australian Institute of Health and Welfare project team and the Australian Government Department of Health
17.07.2020	Public Facing Monitoring Site: Meeting of the User Experience Working Group – Workshop 2
11.08.2020	Public Facing Monitoring Site: Meeting of the User Experience Working Group – Workshop 3
28.09.2020	Media Briefing Webinar: Launch of the Public Facing Monitoring Site
29.09.2020	Suicide Prevention Sector Webinar: Launch of the Public Facing Monitoring Site

Participants at these events included representation from:

- the AIHW project team,
- the National Mental Health Commission project team,
- the Australian Government Department of Health,
- the Expert Advisory Group,
- state and territory government departments,
- Primary Health Networks,
- Non-Government Organisations involved in suicide prevention,
- community organisations working in the suicide-prevention area including advocacy groups,
- members of the peak body for suicide prevention,
- service providers including from youth focused mental health services, crisis and other mental health support lines,
- advocates of Indigenous people's health and wellbeing,
- people with a lived experience of suicide and/or self-harm,
- researchers working with suicide and self-harm data and/or suicide prevention more broadly,
- data custodians, and
- University of Melbourne evaluation team members.

Documents provided to the evaluation team and included for review:

- AIHW project planning documents and internal memos,
- Expert Advisory Group briefing documents and meeting minutes (November 2019 meeting),
- User Experience Working Group workshop briefing documents and access to wireframes and tableau visualisations as part of the workshop,
- AIHW written updates on data development activities, and
- AIHW and National Mental Health Commission media and sector briefing documents and media pack.

In addition to the events noted in Table 2, since May 2020, the evaluation team have also participated in regular fortnightly update meetings with the AIHW project team, with representatives from the National Mental Health Commission and the Australian Department of Health present on occasion. These meetings have provided the evaluation team with verbal and written updates of project activities, including data development activities as they have progressed over the course of the Project.

5.3. Preliminary findings

5.3.1. Stakeholder engagement in design and development of the system

The meetings were designed to ensure high levels of engagement with a broad range of organisations and individuals with a stake in the System. They incorporated end user perspectives from the outset to shape ongoing design and development of the System. Early prototypes were presented and live examples of navigation around the site were used to prompt discussions with stakeholders. Stakeholders were invited to provide feedback in their preferred way, through immediate discussion, using the text chat function on video conferencing calls, or emailing project staff after sessions. During the User Experience Working Group workshops, the AIHW project team, working with members of the National Mental Health Commission, responded to questions from participants about aspects of the design and development of the public facing monitoring site. Members of the AIHW provided further rationale and context for design and content choices, explaining key terms, data challenges and limitations, and what was in scope for further iteration. This Q&A style interaction enabled in depth discussion of key components of the Published Site with stakeholders and appeared

useful for building increased awareness among stakeholders of limitations and challenges of data and data systems in suicide and self-harm more broadly.

Another notable finding emerging from this data source was the prominence and importance of the lived experience perspective guiding the design and development of the site. People with lived experience of suicide were present in all the User Experience Working Group workshops and during the EAG sub-committee. A lived experience representative also presented a personal perspective of suicide at both media and sector webinar briefings. This highlights the commitment of the AIHW and National Mental Health Commission to ensure that decisions about the System are informed by the voices of people who have been affected by suicide.

5.3.2. Early insights into attributes during design and development of the system

Stakeholder insights into attributes of the emerging system surfaced from discussions and feedback noted during attended meetings and workshops. Discussion of aspects related to the **accessibility** and **acceptability** of the Published Site were especially prominent. Feedback often focused on 1) the type of language used on the website, including the use of acronyms and jargon, and 2) the level of prior knowledge required to understand and use the data, including understanding key statistical concepts and data limitations, and being able to interact with the data. Stakeholders acknowledged the competing tension of tailoring the site to different types of users given that some will have experience with suicide and self-harm data and others will not. In relation to the availability of data on the system, stakeholders were very complimentary about the breadth of data and associated analyses and visualisations, including the focus on additional geographic and demographic breakdowns of suicide and self-harm data. There appeared to be consensus that this information was a good starting point, although some feedback highlighted the paucity of information about particular population sub-groups, such as people who identify as LGBTIQ+, injured workers, people living with chronic disease, and people living with a disability.

In terms of **acceptability**, the consideration of how sensitive information was being presented and the safety of the website overall (i.e., for vulnerable individuals who might view the site) was a prominent feature of discussion. Much discussion centred around how sensitive data would be presented (i.e., presentation of information about suicide methods), whether content warnings would be in place, and the prominence of signposting of help lines and support. Consideration and alignment to Mindframe guidelines (12) was also advised. While stakeholders viewing early prototypes and wireframes for the site noted many of these elements had been considered and included, feedback suggested continuing to review and refine the site with this safety lens. Stakeholders also raised the presentation of suicide data for Indigenous Australians and advised that data presented should be aligned with the Closing the Gap Report (13) and Mindframe guidelines (12).

Stakeholders were asked to think about the **usefulness** of the data presented in specific visualisations, graphs or other proposed site content. Discussion of the utility of some specific content, including the presentation of suicide and hospitalisations for self-harm at the PHN level, led to suggestions that mapping specific user journeys (e.g., PHN users) might be a useful exercise to further understand the needs of specific users of the site.

5.3.3. Data development activities

The scope of the Project is broader than the development of the System. It also includes data development activities designed to improve the data collection and supply of suicide and self-harm data nationally, and to enhance data sharing across jurisdictions. Improving the data entered in the system will inevitably impact upon the attributes of the system either directly (e.g., **data quality** and **timeliness**) or indirectly (e.g., the **accessibility**, **acceptability** and **usefulness** of the system).

As stated previously, these attributes will be assessed as part of the evaluation through the triangulation of multiple data sources and will be reported in the final evaluation report in December 2021. However, the project documents and plans, the Published Site, meeting minutes, and internal memos provided to the evaluation team

by the AIHW, all offer information on the type of data development activities and outputs that are currently being implemented.

These include:

- **Contracting Turning Point to develop the National Ambulance Surveillance System (NASS) for overdose and suicidal behaviour in April 2020**. The NASS is a partnership between Turning Point, Monash University, Eastern Health (Victoria) and jurisdictional ambulance services across Australia. It is a novel monitoring system that provides timely and comprehensive data on ambulance attendances for suicide attempts, suicidal ideation, self-injury, and mental health. Turning Point collate and code ambulance attendance data in all jurisdictions except South Australia and provide it to state and territory agencies and to the AIHW for reporting of some of this data on the public facing monitoring site. As of February 2021, the published site provides 1-month per quarter snapshots from Victoria, Tasmania and the Australian Capital Territory for 2019, and from the second quarter of 2019 for New South Wales. The site also states that "data from other participating jurisdictions will be available over the remainder of 2020 and 2021, with monthly data for all jurisdictions available from mid-2021". See: https://www.aihw.gov.au/suicide-self-harm-monitoring/data/ambulance-attendances. The data are currently reported in quarterly snapshots but the AIHW are working to increase the frequency of this reporting to monthly.

- **The establishment of state and territory suicide registers**. A key goal of the broader project is to establish registers in all jurisdictions to provide timely data on suspected suicides. The COVID-19 pandemic has highlighted the need for timely data on suspected suicides to monitor impacts of the pandemic and prompt appropriate policy responses. During 2020 and early 2021, progress in this area includes:

    - The AIHW is obtaining timely data during COVID-19 from existing registers in Victoria (est. 2012), Queensland (est. 2011), and Tasmania (est. 2017). These data are now informing reporting to the Prime Minister's Office, the Australian Government Department of Health and other government departments.
    - The AIHW have become aware that current data are not available from the Western Australian register (est. 2010) due to changes in governance that have interrupted the coding process. In addition, legislative restrictions are currently subject to a reform process.
    - The AIHW was involved in supporting New South Wales to establish its suicide register in 2020. The New South Wales Suicide Register released its first report in October 2020.
    - The AIHW is currently working with South Australia, the Australian Capital Territory, and the Northern Territory to help establish registers in these jurisdictions.
    - Based on agreement with the relevant jurisdiction data custodians, the AIHW has published data on suspected suicides from the Victorian, Queensland and New South Wales registers. This information is found on the COVID-19 webpages of the public facing monitoring site. See: https://www.aihw.gov.au/suicide-self-harm-monitoring/data/covid-19.
    - The AIHW is intending to convene a meeting in the first half of 2021 with representatives of state and territory suicide registers to consider how the registers might work together and what can be further done with data flowing from the registers.

- **Work to improve the collection of emergency department suicide and self-harm related presentation data**. Intentional self-harm presentations are currently not identifiable in the National Non-Admitted Patient Emergency Department Care Database. The AIHW is working with states and territories through the Mental Health Information Strategy Standing Committee to explore strategies for improving the quality and consistency of emergency department data, including a way of identifying presentations

related to suicide attempts. The AIHW has drafted a scoping paper on opportunities and barriers to developing a consistent national data collection on suicide-related emergency department presentations which has been endorsed by the Mental Health Information Strategy Standing Committee. Further discussion about next steps is likely to happen in late 2021. AIHW continues to work with individual jurisdictions to progress emergency department data collection.

- **Data integration**. The AIHW is currently working with data from the Multi-Agency Data Integration Project to better identify protective and risk factors for suicide and has published some findings on the "social factors and deaths by suicide" section of the public facing monitoring site. See: https://www.aihw.gov.au/suicide-self-harm-monitoring/data/behaviours-risk-factors/social-factors-suicide. Other relevant data integration projects that AIHW are leading include; an examination of service use in the last 12 months of life for people who have died by suicide using the National Integrated Health Services Information Analysis Asset in partnership with the Australian Government Department of Health; and a dataset that the AIHW supplied to the Royal Commission into Victoria's Mental Health System that linked data from the Medical Benefits Schedule, the Pharmaceutical Benefits Scheme, the National Death Index, and specialist Victorian mental health services records. Analysis of data from the latter dataset aimed to provide the Royal Commission with a holistic picture of the mental health system in Victoria. It is not yet clear if other data linkage activities will be conducted during the project period. A further update will be provided in the final evaluation report.

5.4. Next steps

The evaluation team will seek to observe or participate in meetings and workshops associated with the development of the State and Territory Information Portal and will also continue to source and review relevant project documents.

6. Data audit

6.1. Summary of methods

The evaluation team has conducted the first of two audits of the System's data. This first audit was conducted on the data available through the Published Site. This audit aimed to evaluate the **data quality** and **sensitivity** of data published on the Published Site, both attributes identified in the CDC framework and program logic. The ability of the Published Site to exhibit these attributes was evaluated by examining the internal consistency, sensitivity, completeness, and representativeness of the published data. Data-related processes were also reviewed to evaluate their **simplicity** and **timeliness**.

Comparisons were made between the tables and visualisations on the Published Site, the supplementary tables behind those tables and visualisations, and datasets that are publicly available through other sites and sources. The datasets used to source the Published Site data, along with and other comparable datasets were used as gold-standards for the assessment of the sensitivity of data. Comparisons checked for consistency of frequencies of deaths by suicide and instances of self-harm within the Published Site, as well as between the site and other datasets. The data audit was primarily conducted on a representative subset of visualisations and tables from the site.

Data were collected from the Published Site, as well as from other public websites and reports. Where possible, datasets were downloaded from the host websites and directly imported into Excel to create a data audit database. Some of the required datasets were not able to be exported from their host sources and data were instead manually entered into the data audit database. All information in the data audit database was checked against the original datasets for accuracy, and the data audit database was locked to editing. Selections of data from the database were then analysed descriptively in Excel. Counts, proportions and differences were calculated between datasets. T-tests were used to explore the significance of any identified differences.

The proportion of complete data in key data fields, including the distribution of key characteristics in the system against both the original source and other population datasets, including for sex, age at death, and suicide method were assessed. Representation of particular population sub-groups with higher rates of suicide and self-harm, such as Indigenous people, LGBTIQ+ people, injured workers, people living with chronic disease, people living with a disability, people with mental illness, people with drug and alcohol use problems, and serving and ex-serving Australian Defence Force personnel were also examined.

6.2. Description of data

At launch, the Published Site contained 37 main visualisations and tables in addition to descriptive text, supplementary tables, and links to publications and other data sources. The detailed data quality and sensitivity portion of the data audit was conducted on a representative sample of 11 of the visualisations and tables, along with their corresponding supplementary tables. These specific visualisations and tables were selected because of their coverage of a range of measures including suicides, instances of self-harm hospitalisations, instances of self-harm and related ambulance attendances, and psychological distress. They presented data across a range of factors including time, gender, age, states and territories, socioeconomic areas, remoteness areas, psychosocial factors, Indigenous status, and currency of Defence Force service. The data for these selected visualisations and tables was sourced from a range of datasets including Australian Bureau of Statistics (ABS) Cause of Death data, AIHW National Mortality Database, ABS National Health Survey, AIHW National Hospital Morbidity Dataset, National Ambulance Surveillance System data, the Queensland Suicide Registry, and unique analysis of linked datasets.

6.3. Findings

6.3.1. Internal consistency

The visualisations and tables published on the Published Site list their corresponding supplementary table, which are available for download through the data downloads page of the site. More than 20% of data points were

randomly selected from seven of the 11 visualisations and tables and compared to their corresponding supplementary tables to check for internal consistency and any reporting errors. All data that was checked from these visualisations and tables matched the supplementary tables. This check was not performed for the remaining four of the 11 visualisations and tables as they did not list corresponding supplementary tables.

6.3.2. Sensitivity

Online searches were conducted to identify potentially comparable datasets published as graphs, tables, or downloadable datasets on publicly available websites, or through published reports or papers. Data included on the Published Site were sourced from many of the leading organisations and datasets available in Australia for suicide and self-harm data. This meant that many of the comparable datasets available were also used as sources for the data on the public facing monitoring site. Where the identified comparable dataset was also the source for the Published Site, the audit still provided information on consistency of reporting between the published information.

One of the 11 visualisations and tables was not able to be audited against a comparable dataset as a comparable dataset could not be found. This was due to the site presenting the first publicly available data on the topic – ambulance presentations for self-harm and related behaviours/conditions. Comparisons were made for the remaining 10 visualisations and tables, for which comparable publicly available datasets could be found. Where a supplementary table was listed, the supplementary table was used for this comparison. Data pulled directly from the published visualisations and tables were used for the four without listed supplementary tables. In many cases, the most comparable datasets found were not directly comparable as they used different categories and aggregated the data in different ways (e.g., presented all persons by state/territory versus presented by sex for all of Australia). In these cases, comparisons were made for the data in as many different aggregated variations as were possible. Comparisons were not made with datasets that reported aggregate data where the definition for the aggregated cells did not match the definition for the data on the Published Site.

Five of the audited visualisations and tables presented exactly the same data as the comparison datasets. Four were found to have some data differences were not significantly different. One visualisation was compared to three different comparison datasets, one of which presented the same data, and two which presented data with differences that were not significant.

The five visualisations and tables that reported the same data as the comparison datasets presented data about psychosocial risk factors for suicide deaths, proportions of people with high and very high psychological distress, suicide deaths by Indigenous status and sex for Australia (excluding Victoria, Tasmania and the Australian Capital Territory), age-standardised suicide mortality ratios of Australian Defence Force personnel, and age-standardised monthly suspected suicide rates in Queensland. The data sources for these visualisations and tables were the ABS Cause of Death data, ABS National Health Survey data, AIHW analysis of linked Personnel Management Key Solutions and National Death Index data, and data from the Queensland Suicide Registry. In each of these five cases, the comparison dataset was pulled from publicly available data downloads or reports from the same sources. In these cases, each data point was an exact match to the comparison dataset.

Two of the visualisations and tables that reported similar data to comparison datasets were about, intentional self-harm hospitalisations in young people, and intentional self-harm hospitalisations by states and territories.

Both of the visualisations of intentional self-harm hospitalisations (one relating to young people and one by states and territories) used data sourced from the National Hospital Morbidity Database and were compared to publicly available, downloadable subsets of data from the same database, covering all but the final time period reported on the Published Site. For the visualisation focusing on young people, 29 of the 81 compared data points differed by one count of hospitalisation each. In total, the data on the Published Site reported an additional 10 intentional self-harm hospitalisations for young people over the comparable years. The difference was not found to be significant ($p > 0.99$). For the visualisation presented by states and territories, comparisons were made to two different subsets of the National Mortality Database; totals for Australia per year were compared to one subset, and hospitalisations for each state and territory were compared for a single year to

another subset. The majority of data points in the first comparison differed by up to nine counts of hospitalisation. When comparing across states and territories for a single year period, only three states differed and only by one each time. Neither of the comparisons for this dataset were significantly different ($p > 0.99$).

The other two visualisations and tables that reported similar data to comparison datasets measured suicide deaths and were both sourced from the National Mortality Database and ABS Cause of Death data. The first of these visualisations looked at suicide deaths by remoteness area, and the following by socioeconomic area and mechanism. These were both compared to publicly available, downloadable subsets of the National Mortality Database. For both comparisons, data from the visualisation had to be aggregated across years for a summed five-year period. Due to the aggregation of the comparison dataset, the visualisation reporting data by remoteness area could only be compared for persons (not males and females). Data from the visualisation differed from the comparison dataset by between nine fewer and 150 more suicide deaths across the categories compared. The total difference was 292 more suicide deaths reported on the Published Site and these differences were not found to be significant given the large number of total suicide deaths reported ($p = 0.98$). Comparisons for the socioeconomic areas and mechanisms visualisation could only be made for all mechanisms by socioeconomic area, rather than by each listed mechanism by socioeconomic area. Data from this visualisation differed to the comparison dataset by between 63 fewer and 245 more suicide deaths across the compared categories. The total difference was 229 more suicide deaths, and these differences were again not found to be significant ($p = 0.91$). Of note, the total suicide deaths reported over the same five-year period in the two visualisations differed from each other, as did the total suicide deaths reported both comparison datasets.

The final visualisation examined for this component of the data audit reported on suicide deaths in Australia from 1907–2019 by sex. This visualisation used data sourced from the National Mortality Database and ABS Cause of Death data and was compared with three separate datasets; a subset of ABS Cause of Death data, a subset of the National Mortality Database, and data presented in the Suicide in Australia: Trends and analysis: 1964–2018 report (14). The ABS Cause of death data from 2010–19 was compared to the data reported in the visualisation and every compared data point was an exact match. Data presented in the report table from 1994–2017 was compared to the visualisation data for persons for each year and by sex for those years summed together. The visualisation on the Published Site reported 43 fewer male and 23 additional female suicide deaths across the period compared with the report. The visualisation reported a range of 84 fewer to 75 more suicide deaths for all people across each of the included years compared with the report. Neither of the comparisons to the report data were significantly different ($p > 0.99$). The final comparison for this dataset was made to an available subset of data from the National Mortality Database for males and all persons in 2018. The visualisation data reported 72 fewer male and 92 fewer total suicide deaths compared with the datasets from the National Mortality Database. A t-test was not able to be conducted to compare these datasets due to the limited data cells available.

The majority of data available on the Published Site matched comparison datasets. Inconsistencies in data reporting on suicide deaths and instances of self-harm are expected in Australia due to differences in definitions and data collection methods between data custodians, jurisdictions, and over time. For example, the data examined from the Suicide in Australia: Trends and analysis: 1964–2018 report and the National Hospital Morbidity Database included deaths coded with ICD-10 codes X60-X84 but did not include those coded with Y87.0. ABS Cause of Death data and the data presented on the Published Site reflects the updated best practice for intentional self-harm deaths of including those coded with Y87.0. Additionally, the Published Site and ABS Cause of Death data both include a time series adjustment of Victorian deaths which affected multiple years. At the time of conduction of this data audit, this adjustment had not yet been made to all datasets, including the comparison datasets used from the National Mortality Database.

These and other inconsistencies in data reporting are issues that the project seeks to improve through the data development activities outlined in Section 6.3.3, however the impact of these and other data improvement activities will require time to further improve the accuracy and consistency of the reported data.

6.3.3. Completeness and representativeness

The 11 audited visualisations and tables contained more than 3,000 data points combined, of which 24 data points (less than 1%) were not published. Each of these unpublished data points were for age-standardised rates that could not be calculated due to low numbers (e.g., Indigenous female suicides in 2003, or female suicide deaths in very remote areas per year). Seven of the visualisations and tables audited presented data by sex, four by age categories, three by state/territory, and all across a range of time periods. In order to supress small numbers and maintain confidentiality of the sensitive data reported, not all combinations of key characteristics were able to be reported on the Published Site. For example, data on suicide deaths by mechanism would likely contain many cells with small numbers and therefore have many cells unable to be published if they were presented by year, sex, age, and states/territories. Compared with other datasets used in the sensitivity analysis, information reported by the Published Site covers a large range of the key population characteristics available for this data.

Representation of population sub-groups, particularly those sub-groups who are over-represented in suicide and self-harm statistics, is important for prevention efforts but often difficult to report on due to small numbers and availability of accurately recorded data. The audit of this information was conducted across all data presented on the Published Site, rather than just the subset included in the more detailed data quality and sensitivity portion of the data audit. The Published Site includes sections for reporting on suicide deaths and instances of self-harm instances in young people, Indigenous people, and serving and ex-serving Australian Defence Force personnel. Each of these sub-groups had limited data reported with young and Indigenous people only having reports of suicide deaths and self-harm instances, and Australian Defence Force personnel only having suicide deaths reported. Much of this reporting was unlikely to be possible on the Published Site due to the small numbers that would result from these breakdowns. Data relating to suicide deaths of Indigenous people were not able to be reported across all Australian jurisdictions due to issues with data collection in the source datasets for some states and territories.

Very little information was reported for people with disability ("limitation of activities due to disability" was an identified risk factor presented in the visualisation of most frequently occurring psychosocial risk factors in suicide deaths). No information was reported for other population sub-groups including LGBTIQ+ people, people with chronic disease, injured workers, people with mental illness and people with drug and alcohol use problems were also examined. This information was also not reported in the other datasets used in the detailed data quality and sensitivity portion of the data audit suggesting a dearth of this data in Australia more broadly. One of the challenges to reporting on rates of suicide and self-harm for population sub-groups is a lack of information about these sub-groups in the data. Baseline numbers of people within each sub-group within Australia are necessary (e.g. Census data), as well as relevant data at the time of the death or self-harm incident (e.g. hospital admissions, coroners' records).

6.3.4. Simplicity and timeliness related to data processes

A review of the system's processes relating to the collection, analysis and reporting of data for the Published Site was conducted to evaluate the simplicity and timeliness of these processes. A key document provided to the evaluation team by the AIHW described more than 20 steps involved in building data visualisations for the Published Site. Figure 3 presents a summary of these steps and processes.

Sourcing the data, negotiating terms of use and contracts with data custodians, and establishing data transfer were expected to be difficult processes at the beginning of the project, about which, the interviews are expected to provide more information. Data sourced from within the AIHW would have been faster, and required less negotiation, contracts, and complexity of data transfer protocols. Once in place, arrangements with data custodians will likely require few changes for new or updated data to be used in the system. New arrangements may be needed if different data are required to be added to the system in the future.

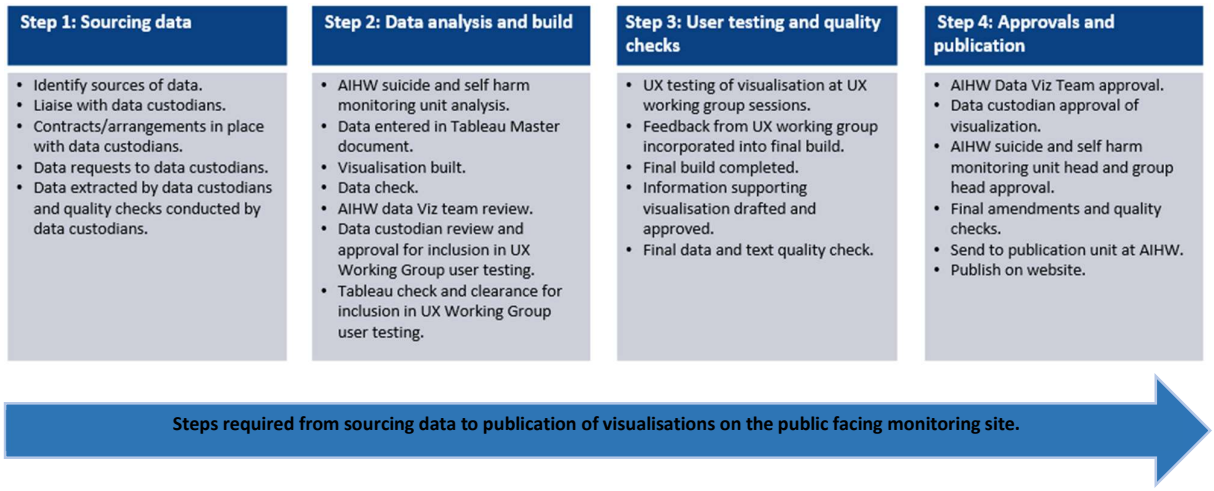


Figure 3: National Suicide and Self-harm Monitoring data processes for the Published Site.

The complexity of review, analysis and presentation of the data would have varied with the data sources and types. Across the Published Site, data from 10 sources were used to create the 37 visualisations and tables. Additional data were referenced throughout the Published Site in the descriptive information providing context for the visualisations and tables. Data such as the ABS Causes of Death data or familiar data from elsewhere within the AIHW, was likely to have been simpler to process and present on the Published Site compared with data that required new and unique linkages prior to analysis and presentation. New analyses were conducted with a linked data project of the Multi-Agency Data Integration Project (MADIP) Extract, and linked Personnel Management Key Solutions and National Death Index (PMKeyS-NDI) data 2001–2018. Projects were co-conducted with other AIHW teams and external researchers for analysis of psychosocial risk factors associated with suicide deaths, analysis of Australian Burden of Disease Study data, and first-time coding and analysis of ambulance attendance data. These ground-breaking analyses likely involved significant complexity while paving the way for simpler repeat analyses to be conducted on updated data in the future.

Between the beginning of data processing in May and launch of the Published Site in September 2020, 26 different types, and levels of checks and approvals were conducted on the data and visualisations to be reported. These were conducted by personnel within the unit responsible for the system, specific individuals within the AIHW, jurisdictional data custodians, data custodians of each source dataset, the User Experience Working Group, Everymind, the Australian Department of Health, the National Mental Health Commission, and the Expert Advisory Group. The types of checks and approvals conducted included data accuracy and quality checks, technical note accuracy and completeness checks, general site structure checks, general site content and communication checks, and statistical reviews.

Considering the uniqueness of the system and complexity of the initial efforts to gather data, build the site, and secure relevant approvals, the Published Site was published in a relatively short amount of time. The majority of data on the Published Site represents deaths and hospitalisations up to 2019. Some visualisations only present data up to 2015 while some data is as recent as 2020. It is important for prevention efforts for data to be available in a timely matter and the multi-year delay of suicide and self-harm data release is known to hamper prevention efforts. Due to the often-lengthy processes involved in the original collection and processing of data relating to suicide deaths and self-harm instances, accurate data has not always been made available to the system in a timely way to date. Data from the state and territory suicide registries has enabled more timely data to be included on the Published Site and the AIHW continue to work with these registries to increase the availability and inclusion of these data (see Section 5.3.3).

New data have been published for 14 of the visualisations on the Published Site since the initial release in September 2020. These updates have occurred as scheduled and within a week of updated source datasets being released by the data custodians.

6.4. Next steps

The second data audit will be conducted after the development of the State and Territory Information Portal in Phase 2. Further details for the second data audit will be determined following the release of further details of Phase 2 of the project.

7. Stakeholder interviews

7.1. Summary of methods

Semi-structured interviews are being conducted with a range of stakeholders across four defined stakeholder groups to assess the **usefulness**, **simplicity**, **acceptability** and **accessibility** of the system.

7.1.1. Participants

The four stakeholder groups are as follows:

- Group 1: those involved in the design and development of the system and data custodians supplying data to the system. Examples of participants include members of the Expert Advisory Group and User Experience Working Groups, representatives from the National Mental Health Commission, the Australian Government Department of Health, the Australian Bureau of Statistics and state-based suicide registers.
- Group 2: users of the Published Site. Examples of participants include researchers, clinicians, Non-Governmental Organisations, Primary Health Networks, journalists, suicide prevention educators, local council and LGBTIQ+ advocacy groups.
- Group 3: users of the State and Territory Information Portal. Examples of participants in this group will include individuals who have access to and use of the State and Territory Information Portal.
- Group 4: those involved in the development and use of similar systems in other countries. Examples of participants have included those associated with systems in Japan, United Kingdom, the United States, and Ireland.

7.1.2. Sampling, recruitment and sample size

For Groups 1–3 the evaluation team aimed to interview approximately 10–15 people per group (30–45 participants in total) and planned to continue recruitment until data had reached saturation with no new themes developing. With very few suicide and self-harm monitoring systems in other countries, the evaluation team aimed to interview approximately five people from Group 4. Over the course of recruitment, the evaluation team determined that more than 15 participants would be needed from Group 1 to reach saturation. This was due to the diversity of participants in Group 1, the variety of topics that were discussed in interviews and the themes that emerged in the analysis. Therefore, 22 participants have been recruited to Group 1 in order to reach saturation of themes. Recruitment progress to date is outlined below in Section 7.1.5.

The evaluation team are using purposive sampling where stakeholders that meet the inclusion criteria for each group are identified and added to a list of potential participants. The evaluation team has been working with the AIHW to identify potential participants who meet the inclusion criteria for Group 1. The evaluation team has independently identified potential participants for Groups 2 and 4. Over time, the evaluation team will work with the AIHW to identify potential participants for Group 3. All participants are being recruited via email.

7.1.3. Participants tasks

Participants are taking part in individual semi-structured interviews that take approximately 30 minutes to complete and are being conducted via Zoom.

7.1.4. Data collection and analysis

Interviews are being conducted over zoom, audio recorded and transcribed verbatim, an inductive and deductive coding framework has been developed and thematic analysis is being undertaken by the evaluation team using NVivo. Ten percent of the interviews will be co-coded for reliability.

7.1.5. Interview progress to date

To date, 43 interviews have been completed across three groups:

- Group 1: 22 interviews
- Group 2: 16 interviews
- Group 4: five interviews

All 43 interviews that have been completed so far have been transcribed. A coding framework has been developed and piloted on a portion of transcribed interviews and will be further refined over the course of the analysis. The evaluation team is in the process of reading and analysing the transcripts and refining the coding framework

7.2. Next steps

There is no discussion of interview results in this interim report as analysis for each group is still being undertaken. Over the coming months, the interviews for Groups 1, 2 and 4 will be analysed thematically by the evaluation team. The evaluation team in collaboration with the AIHW will identify potential participants for Group 3 interviews. These individuals will be contacted by the evaluation team via email and invited to participate in a semi-structure interview. Once these interviews have taken place, they will be transcribed and analysed thematically by the evaluation team. The results of the semi structured interviews for Group 1, 2, 3 and 4 will be delivered in the final evaluation report.

8. Case studies

8.1. Summary of methods

Three case studies will be undertaken to evaluate the **usefulness** of the System. The case studies will be informed by the interviews (which, as noted in Section 7, are currently underway) and will be centred around three separate stakeholder organisations. For each stakeholder organisation, an in-depth group interview will be undertaken with key members of the organisation to identify how the organisation has used the System to inform their suicide and self-harm prevention and postvention efforts. Each case study will use the same methods, but interview guides will be tailored specifically to each case.

8.1.1. Participants and recruitment

The participant case for the first case study is the Western New South Wales Primary Health Network. The cases for the second and third case study have not yet been confirmed. The evaluation team is currently working with the AIHW to determine the cases for the second and third case studies. When suitable cases for the second and third case studies have been identified and agreed upon by both the evaluation team and the AIHW, the organisations will be invited to participate in the case study by the evaluation team via email.

8.1.2. Participant tasks

Participants of each case study will participate in one 60-minute semi-structured group interview conducted by the evaluation team via Zoom.

8.1.3. Data collection and analysis

Interviews will be conducted by the evaluation team via Zoom, audio recorded and transcribed verbatim. A coding framework will be developed by the evaluation team and thematic analysis of transcripts will be completed using NVivo. The interview guide has been informed by the preliminary results from the semi-structured interviews which are currently being conducted and analysed (see Section 7) and aims to explore the **usefulness** of the system. If the relevant members of the case organisation are not available at the same time to participate in a group interview, the evaluation team will offer these people individual interviews, using the same interview guide.

8.1.4. Case study progress to date

The Western NSW PHN was approached by the evaluation team to assess their willingness to participate as a case study. The organisation has said they are willing and interested to participate. The consent form, plain language statement, question guide, and protocol (including details of sampling, sample size, recruitment, participant tasks, data collection and data analysis) has been finalised and submitted for review to the University of Melbourne Human Research Ethics Committee. The identification of the second and third case study is underway which involves ongoing conversations between the evaluation team and the AIHW. Once these organisations have been identified, a tailored interview guide will be developed and submitted for review to the University of Melbourne Human Research Ethics Committee. Once ethics approval has been granted, the group interviews will be arranged.

8.2. Next steps

There is no discussion of case study results in this interim report as the case studies have not yet taken place. Over the coming months, the group interview for the first case study will take place and the transcript will be analysed thematically by the evaluation team using NVivo. Additionally, the evaluation team in collaboration with the AIHW will identify potential cases for the second and third case studies. These cases will be contacted

by the evaluation team via email and invited to participate in a group interview. Once these group interviews have taken place, they will be transcribed verbatim and analysed thematically by the evaluation team using NVivo. The results of the case studies will be delivered in the final evaluation report.

9. Routinely collected analytics data

To gather insights into the use of both the Published Site and the State and Territory Information Portal, the evaluation team will work with the AIHW to secure routinely collected analytics data that is available from the time that each component of the system becomes operational. This is a supplementary data source for the evaluation.

The Published Site went live on September 29, 2020, and website analytics data have been collected, analysed and compiled into a document by the AIHW. A brief summary of these findings is provided at Table 3. The AIHW summary document, shared with the evaluation team initially in January 2021, then updated and shared in February 2021, provides insights into site traffic and user interactions with the Published Site from when it launched until mid-February 2021. The evaluation team will triangulate this summary information with data from interviews with users of the Published Site. The team will also triangulate with information collected in Case study 1 to further unpack and understand Published Site use and user behaviour. This process will be repeated with analytics data from the State and Territory Information Portal; triangulating those findings with data from interviews with the users of that part of the system and relevant information from Case studies 2 and 3. The findings about use and user behaviour can support decision making around further iterations to website architecture as well as digital marketing and promotion considerations. This will be included in the final evaluation report in December 2021.

Table 3: Snapshot summary of Australian Institute of Health and Welfare website analytics data and insights into the Published Site.

Website performance/use	Data/metrics	Insights
Site traffic	Clicks and impressions for AIHW suicide related content peaked in August 2020.	A peak period of search activity for 'Suicide rates 2020 in Australia' or related searches was noted in the three months prior to the Published Site being launched, coinciding with the Victorian COVID-19 extended lock down period. From November 2020, there has been steady growth in google traffic directed to the Published Site compared to other AIHW suicide related content. The Published Site is now the most popular destination for google searches on 'suicide statistics in Australia' though traffic to the AIHW 'Australia's Health snapshots > Suicide and intentional Self-harm' still competes for traffic with the Published Site. The 'Deaths by suicide over time' page was the third most popular page on the overarching AIHW website between 24/12/20 – 20/01/21.
Website page views	>14000 unique page views each for the Published Site 'home' page and 'Deaths by suicide over time' page between 29/09/20 – 14/02/21. >5000 unique page views for the 'COVID-19' page and the 'Data home page'. Since December 2020, 'Deaths by suicide over time'	The top 5 viewed pages within the Published Site between 29/09/20 – 14/02/21, in order of number of views were; the site home page, 'Deaths by suicide over time', 'Data home page,'COVID-19' page, and 'Data downloads' page. Google ranking of webpages influences unique page views. A lot of traffic is being diverted to the 'Deaths by suicide' and 'COVID-19' webpages. This has implications for how a viewer first lands on the Published Site and what associated content they see and do not see if they enter via a specific webpage. Ensuring safety notices are included on each page (i.e., warnings, explanatory text, signposting to services), contextual

	site views are higher than the Published Site 'home' page	information on the project is provided briefly on each page and supporting navigation back to introductory pages may be elements worthy of further consideration.
Webpage views by category	>20,000 aggregate views of data pages on the website related to suicide.	Data pages and research/information pages related to suicide were the most viewed categories compared to the 'about' pages, and pages about intentional self-harm. 'Suicide by local areas' was the most popular geographic data page and was within the top ten most popular pages on the Published Site.
Time on page	Average time spent on the 'Deaths by suicide over time' is 2.28 minutes with 'new' users spending 2.11 minutes compared to 'return' users spending 3.56 minutes. Return users engage for longer periods of time (>4.45 minutes) viewing more in-depth materials on the Published Site: 'Suicide in young people' 'Psychosocial risk factors for suicide' and 'Suicide in Indigenous Australians' webpages.	New users and return users have different user behaviour, especially for the 'deaths over time' page. Return visitors appear to be interested in suicide in specific populations (especially suicide in Indigenous populations), as well as some of the more in-depth analyses/research presented on the Published Site that explores psychosocial and behavioural risk factors for suicide.
User engagement on popular webpages	Site improvement heat mapping is being conducted for insights into user engagement of the 'Deaths by suicide over time' and 'COVID-19' pages.	Given the popularity of the 'Deaths by suicide over time' and 'COVID-19' webpages, consideration of the user experience of these pages will be important.
Referral traffic	Between 24/12/20 – 20/01/21, Google search directed 72.8% of traffic to the 'Deaths by suicide over time' page. AIHW website promotion referred 11.7% of the traffic. Referral from the National Mental Health Commission website accounted for 3.6% of all referrals. Other sources individually provided between 0.3–1.6% of referrals.	Google is the main referrer of traffic to the Published Site. Some referral traffic is coming from the National Mental Health Commission Website, but this could be improved. Referral traffic from other sector related organisational websites were not noted for this period.

10. Discussion

10.1. Summary of evaluation activities and preliminary findings

The evaluation of the National Suicide and Self-harm Monitoring Project and System has been deliberately designed to run alongside the Project as it develops and establishes the System, so that early findings can inform future development and quality improvements to the System over time. Using the CDC framework and the program logic to guide the evaluation allows for an assessment of whether the Project and System are meeting their objectives, and the extent to which the System demonstrates attributes known to be important for public health surveillance systems.

The evaluation is drawing on six data sources: three primary data sources (data audits, stakeholder interviews, and case studies) and three supplementary data sources (key document review, observational and participatory data, and routine analytics data). These sources will be triangulated to cross-verify results from each data source and together, be synthesized to answer the evaluation questions. This triangulation occur once data from all sources have been collected and analysed, with reporting due in late December 2021. To date, most evaluation activity has been related to evaluation of Phase 1 of the Project, the development of the Published Site. This includes data collection related to the key document review, observational and participatory data, first data audit, stakeholder interviews and routine analytics data. While some preliminary findings have been reported in this interim report, it is important to note that two of the primary data sources (the stakeholder interviews and case studies) are currently still in data collection and analysis phases. The interviews are gathering qualitative data from a range of stakeholders across four defined groups to assess the **usefulness**, **simplicity**, **acceptability** and **accessibility** of the System. These interviews commenced in November 2020 and 43 interviews have been conducted to date. The case studies will focus on three different user organisations and will assess the utility of System from the perspective of three different organisational stakeholders. One organisation has been identified and agreed to take part; the other two organisations are still being confirmed. The case studies will be conducted between March 2021 and November 2021.

Preliminary findings from the key documents review and observational and participatory data, the first data audit and the routinely collected analytics data shed some light on the development and performance of the Published Site and data development activities conducted so far. To date, evaluation findings highlight that development of the Published Site has involved engagement with a broad range of identified stakeholders of the System from the outset, including end users and beneficiaries of the System. This has ensured that user needs, and preferences are considered and built into the design of the System. Early feedback from stakeholders has enabled iterative development of the Published Site and consideration of system attributes such as **simplicity**, **acceptability** and **accessibility** before the site was launched. Whether this has translated into recognition of these attributes by users of the Published Site will be elicited from stakeholder interviews of site users (Group 2) and reported in the final evaluation report.

As public health surveillance systems are only as strong as the data and information they house, an important component of the evaluation is to assess the **quality** and **sensitivity** of the data within the System. The first data audit was conducted to examine the internal consistency, sensitivity, completeness, and representativeness of data on the Published Site. The results of an evaluation of a representative sample of the Published Site's data highlighted excellent internal consistency between visualisations of data and their associated supplementary data tables. Assessments of the sensitivity of the data (where data on the Published Site was compared to other publicly available valid data sources to assess their level of agreement) produced mostly favourable results though five visualisations reported differences in data compared to the comparison datasets. These differences were likely due to differences in the coding used to identify suicide deaths and intentional self-harm hospitalisations, as well as differences in the use of adjusted and updated data. In both cases, the Published Site has reported data using the current best practice methods. Work to address issues of inconsistencies of such have been included in the development work of the wider project. Complementing the data audit, an assessment of data processes highlighted the extensive amount and level of checks and approvals conducted on

the data and visualisations prior to the launch of the Published Site. The types of checks and approvals conducted included data accuracy and quality checks, technical note accuracy and completeness checks, general site structure checks, general site content and communication checks, and statistical reviews emphasizing a stringent quality control process. In terms of representativeness, the Published Site included sections for reporting on suicides and instances of self-harm in young people, Indigenous people, and Australian Defence Force personnel. However, these sub-groups of the population currently have limited data reported on the Published Site. While confidentiality requirements may potentially preclude some reporting due to small numbers that would result from de-aggregated data, there may also be issues with collection of source data across Australia for these groups. Notably absent from the Published Site were data on other population sub-groups such as LGBTIQ+ people, people with chronic disease, injured workers, people with mental illness and people with drug and alcohol use problems. While it is likely that sourcing reliable and accurate data on these sub-groups is currently a challenge, the importance of publishing these data could be considered as part of data development activities in the future.

Website analytics data points to the Published Site being a key source of information for viewers searching for 'suicide rates over time' as well as those seeking timely updates on how COVID-19 is impacting population rates of suicide and self-harm. Return visitors to the Published Site appear to be interested in population sub-groups and the more detailed analyses focused on psychosocial and behaviour risk factors and suicide. Tangible evidence of data development activities going on behind the scenes is evident through the inclusion of publication of more timely data sources for the first time in the public domain, such as ambulance attendance data of suicidal behaviours and suicide registry data of suspected suicides. The evaluation remains in a data collection and analysis phase with evaluation activities related to Phase 2 of the Project (the development of the State and Territory Information Portal), and all case studies to be conducted throughout the remainder of 2021. While this interim report has provided some preliminary findings, the final evaluation report will deliver a full synthesis of triangulated data sources to answer the evaluation questions and present recommendations for future development and sustainability of the System.

10.2. Monitoring external factors impacting the Project and System

No project exists within a vacuum. They are always embedded within a dynamic and ever-changing environment which inevitably impacts how the project is implemented and what it then accomplishes. The National Suicide and Self-harm Monitoring Project is no exception. There are some notable external factors, such as the COVID-19 pandemic and national and state policy developments in mental health and suicide prevention, that have occurred during the time that the Project has been running. These factors have influenced project activities and system development, and therefore warrant monitoring as part of the evaluation. The following provides some qualitative assessment of how these external factors may have intersected with the Project and resulting system to date.

10.2.1. COVID-19 pandemic

2020 was a year like no other. The COVID-19 pandemic arrived and continues to dominate all aspects of Australian life. As this international crisis has played out, the health, social and economic impacts to many Australians have been devastating.

There has been plenty of discussion in the media on the effect of the COVID-19 pandemic on suicide and self-harm, though much of it has been speculative rather than based on data and empirical evidence (15). While studies are continuing to emerge from countries around the world providing empirical evidence, all these studies are reliant on having access to timely, high quality data sources to support real-time monitoring of pandemic impacts on suicide. It is these data that are informing decision making and policy developments by governments around the world. For example, in response to several concerning trends including a noted rise in suicide deaths in women in 2020, the Prime Minister of Japan has recently appointed a Minister of Loneliness to his cabinet (16). The suicide data helping to inform this decision was sourced from Japan's system of tracking deaths by

suicide recorded by police investigations from the National Police Agency (17). This is an additional timely source of suicide data that Japan collects alongside data from the Vital Statistics of Japan. The latter data source is drawn from the death certificates issued by physicians, a process that takes time and inevitably leads to delays in official reporting of suicide statistics.

The pandemic has shone a spotlight on the importance of collection and sharing of timely data to inform and support real-time policy and practice responses. This has no doubt reinforced the importance of the National Suicide and Self-harm Monitoring Project and System here in Australia. Based on what has been noted in the evaluation so far, the project is already part-way to achieving its goal of establishing suicide registers recording suspected or probable suicides in all state/territory jurisdictions. All jurisdictions now have a register in place or are in the process of establishing one. Additionally, the inclusion of ambulance attendance data of self-harm behaviours and mental health in the system provides another source of timely incident data of self-harm in the community. It is understood that the AIHW is drawing on these data sources and other mental health related sources to support timely reporting to the Prime Minister's Office, The Australian Government Department of Health, the National Mental Health Commission, and other government departments. This triangulation of multiple timely suicide and self-harm data sources for frequent national level reporting appears to be novel when comparing to what is currently being done in other countries. For this reason, It is anticipated that one of the case studies, as part of the evaluation, will enable further exploration of the utility of the system to work in a dynamic way to support national level reporting, decision making and policy responses.

The sharing and reporting of some of these timely data sources on the COVID-19 page of the Published Site, is also tangible output and demonstration of the work being done to increase the access and use of these data. This includes a commitment to increasing public awareness and understanding of real-time trends in suicide and self-harm including dispelling myths and misconceptions around the impact of the pandemic on suicide and self-harm. This is not going unnoticed; according to website analytics data, the COVID-19 webpage was one of the most viewed webpages on the Published Site between December 2020 and February 2021, signalling the very real interest in this public health issue.

10.2.2. Policy developments

In 2020, the Productivity Commission Inquiry into Mental Health Final Report (Volumes 1-3) (18) was made publicly available, as was the Interim Advice Report (made up of four documents) (19) by the National Suicide Prevention Adviser, designed to inform and complement the Government's "Toward Zero Suicides" initiatives. These landmark documents signal in-principle recommendations for system and sector reform related to mental health and suicide prevention in Australia. Additionally, in early 2021, the State of Victoria, Royal Commission into Victoria's Mental Health System Final Report (20) was released which sets out a reform agenda to redesign Victoria's mental health and wellbeing system. When considering these policy documents together, there are some notable recommendations that interact with, and either directly or indirectly influence the ongoing project activities and development of the National Suicide and Self-harm Monitoring System. These include:

Whole of government approaches to suicide prevention

The documents speak to the need for whole of government and cross-portfolio approaches to suicide prevention. This includes greater emphasis on different levels of government working in coordinated and cohesive ways to tackle suicide and self-harm in the community. The access and sharing of suicide and self-harm data between different levels of government and between governmental portfolios within a jurisdiction, will be paramount in supporting such efforts. This reinforces the importance of the system to continue to develop with this function and use in mind. It is anticipated that the State and Territory Information Portal will provide opportunity at the state and territory level to be a single point of access for suicide and self-harm data for the jurisdictions, potentially enabling cross-portfolio planning as part of suicide prevention efforts.

Universal access to aftercare

Action 9.1 of the Productivity Commission report calls for universal access to aftercare programs (18). Recommendation 27 of the Royal Commission into Victoria's Mental Health System Final Report (20) also refers to the need for aftercare. Aftercare programs are programs designed to provide timely support for people after a suicide attempt in order to prevent further attempts or death by suicide. They are usually offered to people who have presented to an emergency department after a suicide attempt or during admission for an attempt. At present, current emergency data collection, the National Non-admitted Patient Emergency Department Care Database cannot identify suicide and self-harm related presentations in emergency departments, therefore inhibiting the ability of governments to monitor rates of follow up after suicide attempts. The data development work being done as part of the National Suicide and Self-harm Monitoring Project, to support nationally consistent identification of suicide attempts in emergency departments, will facilitate the implementation and monitoring of this reform.

Improving data usability and addressing data gaps

In the 'Enablers of Reform' section of the Productivity Commission report (18), there are recommendations made that address data issues in mental health and suicide related data. Action 24.1 calls for a strategy to improve the usability of existing data collections to maximise their utility. This explicitly notes the need for data linkage of data sets that are collected at different government levels. Prioritising data and information gaps in current collections of mental health and suicide is also noted. These recommendations resonate with the strong emphasis on data development activities being conducted as part of the project broadly but also specifically, the focus on data linkage research projects to provide more in depth understanding of psychosocial and behavioural factors in suicide and self-harm. For example, analysis presented on the 'social factors and suicide' page of the Published Site is the result of a bespoke analysis of linked data specifically conducted for the site which has provided new insights into the relationship between suicide risk, employment, and education in Australian men. The utility of investing in data linkage projects is likely to emerge over time as these analyses contribute to the wider body of knowledge around risk and protective factors for suicide and self-harm.

Lived experience expertise at the core of suicide prevention policy and practice

The Compassion First Report, part of the Interim Advice report (19) concluded that lived experience of suicide must be prioritised and integrated into the planning and delivery of suicide prevention at all stages: from research that aims to build the evidence base; for government policy and program planning; for service design and delivery; and in evaluation. Based on observational and participatory data reported in this interim report, positioning the lived experience voice at the core of the Project and in particular, the development of the Published Site appears to resonate with this central principle of how suicide prevention, more broadly, should be done now, and into the future.

11. Conclusion

This interim report provides an update on evaluation activities and some preliminary findings for the evaluation of the National Suicide and Self-harm Monitoring Project and System. To date, preliminary findings have been largely positive in relation to the development and early performance of the Published Site. However, data collection and analysis will continue throughout 2021, following timelines and activities related to the second phase of the Project; the development of the State and Territory Information Portal. Once all data collection is completed, triangulation and final syntheses to answer evaluation questions will be presented in the final evaluation report in late December 2021.

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Contact: Anna Flego. anna.flego@unimelb.edu.au