Royal Commission into
Victoria's Mental Health System

WITNESS STATEMENT OF JEREMY DWYER

I, Jeremy Dwyer, Manager, Suicide, Mental Health and General Investigations, Coroners Prevention Unit, Coroners Court of Victoria, of 65 Kavanagh Street, Southbank, in the State of Victoria, say as follows:

1 I am authorised by the Coroners Court of Victoria (**CCOV**) to make this statement on its behalf, limited to the matters outlined in this statement.

2 I make this statement on the basis of my own knowledge, save where otherwise stated. Where I make statements based on information provided by others, I believe such information to be true.

Background and qualifications

3 I have been awarded a Bachelor of Science and Bachelor of Arts (Honours) from Monash University.

4 Additionally, I have been awarded a Doctor of Philosophy from Monash University.

5 Over the past 10 years I have worked at the CCOV, within the Coroners Prevention Unit (**CPU**), in various roles including as a Case Investigator, Senior Case Investigator, Acting Manager, and in my current position as Manager, Suicide, Mental Health and General Investigations.

6 Prior to working at the CCOV, I was employed by Monash University as a Sessional Lecturer and Course Coordinator within the School of Political and Social Inquiry, with a focus on contemporary Russian politics.

7 I have contributed to publications relating to deaths and suicides, which were published in referred journals. My most recent contribution was to an article on the topic of the differences by age and sex in adolescent suicide, published by the Australian and New Zealand Journal of Public Health. Now produced and shown to me and marked **JD-1** is copy of my current Curriculum vitae.

Coroners Court of Victoria

8 The CCOV is a specialised inquisitorial court, which was established on 1 November 2009 pursuant to the *Coroners Act 2009* (Vic), and replaced the former State Coroner's Office.

9 The CCOV is responsible for the independent investigation of deaths and fires for the purpose of finding the causes of those deaths and fires, contributing to the reduction of the number of preventable deaths and fires, the promotion of public health and safety, and the administration of justice.

Current role and responsibilities

10 I commenced my current role as Manager, Suicide, Mental Health and General Investigations within the CPU of the CCOV in October 2017.

11 In this role I am responsible for coordinating the work of four case investigators, and three staff responsible for maintaining the Victoria Suicide Register (**VSR**).

12 In addition to my management responsibilities, this role requires consultation with Coroners regarding assistance required during the investigation process, analysing case file material, using Coronial databases to investigate the nature and frequencies of relevant deaths and their circumstances, risk factors and opportunities for prevention. I also build and maintain databases to manage large datasets for investigations.

13 I was a core member of the team responsible for developing the VSR. My involvement with the VSR led to me being requested to build the Tasmanian Suicide Register for the Coroners Court division of the Magistrates Court of Tasmania.

14 I also led the engagement between the CCOV and the Department of Health and Human Services (**DHHS**) to support the DHHS's suicide prevention place-based trials. This included the development of a prospective suicide surveillance system which identifies local government areas where there may be an elevated frequency of suicides.

15 For the purpose of the Royal Commission into Victoria's Mental Health System I have prepared a report titled 'Suicide and Mental Ill Health in Metropolitan Melbourne and Regional Victoria: Data Summary' (**Report**). Now produced and shown to me and marked **JD-2** is a copy of my Report.

What is the Coroners Prevention Unit within the Coroners Court of Victoria?

16 The CPU is a specialist service for Coroners, which supports Coroners in the development of coronial recommendations.

What services does the Coroners Prevention Unit provide and who does it serve?

17 The CPU primarily serves Coroners by providing expert assistance in reviewing a range of reportable and reviewable deaths, collecting and analysing data, assisting in the

development of prevention-focussed coronial recommendations, and receiving and publishing recommendations.

18 The CPU also responds to requests from a range of external organisations for coronial data, including in relation to suicide deaths.

What is the Victorian Suicide Register?

19 The VSR was designed, built and piloted by the CPU between 2011 and 2012, and contains detailed information relating to suicides that have occurred in Victoria since that time.

20 The VSR is recognised as the most accurate and timely source of detailed information on suicide in Victoria.

What is the purpose of the Victorian Suicide Register?

21 At Section 2.5 of my Report I explain the primary purpose of the VSR is to assist Coroners in conducting investigations into suicide deaths, and to produce data and evidence to support recommendations in suicide prevention.

22 The VSR is also a resource for other organisations for use in developing suicide prevention policy, initiatives and academic research.

23 By way of example, on 6 February 2018, a Memorandum of Understanding was signed to formalise and facilitate the sharing of information regarding suicides between CCOV and the DHHS. The CPU has provided extensive data on suicides across Victoria to assist the DHHS with its suicide prevention initiatives.

24 Additionally, the CPU is currently working with the DHHS and other partners on a data linkage project to understand how people who suicide engaged with public mental health services, and is assisting the Office of the Chief Psychiatrist, by way of the provision of data, to identify people at risk of suicide among clients of public mental health services.

How are cases identified for inclusion in the Victorian Suicide Register?

25 As detailed at Section 2.2 of my Report, cases are identified for inclusion in the VSR as probable or possible suicides primarily by surveillance conducted by the CPU upon deaths being reported to the CCOV.

26 Regular searches of CCOV databases and the National Coronial Information System are also conducted by the CPU to identify any further probable or possible suicides.

What type of data is held on the Victorian Suicide Register?

27 I explain the data held by the VSR at Section 2.1 of my Report.

28 In summary, the VSR comprises a core dataset and an enhanced dataset.

What is the core dataset and what time period does it cover?

29 The core dataset encompasses the basic information that is available to coders within the CPU when a death is first reported to the CCOV or shortly thereafter.

30 This includes the deceased's age, sex, name, date death was reported, circumstances of death as described in the Victoria Police Initial Report of Death to the Coroner, suicide method, location of usual residence and location of fatal incident.

31 Section 2.4 of my Report notes that the full VSR core dataset is maintained prospectively, meaning suspected suicides are monitored in 'near real time' with the dataset being updated each weekday, and is available for all suicide deaths reported to the CCOV (and its predecessor, the State Coroner's Office,) from 1 January 2007 to present.

What is enhanced data and what time period does it cover?

32 The enhanced dataset encompasses binary, categorical and free-text information across the nine main areas listed at Section 2.1 of my Report.

33 This information is typically only available in a sufficiently reliable and detailed form after the investigating Coroner has received the Coronial Brief of Evidence prepared by the Coroner's investigator, a member of Victoria Police, and other information requested by the investigating Coroner.

34 Section 2.4 of my Report explains the resource intensive nature of maintaining the enhanced dataset, and that as at 1 June 2019 the enhanced dataset covers the period 1 January 2009 to 31 December 2015.

Are there any limitations of the Victorian Suicide Register?

35 This is addressed at Section 2.6 of my Report.

36 The data held on the VSR in respect of each death varies from case to case as the amount and nature of data available to be coded depends upon the material gathered during the Coronial investigation process.

37 The content of the VSR is a dynamic data source which is continually revised and updated. Accordingly, data on a specific matter may vary depending upon the time of its extraction from the VSR.

Data on death by suicide

How are suicide rates calculated?

38 Suicide rates are calculated by considering the frequencies of suicides divided by the resident population estimate.

39 When comparing rates across different sources, consideration needs to be given to any differences in calculation methods that may exist.

40 As explained at Section 3.2 of my Report, some researchers prefer to calculate suicide rates using the whole population as the denominator, whereas others may exclude part of the population because there are no reported instances of suicide (for example, excluding from the population for the relevant period of time Victorians aged under 10 years where the youngest reported suicide was by a 10 year old).

What is the suicide rate in Victoria, and has it changed significantly over the last 10 years?

41 Table 3 in Section 3.2 of my Report shows the current suicide rate is 12.7 deaths per 100,000 people.

42 The suicide rate in Victoria has not changed substantially over the past 10 years.

How does the Victorian suicide rate compare to other Australian jurisdictions and the national suicide rate?

43 As noted at Section 3.3 of my Report, the CCOV does not hold data on suicides frequencies and rates in other Australian States and Territories.

44 The only organisation that systematically collates data of this type is the Australian Bureau of Statistics (**ABS**) in its 'Causes of Death Australia' catalogue.

45 Whilst this catalogue is an appropriate resource for understanding how the Victorian suicide rate compares to other States and Territories, caution should be exercised when comparing rates sourced from VSR data with the ABS rates.

46 This is because different counting rules are utilised by the CCOV and ABS, different material is available to the CCOV and ABS when classifying deaths, and the ABS calculates and reports age-standardised death rates (a rate statistic not used by the CCOV).

How is mental illness defined for the purpose of the Victorian Suicide Register?

47 This is addressed at Section 5.1 of my Report.

48 For the purpose of the VSR, mental illness is classified according to the Mental and Behavioural Disorders section of the International Statistical Classification of Diseases and Related Health Problems (10th revision).

How is suspected mental illness defined for the purpose of the Victorian Suicide Register?

49 A mental illness is coded as *diagnosed* in respect of a person who has suicided if there is clear evidence that a formal diagnosis was made by a clinician.

50 A mental illness is coded as *suspected* in respect of a person who has suicided in two instances.

51 Firstly, if the evidence does not indicate a clinician made a clear formal diagnosis, but there is reference to traits or symptoms. For example, a clinician may use the term 'borderline personality traits', rather than make a clear diagnosis of 'border line personality disorder'.

52 Secondly, in cases where there is evidence from a non-clinician that the deceased had a mental illness diagnosis, despite there being no direct evidence from a clinician.

What are the current Victorian suicide rates for the following demographics:

Age

53 Please see Section 3.2 and Table 4a of my Report.

Sex

54 Please see Section 3.2 and Table 3 of my Report.

55 Please also see Tables 4b and 4c at Section 3.2 of my Report where data demonstrating sex-specific annual suicide rates by age group has been provided.

56 However, please note that such disaggregation would not ordinarily be conducted by the CCOV due to the issues associated with reliability in rates when utilising low frequencies and the difficulties in interpreting data presented this way, as explained at Section 3.2 of my Report.

Location (rural or metropolitan)

57 Please see Section 4 and Tables 10a, 10b, 11a and 11b of my Report.

Aboriginal or Torres Strait Islanders

58 Please see Section 6 of my Report which explains the difficulties associated with calculating the current Victorian suicide rate for this demographic.

59 Section 6.2 of my Report notes that the crude average annual suicide rate for the time period 2009 to 2015 for this demographic was 15.1 Victorian suicides per 100,000 Victorian population of Aboriginal and Torres Strait Islanders.

High risk groups/cohorts

60 The difficulties associated with identifying suicides among people who belong to a particular social or other group and in establishing the size of the relevant population is explained at Section 7.3 of my Report.

Persons with a diagnosed mental illness or suspected mental illness

61 As noted at Section 7.3 of my Report, the CCOV cannot provide suicide rates for those with a diagnosed mental illness and those with a suspected mental illness due to difficulties associated with identifying the appropriate populations.

What data is available for health service contacts for mental health related issues?

62 The VSR includes information on health service contacts for mental health issues which occurred either 12 months before death or 6 weeks before death.

63 The data available is considered at Section 5 of my Report.

How are health service contacts classified?

64 This is addressed by Section 5.2 of my Report.

65 In summary, health service contacts are classified according to the treatment setting, including whether treatment is voluntary or compulsory, and as to whether the person was an inpatient or community patient. Contact is then further coded by the type of clinician involved.

What does the data show?

Has the suicide rate for any of the demographics considered above changed significantly over the past 10 years?

Age and (b) gender

66 As noted at Section 3.2 of my Report, the annual suicide rate for males has been consistently higher than that for females. For both, there was a decline in the annual suicide rate between 2009 and 2010, followed by a gradual increase through to 2018.

67 In relation to the average annual suicide rate from 2009 to 2018, the rate increased for males in the 45 to 54 age category, and then declined before substantially increasing for men aged 85 years and older. Similarly for females the rate increased in the 45 to 54 age category, however it declined thereafter.

Location (rural or metropolitan)

68 Section 4.2 of my Report notes that for the period 2009 to 2018 there was a slight general increase over time in the annual suicide frequency in both Metropolitan Melbourne and Regional Victoria, and across both males and females that reside in both locations.

69 Table 9 of my Report shows that in the youngest age groups in both Metropolitan Melbourne and Regional Victoria, the proportion of male and female suicides was approximately equal, but with increasing age settled into the patterns reflected in Table 8 of my Report.

70 Tables 10a and 10b most notably show that the annual suicide rate per 100,000 people was markedly higher for males residing in Regional Victoria than males residing in Metropolitan Melbourne.

71 Similarly, Tables 11a and 11b demonstrate that the average annual suicide rate in almost all age groups for males was notably higher for those who reside in Regional Victoria, than in Metropolitan Melbourne.

72 As noted at Section 7.1 of my Report, whilst differences exist between Metropolitan Melbourne and Regional Victoria, differences at a more granular level between local government areas within Metropolitan Melbourne and within Regional Victoria may also be important to consider.

Aboriginal or Torres Strait Islanders, (e) high risk groups/cohorts and (f) persons which a diagnosed mental illness or suspected mental illness

73 For the reasons identified at Sections 6 and 7 of my Report, I am unable to comment on trends relating to these demographics.

Which cohorts of the community are particularly at risk of death by suicide?

74 Please see section 7.3 of my Report.

Please explain the data insofar as it relates to people who died by suicide who had a mental illness or a suspected mental illness

75 Please refer to paragraph 61 above.

Please explain the data insofar as it relates to people who died by suicide and who had contact with health services for mental health related issues

76 Sections 5.2 and 5.3 of my Report addresses health service contact for mental health related issues which occurred either 12 months before or six weeks before death for the period 2009 to 2015.

Within 12 months of death

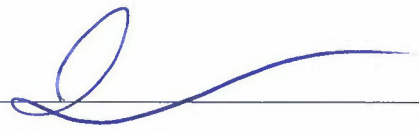
77 Table 13a of my Report shows that, subject to one exception, regardless of usual residence (Metropolitan Melbourne or Regional Victoria), across all treatment settings, a higher proportion of females generally had contact with health services than males. The exception to this statement is that a higher proportion of males than females were involuntary community patients in Regional Victoria.

78 The data also shows that regardless of sex, a higher proportion of people in Metropolitan Melbourne had contact across all treatment settings, when compared with Regional Victoria.

79 Table 13b of my Report shows general practitioners were the most involved clinicians.

Within six weeks of death

80 Tables 14a and 14b show the same general patterns regarding health services contact for within six weeks of death as is the case for within 12 months of death.

sign here ▶ 

print name Jeremy Dwyer

date 17 July 2019

Royal Commission into
Victoria's Mental Health System

ATTACHMENT JD-1

This is the attachment marked 'JD-1' referred to in the witness statement of Jeremy Dwyer dated 17 July 2019.

Curriculum vitae

Jeremy Dwyer
Coroners Court of Victoria
65 Kavanagh Street Southbank 3006

Recent employment

Multiple positions **Feb 2009 - present**
Coroners Prevention Unit
Coroners Court of Victoria

Over the past 10 years I have worked in the Coroners Prevention Unit (CPU), a multi-disciplinary Unit that provides advice to Victorian coroners on opportunities for reducing preventable deaths. My roles have included:

- Case Investigator (Feb 2009 - Jun 2014)
- Senior Case Investigator (Jun 2014 - Jul 2015)
- Acting Manager (Jul 2015 - Feb 2017)
- Senior Case Investigator (Feb 2017 - Oct 2017)
- Manager Suicide, Mental Health and General Investigations (Oct 2017 - present)

In my current role, I coordinate the work of four case investigators as well as three staff who maintain the Victorian Suicide Register (VSR). I also assist Victorian Coroners directly with their investigations into complex cases, and maintain several databases used to produce evidence-based advice for Coroners. Selected highlights include:

- I was a core member of the team that developed and built the VSR, which is now recognised as the most accurate and timely source of detailed information on suicide in Victoria.
- I compiled data and drafted advice to assist Victorian Coroners in several high-profile suicide investigations, including investigations into suicide among current and former serving Australian Defence Force personnel; and suicides among international students.
- I led the Coroners Court of Victoria's engagement with the Victorian Department of Health and Human Services to support the Department's suicide prevention place-based trials. This included development of a prospective suicide surveillance system to identify local government areas where there may be an elevated frequency of suicides.
- I built the Tasmanian Suicide Register (based on the VSR) for the Coroners Court division of the Magistrates Court of Tasmania.

Sessional Lecturer and Course Coordinator **2006 - 2008**
School of Political and Social Inquiry
Monash University

Between 2006 and 2008 I researched, wrote and delivered the seminar series on contemporary Russian politics for second- and third-year students; set and graded all assessment tasks; and performed relevant administrative duties. A key skill I developed was the ability to present the course material using a diverse range of techniques to maintain student interest while communicating key concepts.

Tertiary education

Bachelor of Science, Monash University.

Bachelor of Arts (Honours), Monash University.

Doctor of Philosophy, Monash University.

Selected refereed publications

Lee S, **Dwyer J**, Paul E, Clarke D, Treleaven S, Roseby R. Differences by age and sex in adolescent suicide. *Australian and New Zealand Journal of Public Health*. 43(3). 2019.

Ogeil R, **Dwyer J**, Bugeja L, Heilbronn C, Lubman D, Lloyd B. Pharmaceutical opioid overdose deaths and the presence of witnesses. *International Journal of Drug Policy*. 55. 2018.

Sutherland G, Milner A, **Dwyer J**, Bugeja L, Woodward A, Robinson J, Pirkis J. Implementation and evaluation of the Victorian Suicide Register. *Australian and New Zealand Journal of Public Health*. 42(3). 2018.

MacIsaac MB, Bugeja L, Weiland T, **Dwyer J**, Selvakumar K, Jelinek GA. Prevalence and Characteristics of Interpersonal Violence in People Dying From Suicide in Victoria, Australia. *Asia-Pacific Journal of Public Health*. 30(1). 2018.

Koppel S, Bugeja L, Smith D, Lamb A, **Dwyer J**, Fitzharris M, Newstead S, D'Elia A, Charlton J. Using medico-legal data to investigate fatal older road user crash circumstances and risk factors. *Traffic Injury Prevention*. 19(2). 2018.

Lloyd B, **Dwyer J**, Bugeja L, Jamieson A. Alprazolam in fatal overdose following regulatory rescheduling: A response to Deacon et al. *International Journal of Drug Policy*. 39. 2017.

Bugeja L, **Dwyer J**, McIntyre DJ, Young J, Stephan KL, McClure RJ. Sleep-Related Infant Deaths in Victoria: A Retrospective Case Series Study. *Maternal and Child Health Journal*. 20(5). 2016.

Bugeja L, **Dwyer J**. Enabling public health and safety through the coroners' death investigation system: The principles and practice of the Coroners Prevention Unit. *Grief Matters: The Australian Journal of Grief and Bereavement*. 7(1). 2016.

Referees

(Provided on request)

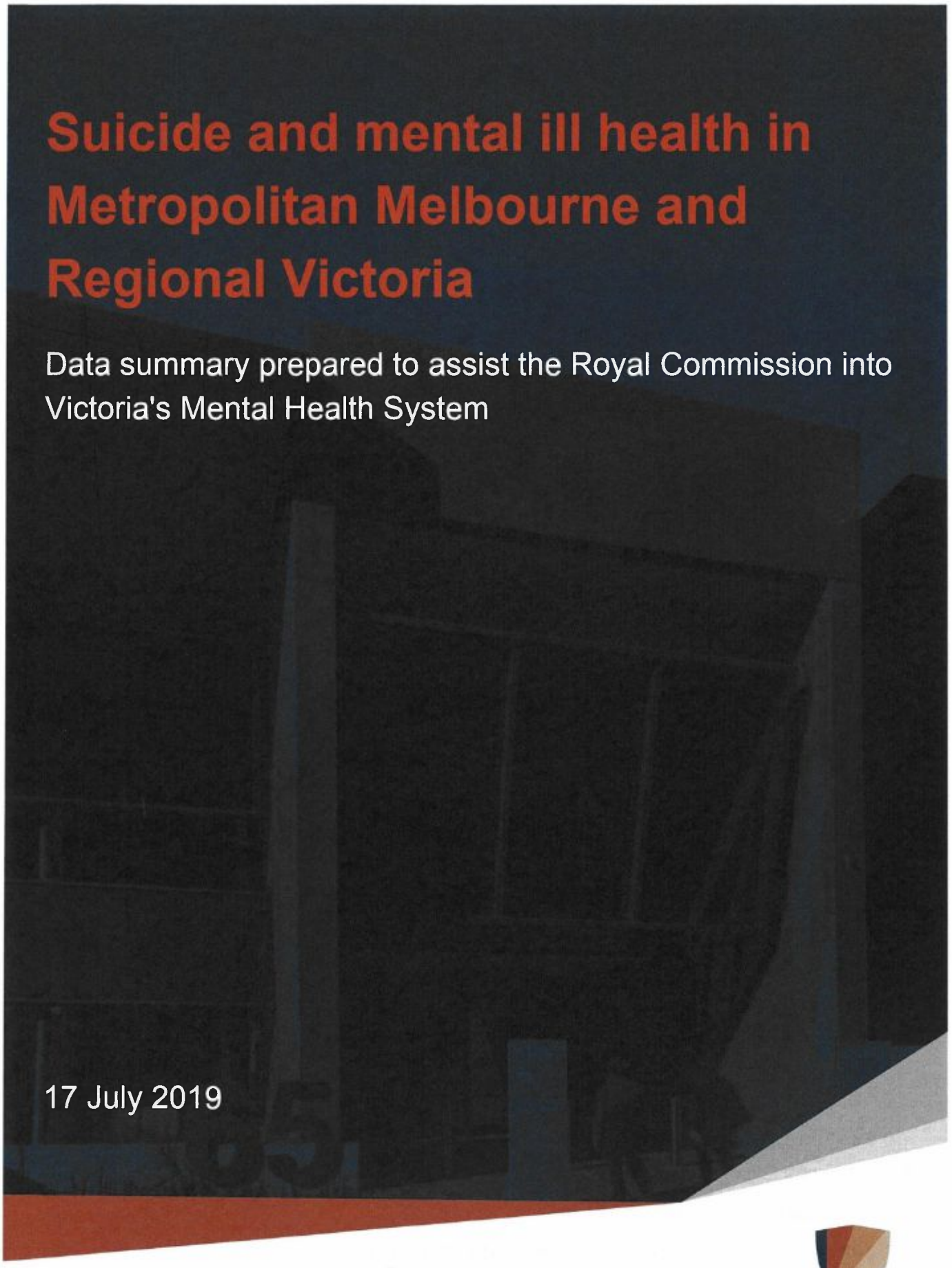
Royal Commission into
Victoria's Mental Health System

ATTACHMENT JD-2

This is the attachment marked 'JD-2' referred to in the witness statement of Jeremy Dwyer dated 17 July 2019.

Suicide and mental ill health in Metropolitan Melbourne and Regional Victoria

Data summary prepared to assist the Royal Commission into Victoria's Mental Health System



17 July 2019

Coroners Court of Victoria

www.coronerscourt.vic.gov.au

Table of Contents

1. Background

The Royal Commission into Victoria's Mental Health System requested information on suicide frequencies and rates across the following domains:

- Age group
- Sex
- Location of usual residence (Metropolitan Melbourne versus Regional Victoria)
- Presence of diagnosed mental ill health
- Whether the deceased were Aboriginal and Torres Strait Islander people.

The Coroners Court of Victoria (CCOV) prepared this suicide data summary in response, using its Victorian Suicide Register (VSR).

2. The Victorian Suicide Register

The VSR was designed, built and piloted by staff in the Coroners Prevention Unit between 2011 and 2012. Coding commenced in earnest in the second half of 2013.

2.1 Structure

The VSR comprises a core dataset and an enhanced dataset.

The VSR core dataset encompasses the basic information that is available to coders when the death is first reported to the CCOV or shortly thereafter: the deceased's age and sex and name; the date the death was reported; the circumstances of death as described in the Victoria Police Initial Report of Death to the Coroner ('Form 83'); suicide method; location of usual residence; and location of fatal incident.

The VSR enhanced dataset encompasses the information that is usually only available in a sufficiently reliable and detailed form after the Court has received the Coronial Brief of Evidence (prepared by Victoria Police) and any other medical records, witness statements, and/or other relevant material that the Coroner has requested. Binary, categorical and free-text information is gathered across nine main areas:

- Socio-demographics including the deceased's employment status and usual occupation, relationship status, country of birth, whether the deceased identified as a member of the LGBTI community, and whether the deceased was an Aboriginal and/or Torres Strait Islander person.
- Physical health including any serious physical illness, injury and/or pain condition the deceased was experiencing.
- Mental health including any diagnosed or suspected mental illness, and any contact with health services for mental health related issues within six weeks and/or 12 months of death.
- Intent including the presence (and contents) of suicide notes or similar, verbal indicators of intent, and past self-harming behaviour.
- Interpersonal stressors including exposure to suicide of another person; death of a partner, family member, friend or acquaintance; separation from and/or conflict with partner; conflict with family members or friends; and experience of interpersonal violence (as perpetrator and/or as victim).
- Contextual stressors including work-related stressors; financial stressors; legal stressors; stressors pertaining to sexuality and gender; experience of isolation; and substance misuse and abuse.
- Contacts with government and non-government services and the legal system (including police, courts and Corrections Victoria) within six weeks and within 12 months of death.
- Toxicological profile including detection of alcohol, pharmaceutical drugs and illegal drugs in postmortem and antemortem toxicology.
- Information specific to the suicide method used, such as (for example) the ligature point and ligature used in a hanging; the source of the nitrogen used in a suicide by inhalation of irrespirable atmosphere; and the means by which the train track was accessed in a rail suicide.

2.2 Case identification

Cases are identified for inclusion in the VSR as follows:

- The CPU conducts surveillance on all deaths reported to the Court, during which probable and possible suicides are identified. Over 97% of deaths subsequently confirmed as suicides, are first identified in this surveillance process.
- The CPU also conducts regular searches of deaths reported to the Court, using internal Court databases as well as the National Coronial Information System (NCIS), to identify probable and possible suicides that may have been missed in the initial surveillance program.

Any death flagged as a probable or possible suicide is added to the VSR for further review and coding.

2.3 Coding process

The stages of VSR coding are as follows:

- When a probable or possible suicide is first added to the VSR, the core variables are coded on a preliminary basis.
- When the forensic medical cause of death is established, the CPU reviews coding of core variables and checks that the death is still consistent with suicide on the basis of available material.
- When the Coroner's investigation is complete and the finding is made, the CPU reviews coding of core variables and checks that the death is still consistent with suicide on the basis of available material.
- After the Coronial Brief of Evidence is received from Victoria Police, the death is eligible for enhanced dataset coding and is added to the coding schedule for this.

2.4 Coding progress

The full VSR core dataset is available for all suicide deaths reported to the CCOV between 1 January 2007 and the present. The core dataset is maintained prospectively, meaning there is usually only a 24 hour delay (or less) between a suicide occurring and its inclusion in the VSR.

The VSR enhanced dataset is resource-intensive to maintain; a trained and experienced VSR coder requires on average two hours to code the enhanced variables for a single death. As at 1 June 2019 the enhanced dataset has been completely coded for all Victorian suicide deaths that occurred between 1 January 2009 and 31 December 2015. Coding for 2016 suicide deaths is underway and is anticipated to be completed before December 2019.

The VSR also includes certain core data (though not the full core dataset) for all Victorian suicides from 2000 to 2006, however this data must be reviewed and cleaned before it is deemed to be fit for use.

2.5 Uses

The VSR was originally designed and built as a tool to assist Victorian Coroners with their investigations into suicide deaths, and particularly to produce data and evidence to support Coroners'

recommendations in suicide prevention. This remains the primary use of the VSR through to today. Recent Coronial investigations informed by VSR data include:

- Coroner Audrey Jamieson's investigation into suicide among international students studying at tertiary institutions in Victoria.
- Acting State Coroner Caitlin English's investigation into suicides among current and former serving members of the Australian Defence Force.
- Coroner John Olle's investigation into patterns of health service contact among people who suicided and were diagnosed with borderline personality disorder.

For several years the VSR team have provided data to support the Victorian Department of Health and Human Services' suicide prevention initiatives. Presently data is being provided to inform the implementation and evaluation of the place-based suicide prevention trials. This entailed developing detailed suicide profile reports for local government areas throughout Victoria, as well as implementing a surveillance program for early detection of elevated suicide activity ('suicide clusters').

VSR data has been provided to inform the work of many organisations including (but not limited to) the Interdepartmental Committee on Suicide Prevention; Victoria Police; the Department of Justice and Community Safety; AustRoads; VicRoads; and various media outlets.

Finally, the VSR is being increasingly utilised as a source of high-quality data for researchers in suicide prevention. Collaborative projects are currently underway with research groups across several universities and health services, including projects examining suicide among older Victorians; people with diagnosed cancer; and farmers.

2.6 Limitations and caveats for VSR data

VSR data is coded with reference to the material gathered for the Coroner's investigation. The amount and nature of material available to the VSR coders in any particular death, is dependent on how the Coroner conducted the investigation and what material the Coroner requested. In some investigations, a Coroner might obtain multiple witness statements and medical records and hold an inquest to examine the circumstances of death. Other investigations might be completed with a single witness statement and no medical records to hand. This means the VSR data varies in detail from case to case, which is a major limitation.

The contents of the VSR are continually revised and updated as Coroners' investigations progress and new information becomes available regarding deaths. Sometimes a death that was initially identified as a probable suicide and included in the VSR, may be removed because further investigation reveals it was not a suicide. Likewise a death not initially flagged as suicide might be added when evidence is gathered to demonstrate that it resulted from intentional self-harm. This is the major caveat for VSR data: that it reflects the current knowledge of suicide in Victoria only at the moment when the data was extracted. A report based on a VSR extract done at another time might contain different data.

3. Suicide in Victoria, 2009-2018

The following tables were prepared with reference to core data extracted from the VSR on 29 May 2019, encompassing all suicides that occurred in Victoria and were reported to the CCOV for investigation between 1 January 2009 and 31 December 2018.

3.1 Frequency by sex and age group

Table 1 shows the annual frequency and proportion by sex of suicides that occurred in Victoria between 2009 and 2018. There was an increase over time in the frequency of suicides among both men and women. The proportion of male to female suicide deceased remained steady at approximately 75% male to 25% female.

Table 1: Annual frequency and proportion of suicides by deceased sex, Victoria 2009-2018

Year	Male		Female		All	
	N	%	N	%	N	%
2009	445	75.3	146	24.7	591	100.0
2010	408	76.0	129	24.0	537	100.0
2011	411	74.9	138	25.1	549	100.0
2012	450	75.3	148	24.7	598	100.0
2013	445	74.5	152	25.5	597	100.0
2014	475	75.9	151	24.1	626	100.0
2015	477	74.8	161	25.2	638	100.0
2016	477	73.2	175	26.8	652	100.0
2017	488	72.5	185	27.5	673	100.0
2018	536	74.4	184	25.6	720	100.0
Total	**4612**	**74.6**	**1569**	**25.4**	**6181**	**100.0**

Table 2a shows the annual frequency of all Victorian suicides by deceased age group for 2009-2018. Tables 2b and 2c show these frequencies specifically for males and females respectively.

Table 2a: Annual frequency and proportion of suicides by age group, Victoria 2009-2018

Age group (years)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
10 to 14	3	4	1	3	1	1	5	0	3	2	23
15 to 19	20	22	20	34	29	32	24	35	26	39	281
20 to 24	51	44	51	45	43	44	40	71	50	58	497
25 to 34	109	97	87	113	97	118	112	140	132	141	1146
35 to 44	129	103	117	126	111	123	119	108	127	131	1194
45 to 54	126	119	110	117	110	124	155	112	144	134	1251
55 to 64	82	71	77	81	109	95	75	83	89	112	874
65 to 74	38	33	38	36	44	35	51	47	58	58	438
75 to 84	26	32	31	29	33	31	29	36	25	31	303
85 and over	7	12	17	14	20	23	28	20	19	14	174
Total	**591**	**537**	**549**	**598**	**597**	**626**	**638**	**652**	**673**	**720**	**6181**

Table 2b: Annual suicide frequency by age group in males, Victoria 2009-2018

Age group (years)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
10 to 14	0	3	0	0	1	0	3	0	2	2	11
15 to 19	14	19	14	14	21	23	17	27	17	25	191
20 to 24	40	29	40	35	33	34	30	56	36	47	380
25 to 34	77	72	65	92	77	87	89	108	97	100	864
35 to 44	100	80	88	94	79	98	94	79	96	96	904
45 to 54	95	96	81	89	75	88	116	73	101	109	923
55 to 64	60	55	57	62	89	75	50	53	65	81	647
65 to 74	31	24	30	29	29	27	41	39	41	43	334
75 to 84	22	24	25	22	25	25	14	24	17	23	221
85 and over	6	6	11	13	16	18	23	18	16	10	137
Total	**445**	**408**	**411**	**450**	**445**	**475**	**477**	**477**	**488**	**536**	**4612**

Table 2c: Annual suicide frequency by age group in females, Victoria 2009-2018

Age group (years)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
10 to 14	3	1	1	3	0	1	2	0	1	0	12
15 to 19	6	3	6	20	8	9	7	8	9	14	90
20 to 24	11	15	11	10	10	10	10	15	14	11	117
25 to 34	32	25	22	21	20	31	23	32	35	41	282
35 to 44	29	23	29	32	32	25	25	29	31	35	290
45 to 54	31	23	29	28	35	36	39	39	43	25	328
55 to 64	22	16	20	19	20	20	25	30	24	31	227
65 to 74	7	9	8	7	15	8	10	8	17	15	104
75 to 84	4	8	6	7	8	6	15	12	8	8	82
85 and over	1	6	6	1	4	5	5	2	3	4	37
Total	**146**	**129**	**138**	**148**	**152**	**151**	**161**	**175**	**185**	**184**	**1569**

3.2 Annual rate and average annual rate

The Australian Bureau of Statistics (ABS) Estimated Resident Population By Single Year Of Age workbook (catalogue number 3101.0 issued 21 March 2019) was used to calculate sex-specific annual suicide rates per 100,000 population for the period 2009-2018.

To calculate the sex-specific annual suicide rate per 100,000 population, the population estimates for male and female Victorian residents for each year 2009-2018 aged 10 years or above were compiled from the ABS workbook to use as the denominator. The population of Victorians aged under 10 years was excluded because, in the period 2009-2018, the youngest age of a Victorian person determined to be a suicide was 10 years.[1] The annual rate per 100,000 population was calculated in the usual way (frequency of suicides in year divided by resident population estimate in year then multiplied by 100,000).

1 Some researchers prefer to calculate suicide rates using the whole population of males and females as the denominators. Most tables in this section include all raw frequencies so that researchers who prefer this approach can re-calculate the rates using their preferred denominators.

Table 3 shows the sex-specific annual suicide rate in Victoria per 100,000 people aged 10 year and above, for the period 2009-2018. The suicide rate for males was consistently higher than for females. Among both males and females there was a decline in the annual suicide rate between 2009 and 2010, followed by a gradual increase through to 2018.

Table 3: Annual sex-specific suicide rate per 100,000 people aged 10 years or older, Victoria 2009-2018

Year	Male			Female			All Victorian residents		
	N	Population	Rate	N	Population	Rate	N	Population	Rate
2009	445	2,323,397	19.2	146	2,384,862	6.1	591	4,708,259	12.6
2010	408	2,359,640	17.3	129	2,426,577	5.3	537	4,786,217	11.2
2011	411	2,389,666	17.2	138	2,463,471	5.6	549	4,853,137	11.3
2012	450	2,434,661	18.5	148	2,512,113	5.9	598	4,946,774	12.1
2013	445	2,483,719	17.9	152	2,563,493	5.9	597	5,047,212	11.8
2014	475	2,532,805	18.8	151	2,617,364	5.8	626	5,150,169	12.2
2015	477	2,584,378	18.5	161	2,673,288	6.0	638	5,257,666	12.1
2016	477	2,645,781	18.0	175	2,738,850	6.4	652	5,384,631	12.1
2017	488	2,713,973	18.0	185	2,806,114	6.6	673	5,520,087	12.2
2018	536	2,780,206	19.3	184	2,869,376	6.4	720	5,649,582	12.7

At this point, it is pertinent to introduce the relationship between reliability and frequency in rates. Rate calculations involving frequencies of events (such as suicides) lower than 20 are generally regarded as being unreliable, because (a) the relative influence of random factors in driving frequency is greater at lower numbers; and (b) a small change in low frequencies translates into a misleadingly large change in rate.[2]

Tables 2b and 2c above show that annual suicide frequencies for men and women aged 10-14 years, 15-19 years and 85 years and older are generally lower than 20 deaths per year. Therefore, ordinarily the CCOV would not further disaggregate the sex-specific annual suicide rates by age group because of the reliability issue. However, the Royal Commission requested the disaggregation be undertaken, so the analysis has been performed.

Table 4a shows the annual age group-specific suicide rate per 100,000 population for all Victoria, 2009-2018. Tables 4b and 4c show the sex- and age group-specific annual suicide rates for males and females respectively. Please note that only rates are shown in these tables, because of the large number of data points to be represented. The ABS population estimates by year, sex and age group which were used to calculate the rates are found in Appendix A, in case they are of interest to the Royal Commission's advisors or others who wish to check the calculations. The frequencies used to calculate the rates are, of course, those presented in Tables 2a, 2b and 2c.

2 To illustrate this issue consider the following example. If a single suicide occurred in a particular population in one year, and then three suicides occurred in that population during the next year, the two-suicide difference would probably not be deemed particularly notable because the absolute frequencies are so small that chance (random effects) cannot be discounted as the explanation for the difference. But if the suicides were expressed as rates, the data would show that the suicide rate in the population tripled in one year. If the rate was reported without the absolute frequencies for context, it might create a misleading impression of an emerging suicide trend in the population.

Table 4a: Annual suicide rate per 100,000 population by age group, Victoria 2009-2018

Age group (years)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
10 to 14	0.9	1.2	0.3	0.9	0.3	0.3	1.5	0.0	0.8	0.5
15 to 19	5.6	6.2	5.6	9.5	8.0	8.8	6.5	9.4	6.9	10.3
20 to 24	12.6	10.7	12.4	10.8	10.2	10.3	9.1	15.8	10.7	12.1
25 to 34	14.1	12.2	10.7	13.4	11.1	13.1	12.1	14.6	13.3	13.8
35 to 44	16.5	13.0	14.7	15.6	13.7	15.0	14.4	12.9	14.9	15.0
45 to 54	17.3	16.1	14.8	15.6	14.4	16.0	19.8	14.0	17.8	16.4
55 to 64	13.8	11.7	12.4	12.8	16.9	14.4	11.1	12.0	12.6	15.6
65 to 74	9.9	8.3	9.2	8.2	9.6	7.3	10.3	9.1	10.9	10.5
75 to 84	10.3	12.5	12.0	11.1	12.4	11.4	10.4	12.6	8.5	10.2
85 and over	7.4	12.0	16.3	12.8	17.5	19.4	22.7	15.7	14.6	10.5

Table 4b: Annual suicide rate among males per 100,000 population by age group, Victoria 2009-2018

Age group (years)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
10 to 14	0.0	1.8	0.0	0.0	0.6	0.0	1.7	0.0	1.1	1.0
15 to 19	7.6	10.4	7.7	7.6	11.3	12.3	9.0	14.2	8.9	12.9
20 to 24	19.0	13.6	19.0	16.5	15.4	15.6	13.4	24.4	15.1	19.0
25 to 34	19.7	17.9	15.8	21.7	17.6	19.4	19.2	22.6	19.7	19.7
35 to 44	25.9	20.6	22.4	23.7	19.7	24.3	23.0	19.1	22.7	22.1
45 to 54	26.4	26.4	22.2	24.1	20.0	23.2	30.2	18.8	25.6	27.4
55 to 64	20.5	18.4	18.6	20.0	28.2	23.3	15.2	15.8	18.9	23.2
65 to 74	16.6	12.4	14.8	13.5	13.0	11.6	17.0	15.5	15.8	16.1
75 to 84	19.8	21.2	21.8	18.7	20.8	20.3	11.1	18.4	12.5	16.4
85 and over	18.7	17.6	30.6	34.0	39.2	41.8	50.7	37.9	32.6	19.7

Table 4c: Annual suicide rate among females per 100,000 population by age group, Victoria 2009-2018

Age group (years)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
10 to 14	1.9	0.6	0.6	1.9	0.0	0.6	1.2	0.0	0.6	0.0
15 to 19	3.4	1.7	3.5	11.4	4.5	5.1	3.9	4.4	4.9	7.6
20 to 24	5.6	7.5	5.5	4.9	4.8	4.8	4.7	6.8	6.2	4.7
25 to 34	8.3	6.3	5.4	5.0	4.6	6.9	4.9	6.6	7.0	8.0
35 to 44	7.3	5.7	7.2	7.8	7.8	6.0	6.0	6.9	7.3	8.0
45 to 54	8.4	6.2	7.7	7.3	9.0	9.1	9.7	9.5	10.4	6.0
55 to 64	7.3	5.2	6.3	5.9	6.1	5.9	7.2	8.5	6.6	8.4
65 to 74	3.5	4.4	3.8	3.1	6.4	3.3	3.9	3.0	6.2	5.3
75 to 84	2.8	5.6	4.2	4.8	5.5	4.0	9.9	7.8	5.0	4.9
85 and over	1.6	9.1	8.8	1.4	5.5	6.6	6.4	2.5	3.7	4.8

The issue regarding reduced reliability in rate calculations for low absolute frequencies is clearly illustrated in these tables; for example for women aged 10 to 14 the annual suicide rate tripled between 2011 and 2012 (0.6 to 1.9 suicides per 100,000 population) but the underlying frequencies were one and three suicides in 2011 and 2012 respectively.

The other issue these tables illustrate indirectly, is how difficult it is to interpret suicide rate data when examining rates disaggregated across multiple dimensions (in this case year, sex and age group).

From visual inspection of the tables, it is very difficult to work out what the underlying differences in rates are across males and females across year and age group, beyond some general observations that the rates for men and women appear to peak in middle age, with a second peak among men in the oldest age group.

For these reasons, the CCOV prefers to use the average annual rate when examining suicide rates by sex and age group. The ABS population data from 2014 (the mid-point between 2009 and 2018) was selected as the denominator, with the average annual rate calculated as follows: total frequency of suicides in age group between 2009-2018 divided by 2014 age group population estimate, multiplied by 100,000 (to yield the 10-year suicide rate) then divided by 10 (to yield the average annual suicide rate per 100,000 population).

Table 5 shows the average annual suicide rate by sex and age group per 100,000 people in Victoria aged 10 years or older, across the period 2009-2018. Visual inspection of the table shows there were distinct differences by sex. For males, the rate increased through to age 45-54, then declined before a substantial spike among those aged 85 years and over. For females there was the same increase in average annual rate through to age 45-54, then the rate declined without any big spike among the oldest age groups.

Table 5: Average annual suicide rate (AASR) by sex and age group per 100,000 people aged 10 years or older, Victoria 2009-2018 (†2014 population estimate)

Age group (years)	Male			Female			All Victorian residents		
	N	Population†	ASSR	N	Population†	ASSR	N	Population†	ASSR
10 to 14	11	173,430	0.6	12	165,279	0.7	23	338,709	0.7
15 to 19	191	187,376	10.2	90	177,915	5.1	281	365,291	7.7
20 to 24	380	218,448	17.4	117	210,324	5.6	497	428,772	11.6
25 to 34	864	449,372	19.2	282	450,255	6.3	1146	899,627	12.7
35 to 44	904	404,061	22.4	290	413,445	7.0	1194	817,506	14.6
45 to 54	923	379,065	24.3	328	393,951	8.3	1251	773,016	16.2
55 to 64	647	321,992	20.1	227	337,302	6.7	874	659,294	13.3
65 to 74	334	232,573	14.4	104	244,421	4.3	438	476,994	9.2
75 to 84	221	123,408	17.9	82	148,943	5.5	303	272,351	11.1
85 and over	137	43,080	31.8	37	75,529	4.9	174	118,609	14.7

3.3 Suicide rates in Victoria compared to other states

The Royal Commission requested any information that CCOV might be able to provide, regarding how suicide rates in Victoria differ from other states.

The CCOV does not hold data on suicide frequencies and rates in Australian states other than Victoria. To the best of the CCOV's knowledge, the only organisation that systematically collates data of this type is the ABS, which includes state-disaggregated suicide statistics in its Causes of Death Australia (catalogue number 3303.0) each year. The most recent ABS Causes of Death Australia release was on 26 September 2018, and included (inter alia) annual frequency and rate of suicide by sex, age group and state for 2008-2017.

The ABS Causes of Death Australia would be an appropriate resource for understanding how the Victorian suicide rate differs to suicide rates in other states. However, caution is urged if comparing the ABS rates to VSR data reported here for two reasons:

- There are discrepancies between ABS and VSR annual suicide frequencies, as illustrated in Table 6. The reasons for these discrepancies include the different counting rules of ABS and VSR, and the different material to ABS and VSR coders when classifying the deaths.
- The ABS calculates and reports age-standardised death rates, which are not a rate statistic used by the CCOV.

Table 6: Annual suicide frequency by sex according to Victorian Suicide Register (VSR) and Australian Bureau of Statistics (ABS)†, and percentage difference (%Δ) between the two sources, Victoria 2008-2018. (†ABS statistics drawn from Causes of Death Australia catalogue number 3303.0 release 26 September 2018; 2018 ABS statistics not available at the time this report was prepared.)

Year	Male			Female			All Victorian residents		
	VSR	ABS	%Δ	VSR	ABS	%Δ	VSR	ABS	%Δ
2008	434	429	-1.2	116	116	+0.0	550	545	-0.9
2009	445	434	-2.5	146	142	-2.8	591	576	-2.6
2010	408	426	+4.2	129	132	+2.3	537	558	+3.8
2011	411	401	-2.5	138	125	-10.4	549	526	-4.4
2012	450	391	-15.1	148	123	-20.3	598	514	-16.3
2013	445	394	-12.9	152	139	-9.4	597	533	-12.0
2014	475	509	+6.7	151	149	-1.3	626	658	+4.9
2015	477	511	+6.7	161	157	-2.5	638	668	+4.5
2016	477	454	-5.1	175	170	-2.9	652	624	-4.5
2017	488	445	-9.7	185	176	-5.1	673	621	-8.4
2018†	536	-	-	184	-	-	720	-	-

4. Metropolitan Melbourne and Regional Victoria

This section was prepared using VSR core data compiled according to the location where the deceased usually resided: in Metropolitan Melbourne or in Regional Victoria.

For the purposes of preparing the data summary, a person was considered to reside in Metropolitan Melbourne if their usual place of residence was in any of the following local government areas (LGAs): Banyule; Bayside; Boroondara; Brimbank; Cardinia; Casey; Darebin; Frankston; Glen Eira; Greater Dandenong; Hobsons Bay; Hume; Kingston; Knox; Manningham; Maribyrnong; Maroondah; Melbourne; Melton; Monash; Moonee Valley; Moreland; Mornington Peninsula; Nillumbik; Port Phillip; Stonnington; Whitehorse; Whittlesea; Wyndham; Yarra; Yarra Ranges.

A person was considered to reside in Regional Victoria if their usual place of residence was in any of the following LGAs: Alpine; Ararat; Ballarat; Bass Coast; Baw Baw; Benalla; Buloke; Campaspe; Central Goldfields; Colac Otway; Corangamite; East Gippsland; Gannawarra; Glenelg; Golden Plains; Greater Bendigo; Greater Geelong; Greater Shepparton; Hepburn; Hindmarsh; Horsham; Indigo; Latrobe; Loddon; Macedon Ranges; Mansfield; Mildura; Mitchell; Moira; Moorabool; Mount Alexander; Moyne; Murrindindi; Northern Grampians; Pyrenees; Queenscliffe; South Gippsland; Southern Grampians; Strathbogie; Surf Coast; Swan Hill; Towong; Wangaratta; Warrnambool; Wellington; West Wimmera; Wodonga; Yarriambiack.

4.1 Introductory note regarding location-based suicide analysis

Two main locations of interest are stored in the VSR for each suicide: the location where the fatal incident occurred, and the location where the deceased usually resided.

When examining suicide across all Victoria, generally analyses are performed using location of fatal incident: that is, 'suicides in Victoria'. As shown in Table 7, most suicides that occur in Victoria are of people who usually resided in Victoria (6043 of 6181, 97.8%), so 'suicides in Victoria' can for most purposes be considered equivalent to 'suicides of Victorians'. This is the basis on which the data was prepared in Section 3.

Table 7: Annual frequency of suicides in Victoria by deceased usual residence, 2009-2018. (†Usual residence is classified in the VSR as interstate or overseas if the person usually resided interstate or overseas and had been in Victoria for less than a week at the time of fatal incident.)

Usual residence	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Victoria	577	527	538	585	592	615	617	638	662	692	6043
Interstate†	5	4	6	6	1	7	11	2	3	11	56
Overseas†	1	0	0	0	0	1	2	1	0	1	6
No fixed address	7	5	3	4	2	3	7	4	5	9	49
Unknown	1	1	2	3	2	0	1	7	3	7	27
Total	**591**	**537**	**549**	**598**	**597**	**626**	**638**	**652**	**673**	**720**	**6181**

However, when the focus of analysis shifts from all Victoria to specific geographical regions within Victoria, the choice of examining fatal incident versus usual residence location becomes more important, and the purpose of the data needs to be considered. For example, if the purpose was to identify areas of increased suicide activity (what are sometimes colloquially described as 'hotspots') then location of fatal incident would be most relevant; but if the purpose was to identity communities most affected by suicide then usual residence might be more appropriate.

The data provided here relates to the deceased's usual residence. This is because mental health services are area-based, and where the person resides is a factor in determining the mental health services with which they can engage.

The shift from using location of fatal incident in Section 3 (that is, suicides occurring in Victoria), to using location of usual residence in this section (that is, suicides of people who usually resided in Victoria), means that there will be some discrepancy between the data presented in the two sections. With reference again to Table 7, the data in Section 3 included all types of usual residence (Victoria, interstate, overseas, no fixed address, unknown) whereas the data here includes only those whose confirmed usual residence was in Victoria (the data presented in the first row of Table 7).

4.2 Frequency by sex and age group

Table 8 shows the annual frequency and proportion by sex of suicides among people who resided in Metropolitan Melbourne and Regional Victoria, 2009-2018. There was a slight general increase over time in suicide frequency across all groups. The proportion of male suicide deceased in Metropolitan Melbourne was lower than in Regional Victoria.

Table 8: Annual frequency of suicides in Victoria by deceased usual residence, 2009-2018.

Year	Metropolitan Melbourne						Regional Victoria					
	Male		Female		All		Male		Female		All	
	N	%	N	%	N	%	N	%	N	%	N	%
2009	286	72.4	109	27.6	395	100.0	146	80.2	36	19.8	182	100.0
2010	249	72.2	96	27.8	345	100.0	152	83.5	30	16.5	182	100.0
2011	265	71.6	105	28.4	370	100.0	139	82.7	29	17.3	168	100.0
2012	279	72.8	104	27.2	383	100.0	159	78.7	43	21.3	202	100.0
2013	300	73.5	108	26.5	408	100.0	143	77.7	41	22.3	184	100.0
2014	284	72.4	108	27.6	392	100.0	184	82.5	39	17.5	223	100.0
2015	311	71.8	122	28.2	433	100.0	147	79.9	37	20.1	184	100.0
2016	312	71.9	122	28.1	434	100.0	156	76.5	48	23.5	204	100.0
2017	328	71.1	133	28.9	461	100.0	153	76.1	48	23.9	201	100.0
2018	335	71.7	132	28.3	467	100.0	181	80.4	44	19.6	225	100.0
Total	**2949**	**72.1**	**1139**	**27.9**	**4088**	**100.0**	**1560**	**79.8**	**395**	**20.2**	**1955**	**100.0**

Table 9 (over page) shows the aggregate frequency and proportion of suicides by deceased sex, age group and usual place of residence, Victoria 2009-2018. Among the youngest age groups in both Metropolitan Melbourne and Regional Victoria, the proportion of male to female suicides was approximately equal, but then with increasing age the sex proportions settled into the patterns noted in Table 8.

Table 9: Aggregate frequency and proportion of suicides by deceased sex, age group and usual place of residence, Victoria 2009-2018

Age group (years)	Metropolitan Melbourne						Regional Victoria					
	Male		Female		All		Male		Female		All	
	N	%	N	%	N	%	N	%	N	%	N	%
10 to 14	6	50.0	6	50.0	12	100.0	4	40.0	6	60.0	10	100.0
15 to 19	120	65.6	63	34.4	183	100.0	69	73.4	25	26.6	94	100.0
20 to 24	250	72.0	97	28.0	347	100.0	116	85.9	19	14.1	135	100.0
25 to 34	574	72.0	223	28.0	797	100.0	259	83.8	50	16.2	309	100.0
35 to 44	577	73.1	212	26.9	789	100.0	304	81.5	69	18.5	373	100.0
45 to 54	598	72.8	223	27.2	821	100.0	306	75.7	98	24.3	404	100.0
55 to 64	398	72.1	154	27.9	552	100.0	240	78.2	67	21.8	307	100.0
65 to 74	207	75.3	68	24.7	275	100.0	125	78.1	35	21.9	160	100.0
75 to 84	132	67.7	63	32.3	195	100.0	87	82.1	19	17.9	106	100.0
85 +	87	74.4	30	25.6	117	100.0	50	87.7	7	12.3	57	100.0
Total	**2949**	**72.1**	**1139**	**27.9**	**4088**	**100.0**	**1560**	**79.8**	**395**	**20.2**	**1955**	**100.0**

4.3 Annual and average annual rates

Rate calculations for suicide among usual residents of Metropolitan Melbourne and Regional Victoria are somewhat complicated by the fact that the ABS does not produce annual population data by sex and age group across the geographical designations 'Metropolitan Melbourne' and 'Regional Victoria'. However, the ABS produces annual population data disaggregated by sex, age group and LGA (catalogue number 3235.0). Summing this population data by sex and age group across LGAs located within Metropolitan Melbourne and (separately) Regional Victoria, enabled population estimates to be derived for the rate calculations presented here.

(Please note that the ABS catalogue 3235.0 data release for 2018 population estimates has not yet occurred, so the 2017 population data was used for both 2017 and 2018 annual suicide rate calculations.)

Table 10a: Annual sex-specific suicide rate per 100,000 people aged 10 years or older, Metropolitan Melbourne residents 2009-2018

Year	Male			Female		
	N	Population	Rate	N	Population	Rate
2009	286	1,730,360	16.5	109	1,775,336	6.1
2010	249	1,764,687	14.1	96	1,811,648	5.3
2011	265	1,770,260	15.0	105	1,836,008	5.7
2012	279	1,801,441	15.5	104	1,866,109	5.6
2013	300	1,841,481	16.3	108	1,906,775	5.7
2014	284	1,879,896	15.1	108	1,946,328	5.5
2015	311	1,916,305	16.2	122	1,986,336	6.1
2016	312	1,993,201	15.7	122	2,063,837	5.9
2017	328	2,044,077	16.0	133	2,116,991	6.3
2018	335	2,044,077	16.4	132	2,116,991	6.2

Table 10b: Annual sex-specific suicide rate per 100,000 people aged 10 years or older, Regional Victorian residents 2009-2018

Year	N	Population	Male Rate	N	Population	Female Rate
2009	146	626,093	23.3	36	640,904	5.6
2010	152	636,042	23.9	30	651,206	4.6
2011	139	616,851	22.5	29	629,849	4.6
2012	159	624,468	25.5	43	636,784	6.8
2013	143	629,392	22.7	41	642,414	6.4
2014	184	633,817	29.0	39	647,844	6.0
2015	147	636,755	23.1	37	652,614	5.7
2016	156	657,015	23.7	48	675,501	7.1
2017	153	668,808	22.9	48	688,053	7.0
2018	181	668,808	27.1	44	688,053	6.4

Table 10a shows the sex-specific annual suicide rate per 100,000 people aged 10 year and above, in Metropolitan Melbourne residents. Table 10b shows this rate for Regional Victorian residents. Annual rates remained relatively steady over time by sex and by location of usual residence. The most notable finding was that while the annual rates were very similar between females who resided in Metropolitan Melbourne and Regional Victoria, the annual rate for males residing in Regional Victoria was markedly higher than males residing in Metropolitan Melbourne.

Tables 11a and 11b show the average annual suicide rate 2009-2018 by sex and age group per 100,000 people aged 10 years and older, among Metropolitan Melbourne and Regional Victorian residents respectively. The pattern of rate by age group and sex in both Metropolitan Melbourne and Regional Victoria was generally consistent with the all-Victoria patterns described in Table 5 above, except that the rate in almost all age groups for male Regional Victoria residents was notably higher than for Metropolitan Melbourne males.

Table 11a: Average annual suicide rate (AASR) by sex and age group per 100,000 people aged 10 years or older, Metropolitan Melbourne residents 2009-2018 (†2014 population estimate)

Age group	N	Population†	Male ASSR	N	Population†	Female ASSR
10 to 14	6	124,471	0.5	6	119,070	0.5
15 to 19	120	133,901	9.0	63	127,602	4.9
20 to 24	250	171,293	14.6	97	165,534	5.9
25 to 34	574	365,086	15.7	223	364,867	6.1
35 to 44	577	313,823	18.4	212	319,195	6.6
45 to 54	598	279,044	21.4	223	288,680	7.7
55 to 64	398	222,668	17.9	154	237,135	6.5
65 to 74	207	155,841	13.3	68	168,310	4.0
75 to 84	132	83,853	15.7	63	103,460	6.1
85 and over	87	29,916	29.1	30	52,475	5.7

Table 11b: Average annual suicide rate (AASR) by sex and age group per 100,000 people aged 10 years or older, Regional Victorian residents 2009-2018 (†2014 population estimate)

Age group	Male			Female		
	N	Population†	ASSR	N	Population†	ASSR
10 to 14	4	47,567	0.8	6	45,057	1.3
15 to 19	69	49,979	13.8	25	46,420	5.4
20 to 24	116	42,909	27.0	19	40,023	4.7
25 to 34	259	79,927	32.4	50	81,016	6.2
35 to 44	304	88,438	34.4	69	92,162	7.5
45 to 54	306	98,671	31.0	98	101,609	9.6
55 to 64	240	98,332	24.4	67	98,369	6.8
65 to 74	125	75,521	16.6	35	75,576	4.6
75 to 84	87	39,306	22.1	19	44,840	4.2
85 and over	50	13,167	38.0	7	22,772	3.1

5. Suicide and mental ill health

The following tables were prepared using a VSR extract of the enhanced dataset for the years 2009-2015, which was compiled on 29 May 2019. As in Section 4, the data here has been compiled according to the location where the deceased usually resided: in Metropolitan Melbourne or in Regional Victoria.

5.1 Diagnosed mental illness

In the VSR, mental illness is classified according to the Mental and Behavioural Disorders section of the International Statistical Classification of Diseases and Related Health Problems 10th revision (ICD-10).

A mental illness is coded as diagnosed if there is clear evidence that a formal diagnosis was made by a clinician. Clinicians may include general practitioners, public mental health practitioners, private psychiatrists, and psychologists.

A mental illness is coded as suspected if the evidence does not indicate that the clinician made a clear formal diagnosis (for example, describing "borderline personality traits" rather than "borderline personality disorder"; "depressive symptoms" rather than "depression"). Likewise, a suspected mental illness is coded if there is evidence from a non-clinician (partner, friend, family member or similar) that the person had a mental illness diagnosis but there is no direct corroborating evidence from a clinician.

Table 12a shows the frequency and proportion of male and female suicide deceased who resided in Metropolitan Melbourne and had either diagnosed mental illness, suspected mental illness, or neither. Table 12b shows the same data for suicide deceased who resided in Regional Victoria. Please note that a person could have multiple diagnosed or suspected mental illnesses, which is why the data regarding individual mental illnesses (the non-bolded rows in the tables) sums to greater than the bolded sub-totals for all diagnosed mental illness.

Table 12a: Frequency and proportion of suicides by sex and presence of diagnosed and suspected mental illness, Metropolitan Melbourne 2009-2015

Mental illness	Male		Female	
	N	%	N	%
Diagnosed	**1064**	**53.9**	**533**	**70.9**
Organic	21	1.1	4	0.5
Substance use related	234	11.9	92	12.2
Schizophrenia, schizotypal, delusional	154	7.8	64	8.5
Mood disorders	830	42.0	453	60.2
Neurotic, stress-related, somatoform	345	17.5	212	28.2
Behavioural syndromes - physiological	22	1.1	35	4.7
Adult personality / behaviour	114	5.8	121	16.1
Mental retardation	1	0.1	0	0.0
Psychological development disorders	16	0.8	2	0.3
Disorders - childhood onset	42	2.1	7	0.9
Unspecified disorders	6	0.3	4	0.5

Table 12a continued over page

Table 12a: continued from previous page

Mental illness	Male		Female	
	N	%	N	%
Suspected (no diagnosis)	**453**	**22.9**	**110**	**14.6**
Organic	13	0.7	1	0.1
Substance use related	177	9.0	26	3.5
Schizophrenia, schizotypal, delusional	21	1.1	7	0.9
Mood disorders	291	14.7	80	10.6
Neurotic, stress-related, somatoform	46	2.3	17	2.3
Behavioural syndromes - physiological	7	0.4	4	0.5
Adult personality / behaviour	34	1.7	13	1.7
Mental retardation	0	0.0	0	0.0
Psychological development disorders	6	0.3	1	0.1
Disorders - childhood onset	4	0.2	0	0.0
Unspecified disorders	5	0.3	0	0.0
Neither diagnosed nor suspected	**457**	**23.2**	**109**	**14.5**
Total	**1974**	**100.0**	**752**	**100.0**

Table 12b: Frequency and proportion of suicides by sex and presence of diagnosed and suspected mental illness, Regional Victoria 2009-2015

Mental illness	Male		Female	
	N	%	N	%
Diagnosed	**457**	**42.7**	**150**	**58.8**
Organic	18	1.7	3	1.2
Substance use related	90	8.4	23	9.0
Schizophrenia, schizotypal, delusional	58	5.4	21	8.2
Mood disorders	346	32.3	120	47.1
Neurotic, stress-related, somatoform	129	12.1	55	21.6
Behavioural syndromes - physiological	12	1.1	10	3.9
Adult personality / behaviour	39	3.6	21	8.2
Mental retardation	4	0.4	0	0.0
Psychological development disorders	10	0.9	0	0.0
Disorders - childhood onset	23	2.1	2	0.8
Unspecified disorders	3	0.3	0	0.0
Suspected (no diagnosis)	**267**	**25.0**	**52**	**20.4**
Organic	6	0.6	4	1.6
Substance use related	108	10.1	15	5.9
Schizophrenia, schizotypal, delusional	10	0.9	2	0.8
Mood disorders	174	16.3	35	13.7
Neurotic, stress-related, somatoform	26	2.4	4	1.6
Behavioural syndromes - physiological	2	0.2	3	1.2
Adult personality / behaviour	16	1.5	4	1.6
Mental retardation	0	0.0	0	0.0
Psychological development disorders	2	0.2	0	0.0
Disorders - childhood onset	2	0.2	1	0.4
Unspecified disorders	3	0.3	1	0.4
Neither diagnosed nor suspected	**346**	**32.3**	**53**	**20.8**
Total	**1070**	**100.0**	**255**	**100.0**

Across both Metropolitan Melbourne and Regional Victoria, a higher proportion of female suicide deceased had a diagnosed mental illness, and a higher proportion of male deceased had a suspected mental illness or no mental illness. A markedly higher proportion of females than males had diagnosed mood disorders (primarily depression), neurotic and stress-related and somatoform disorders (primarily anxiety), and disorders of adult personality and behaviour (primarily borderline personality disorder).

Comparing between suicide deceased by usual residence location, a higher proportion of the Metropolitan Melbourne residents (both male and female) had a diagnosed mental illness than Regional Victoria residents.

5.2 Mental health service contacts within 12 months of death

The VSR includes coded information on health service contacts for mental health related issues within 12 months and within six weeks of death. Contacts are coded if the person had engagement with a health service for any mental health related issue, regardless of whether the person had a diagnosed (or even suspected) mental illness.

Health service contacts are classified at a high level according to treatment setting: whether as an inpatient or community patient, and whether as a voluntary or compulsory (what until recently was referred to as involuntary) patient. The contacts are then further coded by type of clinician involved: psychiatrist, psychologist, other mental health practitioner,[3] general practitioner, emergency department staff, Crisis Assessment and Treatment Team, or drug and alcohol service clinician.

Table 13a shows the frequency and proportion by treatment setting of male and female deceased who were usual residents of Metropolitan Melbourne and Regional Victoria, who had contact with health services for mental health related issues within 12 months of suicide. Please note that (as for all tables presented in this section) a single person could have contact with health services across multiple treatment settings, which is why the treatment setting rows in the table (the non-bolded rows) sum to greater than the bolded sub-total rows.

Table 13a: Frequency and proportion by sex and usual place of residence and treatment setting, of deceased who received treatment for mental health related issues within 12 months of suicide, Victoria 2009-2015

Proximity of treatment for mental health related issues	Metropolitan Melbourne				Regional Victoria			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Treatment within 12 months	**1227**	**62.2**	**583**	**77.5**	**533**	**49.8**	**167**	**65.5**
Voluntary inpatient	275	13.9	170	22.6	112	10.5	47	18.4
Compulsory inpatient	113	5.7	73	9.7	37	3.5	13	5.1
Voluntary community patient	1170	59.3	563	74.9	496	46.4	161	63.1
Compulsory community patient	114	5.8	56	7.4	43	4.0	7	2.7
No treatment within 12 months	**747**	**37.8**	**169**	**22.5**	**537**	**50.2**	**88**	**34.5**
Total	**1974**	**100.0**	**752**	**100.0**	**1070**	**100.0**	**255**	**100.0**

3 Mental health practitioners in the VSR are health practitioners other than psychiatrists and psychologists who work in mental health settings and are required to be registered with Australian Health Practitioners Regulation Authority. Mostly they are mental health nurses.

Regardless of location of usual residence, across all treatment settings a higher proportion of females than males generally had contact with health services. (The only exception here was that a higher proportion of male than female deceased were involuntary community patients in Regional Victoria.) And regardless of sex, a higher proportion of people in Metropolitan Melbourne than Regional Victoria had contact across all treatment settings.

Table 13b shows the same data as in Table 13a, except by type of involved clinician rather than treatment setting. General practitioners were the most prevalent involved clinicians across sex and location of usual residence, followed by psychiatrists.

Table 13b: Frequency and proportion by sex and usual place of residence and involved clinician, of deceased who received treatment for mental health related issues within 12 months of suicide, Victoria 2009-2015

Proximity of treatment for mental health related issues	Metropolitan Melbourne				Regional Victoria			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Treatment within 12 months	**1227**	**62.2**	**583**	**77.5**	**533**	**49.8**	**167**	**65.5**
Psychiatrist	586	29.7	349	46.4	218	20.4	82	32.2
Psychologist	297	15.0	164	21.8	116	10.8	39	15.3
Other mental health practitioner	421	21.3	248	33.0	200	18.7	75	29.4
General practitioner	891	45.1	436	58.0	379	35.4	127	49.8
Emergency department clinician	323	16.4	171	22.7	129	12.1	43	16.9
CATT	227	11.5	142	18.9	38	3.6	13	5.1
Drug and alcohol clinician	109	5.5	35	4.7	42	3.9	13	5.1
No treatment within 12 months	**747**	**37.8**	**169**	**22.5**	**537**	**50.2**	**88**	**34.5**
Total	**1974**	**100.0**	**752**	**100.0**	**1070**	**100.0**	**255**	**100.0**

5.3 Mental health service contacts within six weeks of death

Tables 14a and 14b show the same data as in Tables 13a and 13b, except for health service contacts within six weeks of death (rather than 12 months). The frequencies and proportions within and between sex and location of usual residence, follow generally the same pattern as was described in the 12-month contact data.

Table 14a: Frequency and proportion by sex and usual place of residence and treatment setting, of deceased who received treatment for mental health related issues within six weeks of suicide, Victoria 2009-2015

Proximity of treatment for mental health related issues	Metropolitan Melbourne				Regional Victoria			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Treatment within six weeks	**889**	**45.0**	**477**	**63.4**	**377**	**35.2**	**132**	**51.8**
Voluntary inpatient	106	5.4	76	10.1	57	5.3	18	7.1
Compulsory inpatient	49	2.5	32	4.3	16	1.5	8	3.1
Voluntary community patient	823	41.7	447	59.4	342	32.0	126	49.4
Compulsory community patient	67	3.4	34	4.5	29	2.7	5	2.0
No treatment within six weeks	**1085**	**55.0**	**275**	**36.6**	**693**	**64.8**	**123**	**48.2**
Total	**1974**	**100.0**	**752**	**100.0**	**1070**	**100.0**	**255**	**100.0**

Table 14b: Frequency and proportion by sex and usual place of residence and involved clinician, of deceased who received treatment for mental health related issues within six weeks of suicide, Victoria 2009-2015

Proximity of treatment for mental health related issues	Metropolitan Melbourne				Regional Victoria			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Treatment within six weeks	**889**	**45.0**	**477**	**63.4**	**377**	**35.2**	**132**	**51.8**
Psychiatrist	351	17.8	241	32.0	140	13.1	47	18.4
Psychologist	162	8.2	93	12.4	63	5.9	19	7.5
Other mental health practitioner	254	12.9	160	21.3	141	13.2	49	19.2
General practitioner	553	28.0	295	39.2	232	21.7	84	32.9
Emergency department clinician	160	8.1	101	13.4	74	6.9	20	7.8
CATT	126	6.4	79	10.5	23	2.1	6	2.4
Drug and alcohol clinician	46	2.3	16	2.1	25	2.3	6	2.4
No treatment within six weeks	**1085**	**55.0**	**275**	**36.6**	**693**	**64.8**	**123**	**48.2**
Total	**1974**	**100.0**	**752**	**100.0**	**1070**	**100.0**	**255**	**100.0**

6. Aboriginal and Torres Strait Islander people

Several information sources are consulted to identify Aboriginal and Torres Strait Islander people among suicides in the VSR. These include:

- The Victoria Police Initial Report of Death to the Coroner (Form 83). The reporting Police member completes the information on the Form 83 for submission to the CCOV, based on what is initially established at the scene of the death. One of the fields the reporting Police member is required to record on the Form 83 is, whether the deceased person was "of Aboriginal and/or Torres Strait Islander origin". This information is entered into the VSR as part of its initial core dataset, providing the earliest indication as to whether a suspected suicide deceased might be an Aboriginal and/or Torres Strait Islander person.

- The iCMS electronic case management system. When Coronial Admissions and Enquiries staff have first contact with the family of a deceased person, they ask about Aboriginal and Torres Strait Islander identity. This information is recorded in case notes in the iCMS system.

- The Application for Release of a Deceased Person. When a funeral director fills out this application before submitting it to the CCOV, he or she is prompted to ask the family to whom the deceased is released about whether the deceased was identified to be an Aboriginal and/or Torres Strait Islander person.

- The Coronial case file including Brief of Evidence. The VSR coders entering information into the VSR review documents in the Coronial case file which may include reference to the deceased being an Aboriginal and/or Torres Strait Islander person. References can be direct, such as a family member confirming in a statement that the deceased was an Aboriginal person belonging to a particular community. And references can also be indirect or contextual, such as a mention that the deceased had sought assistance from the Victorian Aboriginal Legal Service or was receiving medical treatment at an Aboriginal community-controlled health service.

- The National Coronial Information System (NCIS). The NCIS is a database for Australia and New Zealand coronial cases. Its dataset includes information in completed Australian Coronial investigations, about the "Indigenous origin" of the deceased. The VSR project team regularly reconcile VSR and NCIS data to check whether any relevant deaths may have been missed in the VSR coding process.

In theory these data sources should be largely (if not entirely) congruent with one another. However, in practice the VSR project team has compared across the data sources and found substantial discrepancies; it is uncommon for a deceased person to be identified as an Aboriginal and/or Torres Strait Islander across all datasets or even the majority of datasets. There are several reasons why these discrepancies might occur, including who police speak to in preparing the Form 83 and families' caution in disclosing that their loved ones were Aboriginal and Torres Strait Islander people.

Because of the discrepancies between the different data sources, the VSR data presented here should be regarded as indicative rather than authoritative: it is likely to under-represent the burden of suicide mortality among Aboriginal and Torres Strait Islander people in Victoria. Furthermore, data is only presented here for 2009-2015; these are the years for which enhanced dataset coding has been completed and, therefore, the period for which full-year VSR data about Aboriginal and Torres Strait Islander people is likely to be more accurate. (On this last point, please see Section 6.5 for an outline of recent initiatives to improve data accuracy.)

6.1 Frequency

According to the VSR, 50 Victorian suicides of Aboriginal and Torres Strait Islander people occurred between 2009 and 2015. Given this low absolute frequency presents a risk of identifying individuals, some of the following data has been redacted from the publicly released version of this report.

Table 15 shows the annual frequency of Victorian suicides by sex among Aboriginal and Torres Strait Islander people.

Table 15: Annual frequency and proportion of suicides by sex among Aboriginal and Torres Strait Islander people, Victoria 2009-2015

Year	Male		Female		All	
	N	%	N	%	N	%
2009	[]	[]	[]	[]	3	100.0
2010	[]	[]	[]	[]	5	100.0
2011	[]	[]	[]	[]	6	100.0
2012	[]	[]	[]	[]	13	100.0
2013	[]	[]	[]	[]	8	100.0
2014	[]	[]	[]	[]	5	100.0
2015	[]	[]	[]	[]	10	100.0
Total	**36**	**72.0**	**14**	**28.0**	**50**	**100.0**

The mean age at death was 39.4 years for males and 38.2 years for females. This compares with a mean age at death of 45.5 years for males and 45.1 years for females among all Victorian suicide deceased 2009-2018.

6.2 Average annual rate

Rate calculations based on low absolute frequencies are unreliable. Therefore, the only rate calculation that was deemed to be appropriate for this data was the crude[4] average annual rate. For this calculation, the ABS 2011 population estimate of Aboriginal and Torres Strait Islander people residing in Victorian (47,333)[5] was used as the denominator.

The crude average annual rate was calculated using the method already described in Section 3.2 above: total frequency of suicides (50) divided by 2011 population estimate of Aboriginal and Torres Strait Islander people residing in Victoria (47,333), multiplied by 100,000 then divided by seven years. This yielded a crude average annual rate of **15.1** Victorian suicides per 100,000 Victorian population of Aboriginal and Torres Strait Islander people per year between 2009-2015.

For comparison, the crude average annual rate was calculated for all suicides in Victoria for the period 2009-2015, using the ABS 2011 Victorian population estimate. There were 4136 total suicides in Victoria during the period, and the Victorian 2011 population estimate was 5,537,817 people, yielding a crude average annual rate of **10.7** Victorian suicides per 100,000 Victorian population per year between 2009-2015.

4 A crude rate is calculated by dividing total cases by overall population, without accounting for age, sex or other factors that may be distributed differently between the cases and the population.

5 See ABS catalogue number 3238.0.55.001 (Estimates of Aboriginal and Torres Strait Islander Australians June 2011) released 30 August 2013. This ABS estimate is only released every five years, which is why 2011 was used (it is the only population estimate during the period when the suicides occurred).

6.3 Location of usual residence

Table 16 shows the frequency and proportion of suicides by usual residence location, for Aboriginal and Torres Strait Islander people and all Victorian suicides. Most notably, the proportion of Aboriginal and Torres Strait Islander people who resided in Metropolitan Melbourne was 34%, while this was 66% for all Victorians.

Table 16: Frequency and proportion of suicides among Aboriginal and Torres Strait Islander people and all Victorians by deceased usual residence, 2009-2015 (†Includes people whose usual residence was interstate, overseas, unknown, or who had no fixed address)

Usual residence	Aboriginal and Torres Strait Islander people		All Victorian suicides	
	N	%	N	%
Metropolitan Melbourne	17	34.0	2709	66.3
Regional Victoria	31	62.0	1293	31.7
Other†	2	4.0	83	2.0
Total	**50**	**100.0**	**4085**	**100.0**

6.4 Diagnosed mental illness

Table 17 shows the frequency and proportion of suicides by mental health diagnosis, for Aboriginal and Torres Strait Islander people and all Victorian suicides. There was a slightly higher proportion of both diagnosed and suspected mental illness among Aboriginal and Torres Strait Islander people, however given the low absolute frequency this difference might not be meaningful.

Table 17: Frequency and proportion of suicides among Aboriginal and Torres Strait Islander people and all Victorians by deceased mental health diagnosis, 2009-2015

Mental illness	Aboriginal and Torres Strait Islander people		All Victorian suicides	
	N	%	N	%
Diagnosed	30	60.0	2215	54.2
Suspected (no diagnosis)	13	26.0	887	21.7
Neither diagnosed nor suspected	7	14.0	983	24.1
Total	**50**	**100.0**	**4085**	**100.0**

6.5 Improving Aboriginal and Torres Strait Islander identification

While the data presented here is likely to under-estimate the frequency of Victorian suicides among Aboriginal and Torres Strait Islander people that occurred during 2009-2015, the CCOV has recently made further efforts to address the challenge of identification.

Central to these efforts has been the March 2019 recruitment of a Koori Family Engagement Coordinator to strengthen the relationship between the CCOV and Victoria's Aboriginal and Torres Strait Islander communities. One result of the Koori Family Engagement Coordinator's work with these communities has been improved knowledge of Aboriginal and Torres Strait Islander people who come into the Court's care. These tragically include 10 suspected suicides during the first half of 2019, which further evidences the Court's concern about the historical under-estimation of the burden of suicide mortality among Aboriginal and Torres Strait Islander people in Victoria.

7. Conclusion

The data that the CCOV collated and presented here at the request of the Royal Commission into Victorian Mental Health Services, suggests there are differences between suicides in Metropolitan Melbourne and Regional Victoria with respect to demographic profile, diagnosed mental illness, and contact with health services for mental health related issues.

While collating this summary, the CCOV were invited to consider whether any other Coronial data held in the VSR or elsewhere might further assist the Royal Commission. The following are two observations for the Royal Commission to consider in concluding this data summary.

7.1 The geography of suicide in Victoria

While the data presented here shows differences in the socio-demographic and health profile of people who suicided and were usual residents of Metropolitan Melbourne and Regional Victoria, it is important to keep in mind that Metropolitan Melbourne and Regional Victoria are not in themselves homogenous geographic areas. Comparing one part of Metropolitan Melbourne to another (or one part of Regional Victoria to another) with respect to any of the metrics examined here, may reveal differences of a similar magnitude. For example, among people who suicided and usually resided in Metropolitan Melbourne:

- Between 2009 and 2015, the overall frequency of suicides by LGA ranged from 27 to 155. The crude average annual suicide rate by LGA ranged from 6.8 to 16.4 suicides per 100,000 population per year.
- The proportion of usual residents of Metropolitan Melbourne who suicided between 2009 and 2015 and had a diagnosed mental illness, varied by LGA from 51.8% to 66.9%.
- The proportion of usual residents in Metropolitan Melbourne who suicided between 2009 and 2015 and had contact with a health service for mental health related reasons within six weeks of death, varied by LGA from 33.3% to 65.0%.

This variation was even more pronounced among people who suicided and who were usual residents of Regional Victoria:

- Between 2009 and 2015 the overall suicide frequency by LGA ranged from zero to 202; and the average annual rate ranged from 0.0 to 24.0 suicides per 100,000 population per year.
- The proportion of usual residents of Regional Victoria who suicided between 2009 and 2015 and had a diagnosed mental illness (leaving aside any LGA where less than five suicides occurred during the period), varied by LGA from 14.3% to 72.2%.
- The proportion of usual residents of Regional Victoria who suicided between 2009 and 2015 and had contact with a health service for mental health related reasons within six weeks of death (leaving aside any LGA where less than five suicides occurred during the period), varied by LGA from 0.0% to 62.5%.

Consideration of these variations may be helpful in developing an understanding of the intersections between suicide, mental illness and the mental health system across Victoria.

7.2 Mental illness prevalence among different types of deaths

The Terms of Reference for the Royal Commission, as outlined in the Letters Patent signed by the Honourable Linda Dessau AC on 22 February 2019, describe increased suicide risk as a possible outcome of poor mental health and poor engagement with mental health services.

Mental ill health is prevalent not only in suicide but in many types of deaths investigated by Victorian Coroners. To take two examples:

- The CCOV conducted a review of 581 heroin-involved overdose deaths that occurred in Victoria between 2015 and 2017. In 400 (**68.8%**) of the 581 deaths, the deceased was confirmed to have a diagnosed mental illness other than a substance use related disorder. In nearly half of these deaths, the deceased had been experiencing mental ill health for 10 years or longer.
- The CCOV conducted a preliminary review of a cohort of family violence homicide incidents. Among the 219 deceased people in the cohort, 36 (**16.4%**) were confirmed to have a diagnosed mental illness. In contrast to this, 126 (**59.1%**) of the 213 offenders in the cohort had been diagnosed with a mental illness.

Any recommendations the Royal Commission makes to enhance the lives of people who experience mental illness and Victoria's mental health system, therefore might have the potential to reduce risk for other types of mortality in addition to suicide.

7.3 High-risk groups within the Victorian community

In preliminary discussions regarding the scope of issues to be addressed in this data summary, the Royal Commission requested that the CCOV include relevant data regarding groups within the Victorian community who are at elevated risk of suicide.

The data presented herein identifies certain groups that could be described as 'high-risk' because of elevated suicide rates: for example middle-aged men residing in Regional Victoria and men aged 85 years and over. However, moving from basic socio-demographics (age and sex) to other ways of grouping people within the Victorian community, two central challenges arise in attempting to identify who might be at elevated suicide risk.

The first issue is identifying suicides among people who belong to a particular social or other group within the Victorian community. This challenge was illustrated in Section 6 of this data summary, which discussed at length the difficulties encountered in attempting to establish who were Aboriginal and Torres Strait Islander people.

The CCOV also experiences this challenge when asked how many people suicided within a particular community as defined by ethnic, national, linguistic and/or cultural identity. The VSR contains coded and free-text information on place of birth, languages spoken and cultural belonging, so answering this question would appear to be straightforward. However, in practice the amount of information available can vary substantially between cases, and inferring identity from the available information can be highly problematic. Hypothetically, if the VSR coders were asked to identify how many suicides occurred among the "Vietnamese community", they might end up trying to determine who is "Vietnamese" among a range of scenarios:

- A person born in Vietnam.
- A person born in Australia to two parents, both of whom were born in Vietnam.
- A person born in Australia to two parents, one of whom was born in Vietnam.

- A person born in Vietnam to parents who identified as members of the expatriate Indian community there.
- A person who had a name that appeared to be Vietnamese, with no further information available on cultural and ethnic identity.

The second challenge is establishing the size of the relevant population being examined, so that accurate rates can be calculated to determine whether a particular group is at elevated suicide risk. This challenge is illustrated with respect to suicide among members of the lesbian, gay, bisexual, trans, and intersex (LGBTI) community. According to the VSR enhanced coding, between 2009 and 2015 there were 156 suicides of people who were or may have been members of Victoria's LGBTI community. Leaving aside the difficulties faced in establishing a deceased person identified as being LGBTI, there is no reliable estimate available of the size of the LGBTI population in Victoria, which means the relative risk of suicide in the LGBTI community cannot be calculated.

Illustrating this challenge from another direction, Section 5 of this data summary includes information on suicide among people experiencing diagnosed mental illness, however it does not include rate calculations to establish whether there are higher suicide rates among people with diagnosed mental illness than people who do not have a diagnosis. The CCOV attempted to make these rate calculations, but could not identify what appropriate population (number of people with diagnosed mental illness at a given time; or the lifetime prevalence of diagnosed mental illness in the community; or another statistic) should be used.

7.4 Potential future directions for VSR research

When the CCOV first set about developing the VSR, a driving design principle was that it should assist the CCOV to move beyond simply counting suicides and enumerating their features, to capturing information about why people suicided. This principle was inspired in part by Coroner Paresa Spanos's August 2011 finding in the death of B (name suppressed, case number 20092651), an adolescent student who suicided in a context of relationship difficulties. Coroner Spanos wrote in concluding the finding, that:

> *At present, much of the discussion on youth suicide prevention appears directed towards identifying at risk groups for targeted interventions. [...] For example, the research confirms that many known risk factors for youth suicide - including particularly mental illness, previously expressed suicidal ideation, exposure to traumatic events and experiences, and relationship breakdowns - appear to be commonly present amongst youth suicides in Victoria, but this does not substantially advance our ability to predict suicide. Every year, thousands of young Victorians suffer a mental illness, for example, or break up with a boyfriend or girlfriend, but do not suicide in response. There would be gains to public health and safety therefore, if youth suicide research could re-direct some focus beyond identifying and quantifying the presence of known risk factors, to understanding why one youth may suicide in circumstances where others do not.*

The VSR includes a range of free-text fields where the story of the suicide can be recorded, including particularly the meaning for the person of the various stressors experienced and the reasons the deceased, their family members, clinicians and others identified as to why the deceased took his or her own life.

To date the CCOV's examination of meaning in suicide has mainly focused on restricted cohorts: for example looking at what reasons people gave in their suicide notes for suiciding after being charged with alleged sex offences; how people with diagnosed cancer did (and did not) frame their reasons for suicide within their experience of cancer; and what evidence there was of cultural and study related stressors among international students who suicided.

However, the VSR data would be appropriate for larger-scale research into reasons and meaning in suicide. One such research project with the potential to generate significant insights into suicide prevention, would be to examine how health services have responded to people experiencing situational crises in the lead-up to suicide. Many Victorians with mental illness who die by suicide, identify situational crises (usually involving multiple stressors such as relationship breakdown, financial issues, alcohol abuse, and engagement with police) as contributing to the decision to take their lives. Health services - particularly mental health services - might need assistance to support people with mental illness who are experiencing these crises.

Appendix A

The three tables below show the annual population estimates by sex and age group, Victoria 2009-2018, which were used to calculate rates in Section 3.2 of the data summary. The annual population estimates were collated from the ABS Estimated Resident Population By Single Year Of Age workbook (catalogue number 3101.0 issued 21 March 2019).

Table A1: Annual population estimate by age group, Victoria 2009-2018

Age group (years)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
10 to 14	331,234	330,111	330,056	331,587	334,698	338,709	343,096	351,523	363,712	375,091
15 to 19	359,008	357,390	354,583	357,924	361,250	365,291	368,010	371,797	374,180	377,378
20 to 24	406,371	412,998	412,447	415,249	420,370	428,772	437,824	450,298	465,869	479,167
25 to 34	774,912	796,761	816,612	843,767	872,506	899,627	928,556	959,759	992,032	1,021,489
35 to 44	783,163	789,629	795,628	805,133	812,595	817,506	825,379	834,698	850,354	871,058
45 to 54	728,634	737,099	743,095	751,492	761,732	773,016	783,941	798,051	810,049	817,263
55 to 64	593,311	608,221	623,230	631,698	644,367	659,294	673,847	690,030	705,889	719,712
65 to 74	384,020	398,923	414,634	438,508	458,887	476,994	495,839	515,930	533,010	551,354
75 to 84	252,390	255,054	258,462	262,072	266,686	272,351	278,032	285,215	294,807	303,518
85 and over	95,216	100,031	104,390	109,344	114,121	118,609	123,142	127,330	130,185	133,552

Table A2: Annual population estimate for males by age group, Victoria 2009-2018

Age group (years)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
10 to 14	170,394	169,452	169,404	169,920	171,263	173,430	176,218	180,505	186,953	192,898
15 to 19	184,551	183,305	181,658	183,119	185,216	187,376	188,047	190,121	191,262	193,071
20 to 24	210,582	212,983	211,018	211,688	213,713	218,448	223,342	229,694	238,651	246,980
25 to 34	390,256	401,205	410,336	423,743	437,581	449,372	462,696	477,092	492,872	507,954
35 to 44	385,979	389,074	392,147	397,172	401,458	404,061	408,363	414,392	422,989	433,743
45 to 54	359,488	363,288	365,680	369,636	374,427	379,065	383,677	389,310	394,672	397,722
55 to 64	292,132	299,040	305,989	309,551	315,199	321,992	328,487	335,751	343,220	349,850
65 to 74	186,640	194,266	202,601	214,053	223,845	232,573	241,508	250,868	258,755	266,981
75 to 84	111,337	112,963	114,894	117,534	120,251	123,408	126,684	130,499	135,527	140,128
85 and over	32,038	34,064	35,939	38,245	40,766	43,080	45,356	47,549	49,072	50,879

Table A2: Annual population estimate for females by age group, Victoria 2009-2018

Age group (years)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
10 to 14	160,840	160,659	160,652	161,667	163,435	165,279	166,878	171,018	176,759	182,193
15 to 19	174,457	174,085	172,925	174,805	176,034	177,915	179,963	181,676	182,918	184,307
20 to 24	195,789	200,015	201,429	203,561	206,657	210,324	214,482	220,604	227,218	232,187
25 to 34	384,656	395,556	406,276	420,024	434,925	450,255	465,860	482,667	499,160	513,535
35 to 44	397,184	400,555	403,481	407,961	411,137	413,445	417,016	420,306	427,365	437,315
45 to 54	369,146	373,811	377,415	381,856	387,305	393,951	400,264	408,741	415,377	419,541
55 to 64	301,179	309,181	317,241	322,147	329,168	337,302	345,360	354,279	362,669	369,862
65 to 74	197,380	204,657	212,033	224,455	235,042	244,421	254,331	265,062	274,255	284,373
75 to 84	141,053	142,091	143,568	144,538	146,435	148,943	151,348	154,716	159,280	163,390
85 and over	63,178	65,967	68,451	71,099	73,355	75,529	77,786	79,781	81,113	82,673