

# **Victoria's mothers, babies and children 2014 and 2015**

## **Appendix 5: Maternal deaths in Victoria 2014 and 2015**

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Where the term 'Aboriginal' is used it refers to both Aboriginal and Torres Strait Islander people. Indigenous is retained when it is part of the title of a report, program or quotation.

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## Appendix 5: Maternal deaths in Victoria 2014 and 2015

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**Table 1: Maternal mortality ratios in Victoria 1988–2015 (per 100,000 confinements)**

Year	Direct deaths	Indirect deaths	Confinements <sup>a</sup>	Maternal mortality ratio <sup>b</sup>
1988	3	5	62,854	12.7
1989	2	3	63,419	7.9
1990	6	3	66,004	13.6
1991	1	3	64,338	6.2
1992	2	2	65,404	6.1
1993	3	0	63,795	4.7
1994	2	3	63,983	7.8
1995	4	3	62,734	11.2
1996	2	0	62,028	3.2
1997	2	2	61,312	6.5
1998	2	1	61,071	4.9
1999	2	2	61,588	6.5
2000	2	2	61,571	6.5
2001	1	4	61,108	8.2
2002	5	2	62,023	11.3
2003	0	3	62,403	4.8
2004	4	8	62,543	19.2
2005	3	4	65,429	10.7
2006	1	6	68,547	10.2
2007	1	9	71,190	14.0
2008	2	1	71,323	4.2
2009	1	4	71,986	6.9
2010	3	3	73,302	8.2
2011	3	4	72,951	9.6
2012	4	6	77,183	13.0
2013	2	5	77,130	9.1
2014	2	4	77,930	7.7
2015 <sup>c</sup>	1	3	78,147	5.1

a. Includes confinements related to termination of pregnancy.

b. Per 100,000 confinements. Ratio calculated using direct and indirect deaths.

c. The single direct death is included in 2015, however the death did not occur in Victoria. A Victorian resident, who had her obstetric care in Victoria, died from sepsis related to preterm rupture of membranes. She died at a health service interstate. Excluding her death from the Victorian Maternal Mortality ratio decreases the Maternal Mortality ratio to 3.8.

Note that this table refers only to direct and indirect deaths occurring within 42 days of the birth. Excluded from this table are all late maternal deaths (indirect or direct deaths occurring 42–364 days after birth) and incidental maternal deaths.

**Table 2: Maternal mortality ratios by triennia, Victoria and Australia 1988–2015**

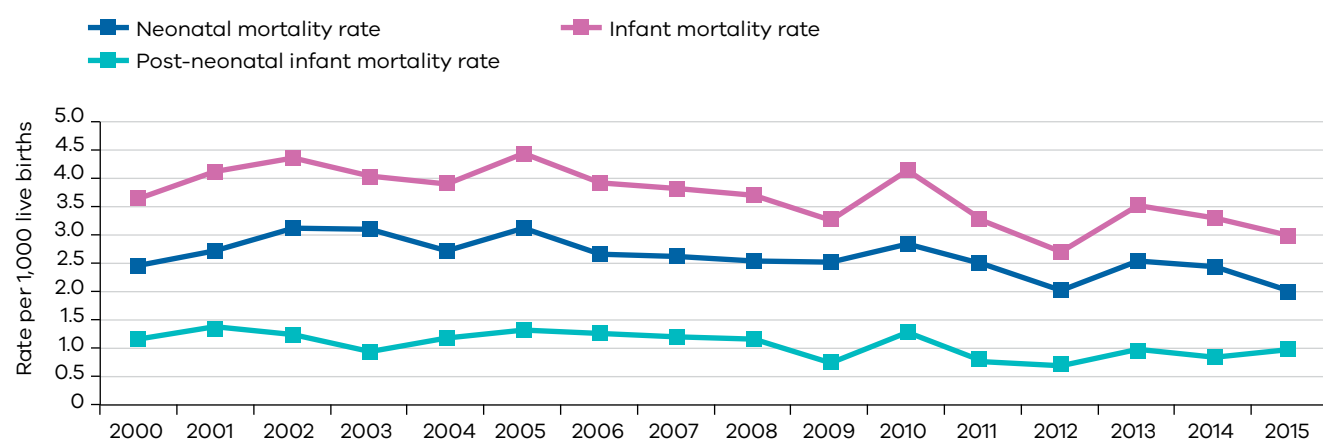
Triennium	Direct deaths	Indirect deaths	Confinements	Victoria Maternal mortality ratio <sup>a</sup>	Australia Maternal mortality ratio <sup>a,b</sup>
1988–1990	11	11	192,277	11.4	9.3
1991–1993	6	5	193,537	5.7	6.2
1994–1996	8	6	188,745	7.4	8.6
1997–1999	6	5	183,971	6.0	8.4
2000–2002	8	8	184,702	8.7	11.1
2003–2005	7	15	190,375	11.6	8.4
2006–2008	4	16	211,060	9.5	6.9
2009–2011	7	11	218,239	8.2	7.2
2012–2014	8	15	232,243	9.9	N/A
2013–2015 <sup>c</sup>	5	12	233,207	7.3	N/A

a. Per 100,000 confinements. Ratio calculated using direct and indirect deaths occurring within 42 days of the birth.

b. Source of Australian mortality ratios: Australian Institute of Health and Welfare 2015, Maternal deaths in Australia 2008–2012, AIHW, Canberra.

c. Note that the year 2013 and 2014 are included twice in this table, that is, a rolling triennia was used for the most recent two triennia so that the 2014 and 2015 data could be represented.

N/A – not available

**Figure 1: Mortality ratios by triennia, Victoria and Australia, 1988–2015****Table 3: Five year periods for National comparison**

Five year period	Direct deaths	Indirect deaths	Confinements	Victoria Maternal mortality ratio <sup>a</sup>	Australia Maternal mortality ratio <sup>a</sup>
2006–2010 <sup>b</sup>	8	23	356,348	8.7	6.8
2008–2012 <sup>c</sup>	14	18	366,745	8.7	7.1
2010–2014	14	22	378,496	9.5	N/A
2011–2015 <sup>d</sup>	12	22	383,341	8.9	N/A

a. Per 100,000 confinements. Ratio calculated using direct and indirect deaths occurring within 42 days of the birth.

b. Source of Australian maternal mortality ratios: Australian Institute of Health and Welfare 2014, Maternal deaths in Australia 2006–2010, AIHW, Canberra.

c. Source of Australian maternal mortality ratios: Australian Institute of Health and Welfare 2015, Maternal deaths in Australia 2008–2012, AIHW, Canberra.

d. The Victorian maternal mortality ratio for the period 2011–2015 is added to include data covering 2015.

N/A – not available

**Table 4: Causes of maternal deaths, Victoria 2014**

	Total
<b>Direct maternal deaths</b>	<b>2</b>
Amniotic fluid embolism	1
Anaesthetic – related death	1
<b>Indirect maternal deaths</b>	<b>4</b>
Intracranial haemorrhage	1
Intraventricular haemorrhage	1
Aortic aneurysm dissection	1
Undetermined	1
<b>Incidental maternal deaths</b>	<b>0</b>
<b>Late maternal death (direct or indirect)</b>	<b>0</b>
<b>Late maternal death (incidental)</b>	<b>4</b>
Subarachnoid haemorrhage secondary to endocarditis	1
Metastatic melanoma	1
Traumatic head injury (unintentional)	1
Traumatic head injury (assault)	1
<b>Total</b>	<b>10</b>

**Table 5: Causes of maternal deaths, Victoria 2015**

	Total
<b>Direct maternal deaths</b>	<b>1</b>
Sepsis <sup>a</sup>	1
<b>Indirect maternal deaths</b>	<b>3</b>
Dilated cardiomyopathy	1
Combined drug toxicity	1
Unascertained	1
<b>Incidental maternal deaths</b>	<b>0</b>
<b>Late maternal death (direct or indirect)</b>	<b>0</b>
<b>Late maternal death (incidental)</b>	<b>5</b>
Prolonged QT syndrome	1
Pulmonary embolus	1
Combined drug toxicity	2
Multiple injuries (assault)	1
<b>Total</b>	<b>9</b>

a. This death did not occur in Victoria.

**Table 6: Causes of maternal deaths, Victoria 2011-2015**

	Cause of death	Maternal deaths included in mortality ratio	Late <sup>a</sup> maternal deaths
<b>Direct</b>		<b>N = 12</b>	<b>N = 1</b>
(due to a complication of the pregnancy)	Obstetric haemorrhage	3	
	Thromboembolism	2	1
	Anaesthetic related death	2	
	Amniotic fluid embolus	2	
	Early pregnancy death – ectopic pregnancy	1	
	Sepsis <sup>b</sup>	1	
	Post partum sepsis – <i>Streptococcus</i> Group A	1	
<b>Indirect</b>		<b>N = 22</b>	<b>N = 5</b>
(related to a pre-existing or newly diagnosed condition exacerbated by pregnancy)	Cardiac disease	8	
	Non-obstetric haemorrhage (includes intracerebral bleeding)	8	
	Psychosocial <sup>c</sup>	1	2
	Sepsis – acute pyelonephritis	1	
	Complications of heart transplant for the treatment of peripartum cardiomyopathy		1
	Carcinoma of the cervix		1
	Bronchopneumonia with associated psychosocial problems		1
	Mixed drug toxicity	1	
	Undetermined	3	
<b>Incidental</b>		<b>N = 0</b>	<b>N = 11</b>
(where the pregnancy is unlikely to have contributed significantly to the death)	Bronchopneumonia		1
	Metastatic melanoma		1
	Subarachnoid haemorrhage secondary to endocarditis		1
	Prolonged QT syndrome		1
	Pulmonary embolus		1
	Complications post tubal ligation		1
	Injuries (assault)		2
	Traumatic head injury (unintentional)		1
	Combined drug toxicity		2
<b>Total</b>		<b>34</b>	<b>17</b>

a. Late maternal deaths occur after 42 days but within 1 year of the birth and are not included in the maternal mortality ratio.

b. This death did not occur in Victoria.

c. Psychosocial causes include deaths in which a psychiatric and/or social condition contributed to the cause of death and encompass wider issues such as family violence and substance misuse. In 2012 the National Maternal Mortality Advisory Committee advised that maternal deaths from suicide where the onset of mental health disorder is first recognised in pregnancy should be classified as “direct” deaths, all other maternal suicides and psychosocial deaths should be classified as “indirect”. Previously many psychosocial deaths unrelated to the pregnancy were classified as “incidental” deaths.

Psychosocial causes can include intentional self-harm and homicide.

**Table 7: Assessment of contributing factors in maternal deaths, Victoria 2011–2015**

Contributing factor	Number
<b>Factors relating to access to care</b>	<b>3</b>
Delay in transfer	1
Delay in access to specialist assistance	1
Lack of access to specialist care and services	1
<b>Factors relating to professional practice</b>	<b>23</b>
Anaesthetic issues	3
Delay in diagnosis and transfer	4
Failure to review diagnosis in light of diagnostic evidence	1
Failure to maintain an adequate airway and ventilation	1
Over-reliance on test result despite clinical evidence of placenta accreta	1
Inadequate communication/communication breakdown	1
Inadequate management of obstetric haemorrhage (monitoring, diagnosis, resuscitation)	3
Inadequate investigation and management of sepsis	1
Suboptimal resuscitation	3
Suboptimal diabetes management	1
Inappropriate discharge	1
Poor organisational management	1
Poor crisis management	1
Poor documentation	1
<b>Factors relating to the pregnant woman, her family and social situation</b>	<b>8</b>
Declining or not following medical advice	1
Delay in seeking medical advice	1
Family violence	3
Substance misuse	3
<b>Total</b>	<b>33</b>

Contributing factors were identified in 15 of all 51 maternal deaths (29%). Multiple contributing factors were present in some cases.

Removing the 11 incidental deaths increases the proportion in whom contributing factors were found to 48% (15/40).