



Australian Government

**Australian Institute of
Health and Welfare**

*Better information and statistics
for better health and wellbeing*

**CANCER SERIES
Number 53**

Gynaecological cancer projections 2010–2015

May 2010

Australian Institute of Health and Welfare
Canberra

Cat. no. CAN 49

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This publication is part of the Australian Institute of Health and Welfare's Cancer series. A complete list of the Institute's publications is available from the Institute's website <www.aihw.gov.au>.

ISSN 1039-3307

ISBN 978-1-74249-026-7

Suggested citation

Australian Institute of Health and Welfare 2010. Gynaecological cancer projections 2010–2015. Cancer series no. 53. Cat. no. CAN 49. Canberra: AIHW.

Australian Institute of Health and Welfare

Board Chair

Hon. Peter Collins, AM, QC

Director

Penny Allbon

Any enquiries about or comments on this publication should be directed to:

Melissa Goodwin

Australian Institute of Health and Welfare

GPO Box 570

Canberra ACT 2601

Phone: (02) 6244 1041

Email: melissa.goodwin@aihw.gov.au

Published by the Australian Institute of Health and Welfare

Please note that there is the potential for minor revisions of data in this report. Please check the online version at <www.aihw.gov.au> for any amendments.

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Acknowledgments

This project was funded by the National Centre for Gynaecological Cancers, Cancer Australia.

The Australasian Association of Cancer Registries supplied the data for the report, and provided subject matter expertise.

This project was carried out by Brett Davis and Melissa Goodwin from the Cancer and Screening Unit of the Australian Institute of Health and Welfare. Assistance was provided by Mark Short and Chris Sturrock.

Any enquiries about or comments on the data and statistical analyses in this report should be directed to:

Ms Melissa Goodwin
Cancer and Screening Unit
Australian Institute of Health and Welfare
GPO Box 570
Canberra ACT 2601
Phone: (02) 6244 1041
Email: cancer@aihw.gov.au

Gynaecological cancer projections 2010–2015

This document provides information on the projected incidence of gynaecological cancers with separate projections given for each of the following subcategories:

- ovarian cancer (ICD-10 code C56)
- cervical cancer (ICD-10 code C53)
- uterine cancer (ICD-10 codes C54 and C55)
- cancers of other (and unspecified) female reproductive organs, referred to as ‘other gynaecological cancers’ (ICD-10 codes C51, C52, C57 and C58).

Projected incidence counts for the calendar years 2010 and 2015, by state and territory and at the national level are presented for each of the gynaecological cancers listed, as well as for all gynaecological cancers combined. These counts are expressed as a crude rate, per 100,000 of the corresponding projected female population.

The predicted counts for Australia are derived from a model for the change in the national incidence rate over time and projected population counts. Predictions for the states and territories incorporate an additional factor, called the standardised incidence ratio, which quantifies local trends that are not observable in the national data. This factor is the ratio of observed incidence counts at the jurisdictional level to the values predicted by the national model. As a result of this adjustment, the projected Australian incidence may differ from the sum of the projected state and territory incidences.

For each of the calendar years from 2010 to 2015, projected national incidence counts, together with the corresponding crude and age-standardised rates (ASR), are also provided for each specified cancer. The ASR is benchmarked to the 2001 Australian population and its 95% confidence interval (CI) is also included. It is important to note that the 95% confidence intervals included in the national projections are applied to the estimates obtained after age-standardisation has been completed; they are not projection intervals.

Please refer to the ‘Methodology’ section for further details on the methods used.

Caveats

Projections are, by nature, estimates about what might reasonably be expected in the future. Inherent fluctuations in both cancer incidence and population dynamics mean that care should be taken when using and interpreting the projection results. Projections are not intended to be used as exact forecasts, but to illustrate future changes that would occur if the stated assumptions were to apply over the projection time frame.

It is important to note that the projections presented here should be treated with caution as they depend on a number of assumptions relating to trends in cancer incidence:

- the data analysed are adequate to produce accurate estimates of trends in incidence over time
- past trends will continue for the projected time frame

- the incidence rate for each cancer type is homogeneous across each individual jurisdiction.

Methodology

The projection methods used for the national and jurisdictional projections of the specified cancers in this project were derived using a three-stage strategy:

1. Develop national projection model

For each of the specified cancers, a linear regression model with a logit transformation (to prevent projecting incidence rates below 0) was developed using national incidence data from 1997–2006 for the following age groups: 0–44, 45–54, 55–64, 65–74 and 75 years and over. The age groups modelled were determined according to the age-specific incidence rate for each cancer type to ensure there were sufficient cases in each group to provide reasonably accurate estimates. National counts and crude rates for each gynaecological cancer type are included in the Appendix.

The significance of time as a predictor was determined at the 5% level by applying a two-tailed test to its coefficient. In age groups where time was not significant, the projection was based on the mean incidence rate over 1997–2006.

2. Apply population projections

For each of the age–time models developed, projected rates were applied to Australian Bureau of Statistics' projected populations by state and territory, *Population projections, Australia, 2006 to 2101* (series B) (provided at <<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/3222.0Main+Features12006%20to%202101?OpenDocument>>) to obtain projected incidence counts for all Australia.

3. Adjust national model for jurisdictional trends

To account for differences in jurisdictional rates and trends not observable in the national data, predictions for the states and territories incorporate an additional factor, called the standardised incidence ratio. This factor is the ratio of observed incidence counts for the period 2002–2006 at the jurisdictional level to the values predicted for that jurisdiction by the national model.

To obtain projected counts and rates for all gynaecological cancers combined, the projected counts for each specified cancer were summed for each jurisdiction and nationally.

Results

Ovarian cancer (ICD-10 code C56)

It is important to note that the projections for ovarian cancer presented here differ slightly from those published recently by the Australian Institute of Health and Welfare in Table D2.4 in *Ovarian cancer in Australia: an overview, 2010*. However, they are within the prediction interval published in that report. This difference is due to a more sophisticated methodology being used in the present analysis in order to produce state and territory projections.

Table 1.1: Projected incidence counts and crude rates for ovarian cancer, by jurisdiction: 2010 and 2015

State	2010		2015	
	Count	Crude rate	Count	Crude rate
New South Wales	443	12.3	478	12.6
Victoria	360	13.1	394	13.4
Queensland	248	11.1	281	11.3
Western Australia	142	12.8	161	13.1
South Australia	96	11.6	103	11.9
Tasmania	30	11.7	32	12.1
Australian Capital Territory	21	11.8	23	12.2
Northern Territory	8	7.3	9	7.6
Australia	1,355	12.3	1,488	12.5

Notes:

1. Projected counts for each state and territory have been adjusted for local trends using a standardised incidence ratio. Hence, columns may not sum to the projected counts for Australia as a whole.
2. Methodology used differs to that used in NSW and so the numbers will differ to those published by NSW.

Table 1.2: Projected national incidence counts for ovarian cancer, together with crude and age-standardised rates: 2010 to 2015

	2010	2011	2012	2013	2014	2015
Count	1,355	1,378	1,407	1,431	1,460	1,488
Crude rate	12.3	12.3	12.4	12.4	12.5	12.5
ASR	10.8	10.8	10.7	10.7	10.7	10.6
95% CI	10.3–11.4	10.2–11.4	10.2–11.3	10.1–11.3	10.1–11.2	10.1–11.2

Note: 95% confidence intervals are for the age standardisation process only; they are not projection intervals.

Cervical cancer (ICD-10 code C53)

Table 2.1: Projected incidence counts and crude rates for cervical cancer, by jurisdiction: 2010 and 2015

State	2010		2015	
	Count	Crude rate	Count	Crude rate
New South Wales	240	6.7	249	6.6
Victoria	167	6.1	176	6.0
Queensland	179	8.0	196	7.9
Western Australia	86	7.7	93	7.6
South Australia	48	5.8	50	5.8
Tasmania	21	8.2	21	7.9
Australian Capital Territory	12	6.8	13	6.9
Northern Territory	11	10.0	11	9.3
Australia	826	7.5	873	7.4

Notes:

1. Projected counts for each state and territory have been adjusted for local trends using a standardised incidence ratio. Hence, columns may not sum to the projected counts for Australia as a whole.
2. Methodology used differs to that used in NSW and so the numbers will differ to those published by NSW.

Table 2.2: Projected national incidence counts for cervical cancer, together with crude and age-standardised rates: 2010 to 2015

	2010	2011	2012	2013	2014	2015
Count	826	835	844	854	863	873
Crude rate	7.5	7.4	7.4	7.4	7.4	7.4
ASR	7.2	7.2	7.1	7.1	7.1	7.0
95% CI	6.7–7.7	6.7–7.7	6.7–7.6	6.6–7.6	6.6–7.6	6.6–7.5

Note: 95% confidence intervals are for the age-standardisation process only; they are not projection intervals.

Uterine cancer (ICD-10 codes C54 and C55)

Table 3.1: Projected incidence counts and crude rates for uterine cancer, by jurisdiction: 2010 and 2015

State	2010		2015	
	Count	Crude rate	Count	Crude rate
New South Wales	657	18.3	740	19.5
Victoria	559	20.4	637	21.7
Queensland	418	18.7	495	20.0
Western Australia	177	15.9	209	17.1
South Australia	189	22.9	211	24.4
Tasmania	54	21.1	61	23.0
Australian Capital Territory	29	16.3	33	17.6
Northern Territory	13	11.9	16	13.5
Australia	2,049	18.5	2,353	19.8

Notes:

1. Projected counts for each state and territory have been adjusted for local trends using a standardised incidence ratio. Hence, columns may not sum to the projected counts for Australia as a whole.
2. Methodology used differs to that used in NSW and so the numbers will differ to those published by NSW.

Table 3.2: Projected national incidence counts for uterine cancer, together with crude and age-standardised rates: 2010 to 2015

	2010	2011	2012	2013	2014	2015
Count	2,049	2,107	2,168	2,228	2,288	2,353
Crude rate	18.5	18.8	19.1	19.3	19.5	19.8
ASR	16.1	16.2	16.3	16.3	16.4	16.5
95% CI	15.4–16.9	15.5–16.9	15.6–17.0	15.7–17.0	15.7–17.1	15.8–17.1

Note: 95% confidence intervals are for the age-standardisation process only; they are not projection intervals.

Other gynaecological cancers (ICD-10 codes C51, C52, C57 and C58)

Table 4.1: Projected incidence counts and crude rates for other gynaecological cancers, by jurisdiction: 2010 and 2015

State	2010		2015	
	Count	Crude rate	Count	Crude rate
New South Wales	152	4.2	169	4.5
Victoria	109	4.0	123	4.2
Queensland	83	3.7	99	4.0
Western Australia	47	4.2	54	4.4
South Australia	35	4.2	38	4.4
Tasmania	14	5.5	15	5.7
Australian Capital Territory	7	3.9	7	3.7
Northern Territory	5	4.6	7	5.9
Australia	453	4.1	514	4.3

Notes:

1. Projected counts for each state and territory have been adjusted for local trends using a standardised incidence ratio. Hence, columns may not sum to the projected counts for Australia as a whole.
2. Methodology used differs to that used in NSW and so the numbers will differ to those published by NSW.

Table 4.2: Projected national incidence counts for other gynaecological cancers, together with crude and age-standardised rates: 2010 to 2015

	2010	2011	2012	2013	2014	2015
Count	453	463	476	484	501	514
Crude rate	4.1	4.1	4.2	4.2	4.3	4.3
ASR	3.6	3.6	3.6	3.6	3.6	3.6
95% CI	3.2–3.9	3.2–3.9	3.3–3.9	3.2–3.9	3.3–3.9	3.3–3.9

Note: 95% confidence intervals are for the age-standardisation process only; they are not projection intervals.

All gynaecological cancers combined (C51–C58)

Table 5.1: Projected incidence counts and crude rates for all gynaecological cancers, by jurisdiction: 2010 and 2015

State	2010		2015	
	Count	Crude rate	Count	Crude rate
New South Wales	1,492	41.5	1,636	43.1
Victoria	1,195	43.5	1,330	45.3
Queensland	928	41.5	1,071	43.2
Western Australia	452	40.7	517	42.2
South Australia	368	44.6	402	46.5
Tasmania	119	46.5	129	48.7
Australian Capital Territory	69	38.9	76	40.5
Northern Territory	37	33.7	43	36.2
Australia	4,683	42.4	5,228	44.1

Notes:

1. Projected counts for each state and territory have been adjusted for local trends using a standardised incidence ratio. Hence, columns may not sum to the projected counts for Australia as a whole.
2. Methodology used differs to that used in NSW and so the numbers will differ to those published by NSW.

Table 5.2: Projected national incidence counts for all gynaecological cancers, together with crude and age-standardised rates: 2010 to 2015

	2010	2011	2012	2013	2014	2015
Count	4,683	4,783	4,895	4,997	5,112	5,228
Crude rate	42.4	42.6	43.0	43.3	43.7	44.1
ASR	37.7	37.7	37.7	37.7	37.7	37.7
95% CI	36.7–38.9	36.6–38.8	36.7–38.8	36.6–38.8	36.7–38.8	36.7–38.8

Note: 95% confidence intervals are for the age-standardisation process only; they are not projection intervals.

Appendix

Table A.1: National incidence counts and crude rates for gynaecological cancers: 1997 to 2006

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Ovarian cancer (C56)										
Count	1,057	1,123	1,135	1,137	1,125	1,228	1,128	1,267	1,219	1,226
Crude rate	11.3	11.9	11.9	11.8	11.5	12.4	11.3	12.5	11.9	11.8
Cervical cancer (C53)										
Count	811	870	801	762	739	690	727	725	730	715
Crude rate	8.7	9.2	8.4	7.9	7.6	7.0	7.3	7.2	7.1	6.9
Uterine cancer (C54 and C55)										
Count	1,383	1,406	1,436	1,586	1,543	1,664	1,702	1,813	1,839	1,860
Crude rate	14.8	14.9	15.1	16.4	15.8	16.8	17.0	17.9	17.9	17.9
Other gynaecological cancers (C51, C52, C57 and C58)										
Count	350	321	336	331	370	358	357	377	431	442
Crude rate	3.8	3.4	3.5	3.4	3.8	3.6	3.6	3.7	4.2	4.2
All gynaecological cancers (C51–C58)										
Count	3,601	3,720	3,708	3,816	3,777	3,940	3,914	4,182	4,219	4,243
Crude rate	38.7	39.5	38.9	39.6	38.6	39.8	39.1	41.3	41.1	40.7

Note: Crude rates are expressed per 100,000 females.

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