

## ■ Childhood cancer

Cancer in children (0–14 years) is relatively uncommon, accounting for less than 1% of cancer registrations and cancer deaths when all ages are included. In 1996/97 this corresponded to 136 registrations (74 male and 62 female) and 36 deaths (21 male and 15 female).

Just over a third of all childhood cancer is leukaemia. The other leading sites are, in descending order: brain, bone and connective tissue, non-Hodgkin's lymphoma, and kidney. These five sites together account for more than 80% of childhood cancer registrations and more than 70% of childhood cancer deaths.

Among males the incidence rate of childhood cancer increased from 13 per 100,000 in 1956 to approximately 17 per 100,000 in the early 1980s, and has since remained stable at around that level to 1996. The corresponding rate for females has increased continuously throughout the observation period, from 10 per 100,000 in 1956 to 15 per 100,000 in 1996, though the upward trend has slowed considerably in the last 15 years compared to the earlier years.

In contrast to the incidence trend, the mortality rate of childhood cancer has fallen steadily throughout the observation period, from 8 per 100,000 in 1972 to 5 per 100,000 in 1997 among males, and from 7 per 100,000 to 4 per 100,000 among females.

The contrasting trends in incidence and mortality rates are forecast to continue. By 2011 the incidence rate is projected to increase<sup>1</sup> to 21 per 100,000 (CI 14 – 29) among males and 19 per 100,000 (CI 12 – 26) among females. Given anticipated trends in the size of the child population, this corresponds to 85 (CI 51 – 125) male and 75 (CI 45 – 106) female registrations, increases over the 1996 counts of 15% and 21%, respectively.

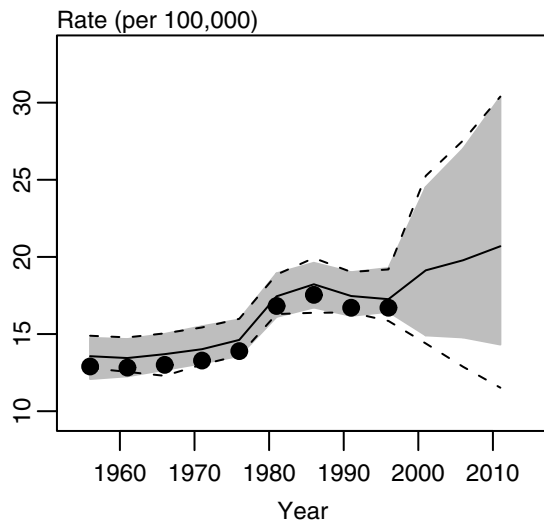
The child cancer mortality rate is projected to decrease further, to 4 per 100,000 (CI 2 – 5) and 3 per 100,000 (CI 2 – 4) in 2012 among males and females, respectively. This corresponds to 16 (CI 8 – 22) male and 12 (CI 5 – 15) female deaths, decreases of 24% and 20% over 1997, respectively.

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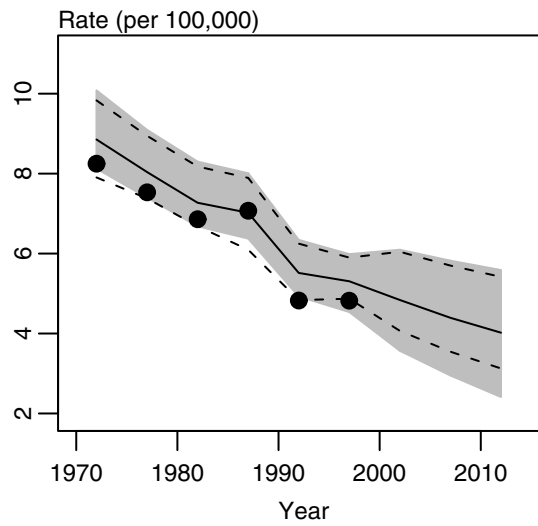
<sup>1</sup> The most recent data may be slightly inflated by improved haematology reporting (Jim Fraser, personal communication, September 2002). This in turn may have affected our forecast.

**Figure 8.1** Trends and projections of age standardised rates, childhood cancer

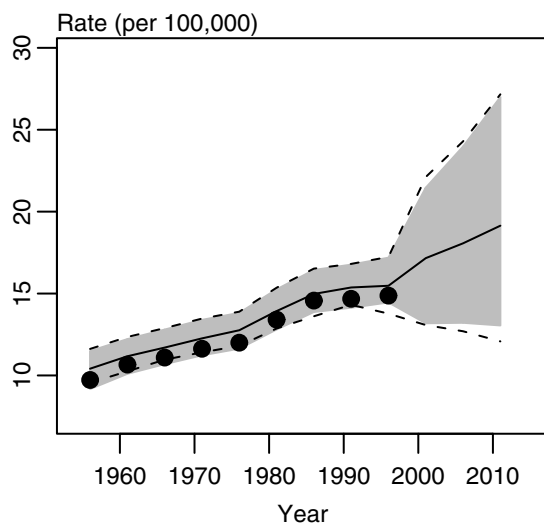
(a) Male incidence rates



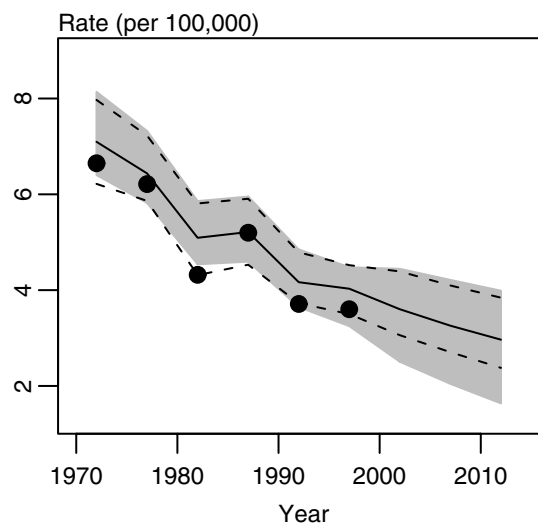
(b) Male mortality rates



(c) Female incidence rates



(d) Female mortality rates



- Key:
- Observed
  - Fitted and projected
  - - Minimum and maximum estimates
  - 90% Bayesian credible interval

Please refer to Chapter 2 for interpretation of charts

**Table 8.1** Key results, childhood cancer,

## Males

	Incidence			Mortality		
	1996	2011 (CI)	change (%)	1997	2012 (CI)	change (%)
<i>Age standardised or age specific rate (per 100,000)</i>						
0–15	17	21 (14 – 29)	24	5	4 (2 – 5)	-
0–4	24	27 (16 – 39)	14	5	4 (2 – 6)	-
5–9	14	20 (12 – 30)	36	5	4 (2 – 5)	-
10–14	12	16 (10 – 22)	28	5	4 (2 – 5)	-
<i>Number of cases</i>						
0–15	74	85 (51 – 125)	15	21	16 (8 – 22)	-24
0–4	36	35 (20 – 51)	-3	7	6 (3 – 8)	-14
5–9	21	27 (17 – 41)	26	8	6 (3 – 7)	-21
10–14	17	23 (14 – 33)	37	7	5 (3 – 7)	-27

## Females

	Incidence			Mortality		
	1996	2011 (CI)	change (%)	1997	2012 (CI)	change (%)
<i>Age standardised or age specific rate (per 100,000)</i>						
0–15	15	19 (12 – 26)	29	4	3 (2 – 4)	-
0–4	21	24 (14 – 34)	16	3	3 (2 – 4)	-
5–9	9	17 (11 – 26)	81	3	3 (1 – 4)	-
10–14	14	16 (9 – 22)	13	4	3 (1 – 4)	-
<i>Number of cases</i>						
0–15	62	75 (45 – 106)	21	15	12 (5 – 15)	-20
0–4	30	30 (17 – 41)	1	4	4 (2 – 5)	-
5–9	13	22 (15 – 34)	64	5	4 (2 – 5)	-
10–14	19	23 (13 – 30)	24	6	4 (2 – 5)	-

CI = 90% Bayesian credible interval

Percentage change omitted when estimate is not robust because of small numbers.

**Table 8.2** Full results, childhood cancer

(a) Male registration

Calendar period	Age group			ASR	
	0–4	5–9	10–14	(0–14 years)	Credible interval
<i>Rate (per 100,000 per year)</i>					
1954–58	16.7	9.7	12.2	12.9	
1959–63	14.9	11.8	11.8	12.8	
1964–68	17.6	11.7	9.8	13.1	
1969–73	18.4	13.2	8.4	13.4	
1974–78	15.5	13.8	12.5	13.9	
1979–83	27.5	11.2	11.8	16.9	
1984–88	24.8	13.9	13.9	17.6	
1989–93	22.0	11.5	16.5	16.7	
1994–98	23.8	14.3	12.2	16.8	
1999–03	25.3	17.6	14.6	19.2	(14.2 – 23.4)
2004–08	26.1	18.4	15.0	19.9	(14.1 – 25.7)
2009–13	27.1	19.5	15.6	20.8	(13.6 – 28.9)
<i>Cases (per year)</i>				Total count	
1954–58	22	12	12	46	
1959–63	22	16	15	53	
1964–68	27	18	13	59	
1969–73	28	21	13	62	
1974–78	23	22	20	65	
1979–83	36	16	18	70	
1984–88	32	18	20	71	
1989–93	32	15	22	69	
1994–98	36	21	17	74	
1999–03	37	27	22	86	(57 – 113)
2004–08	35	27	23	85	(55 – 119)
2009–13	35	27	23	85	(51 – 125)

Notes: (1) cells shaded in grey indicate projected values;  
 (2) ASR = age standardised rate, to WHO world population

## (b) Male mortality

Calendar period	Age group			ASR	
	0–4	5–9	10–14	(0–14 years)	Credible interval
<i>Rate (per 100,000 per year)</i>					
1970–74	9.6	9.0	6.2	8.3	
1975–79	6.5	8.1	8.0	7.5	
1980–84	7.2	8.6	4.9	6.9	
1985–89	8.0	6.7	6.5	7.1	
1990–94	5.8	4.8	3.9	4.8	
1995–99	4.6	5.0	4.8	4.8	
2000–04	5.3	4.9	4.4	4.8	(3.3 – 5.6)
2005–09	4.8	4.4	3.9	4.4	(2.7 – 5.4)
2010–14	4.4	4.1	3.6	4.0	(2.2 – 5.2)
<i>Deaths (per year)</i>				<i>Total count</i>	
1970–74	15	14	10	39	
1975–79	9	13	13	35	
1980–84	9	12	8	29	
1985–89	11	9	9	28	
1990–94	9	6	5	20	
1995–99	7	8	7	21	
2000–04	8	7	7	22	(13 – 27)
2005–09	6	6	6	19	(11 – 24)
2010–14	6	6	5	16	(8 – 22)

Notes: (1) cells shaded in grey indicate projected values;

(2) ASR = age standardised rate, to WHO world population

## (c) Female registration

Calendar period	Age group			ASR	
	0–4	5–9	10–14	(0–14 years)	Credible interval
<i>Rate (per 100,000 per year)</i>					
1954–58	10.7	10.0	8.5	9.8	
1959–63	12.2	10.9	9.0	10.7	
1964–68	15.8	8.4	9.0	11.1	
1969–73	15.9	8.4	10.5	11.7	
1974–78	13.9	11.2	11.0	12.0	
1979–83	18.2	9.8	12.2	13.4	
1984–88	20.1	11.2	12.4	14.6	
1989–93	19.4	12.3	12.3	14.7	
1994–98	20.9	9.4	14.3	14.9	
1999–03	21.8	15.2	14.5	17.2	(12.6 – 20.4)
2004–08	22.9	16.1	15.3	18.1	(12.6 – 22.8)
2009–13	24.3	17.0	16.2	19.2	(12.4 – 25.7)
<i>Cases (per year)</i>				<i>Total count</i>	
1954–58	14	12	8	33	
1959–63	18	14	11	42	
1964–68	24	12	12	48	
1969–73	23	13	16	52	
1974–78	20	17	17	54	
1979–83	23	14	18	55	
1984–88	25	14	17	56	
1989–93	27	15	16	58	
1994–98	30	13	19	62	
1999–03	30	22	21	73	(48 – 94)
2004–08	29	22	22	74	(47 – 99)
2009–13	30	22	23	75	(45 – 106)

Notes: (1) cells shaded in grey indicate projected values;

(2) ASR = age standardised rate, to WHO world population

## (d) Female mortality

Calendar period	Age group			ASR	
	0–4	5–9	10–14	(0–14 years)	Credible interval
<i>Rate (per 100,000 per year)</i>					
1970–74	8.6	6.2	5.2	6.7	
1975–79	6.3	6.4	5.9	6.2	
1980–84	4.7	3.7	4.5	4.3	
1985–89	6.0	4.9	4.7	5.2	
1990–94	4.6	3.6	3.0	3.7	
1995–99	3.0	3.4	4.4	3.6	
2000–04	4.0	3.5	3.3	3.6	(2.3 – 4.1)
2005–09	3.7	3.2	3.0	3.3	(1.9 – 3.9)
2010–14	3.3	2.9	2.7	3.0	(1.5 – 3.7)
<i>Deaths (per year)</i>				<i>Total count</i>	
1970–74	13	9	8	30	
1975–79	9	10	9	28	
1980–84	6	5	7	18	
1985–89	8	6	6	20	
1990–94	6	5	4	15	
1995–99	4	5	6	15	
2000–04	5	5	5	15	(9 – 19)
2005–09	5	4	4	13	(7 – 17)
2010–14	4	4	4	12	(5 – 15)

Notes: (1) cells shaded in grey indicate projected values;

(2) ASR = age standardised rate, to WHO world population

