

HALVING DEATHS FROM CERVICAL CANCER

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The decline in cervical cancer incidence and mortality in NSW women is a real public health success story, and an example of a population level intervention producing measurable improvement in population health.

Cervical cancer is a significant gynaecological cancer in women, and is preventable by regular screening using the Papanicolaou technique. Screening identifies pre-cancerous lesions that convey a risk of invasive cancer. These lesions can be removed which reduces the population incidence of cervical cancer (primary prevention). Screening can also detect early asymptomatic invasive cancer and thus produce lower case fatality and improved survival through earlier diagnosis (secondary prevention). Decline in cervical cancer mortality in populations over time is a consequence of declines in both incidence and case fatality.

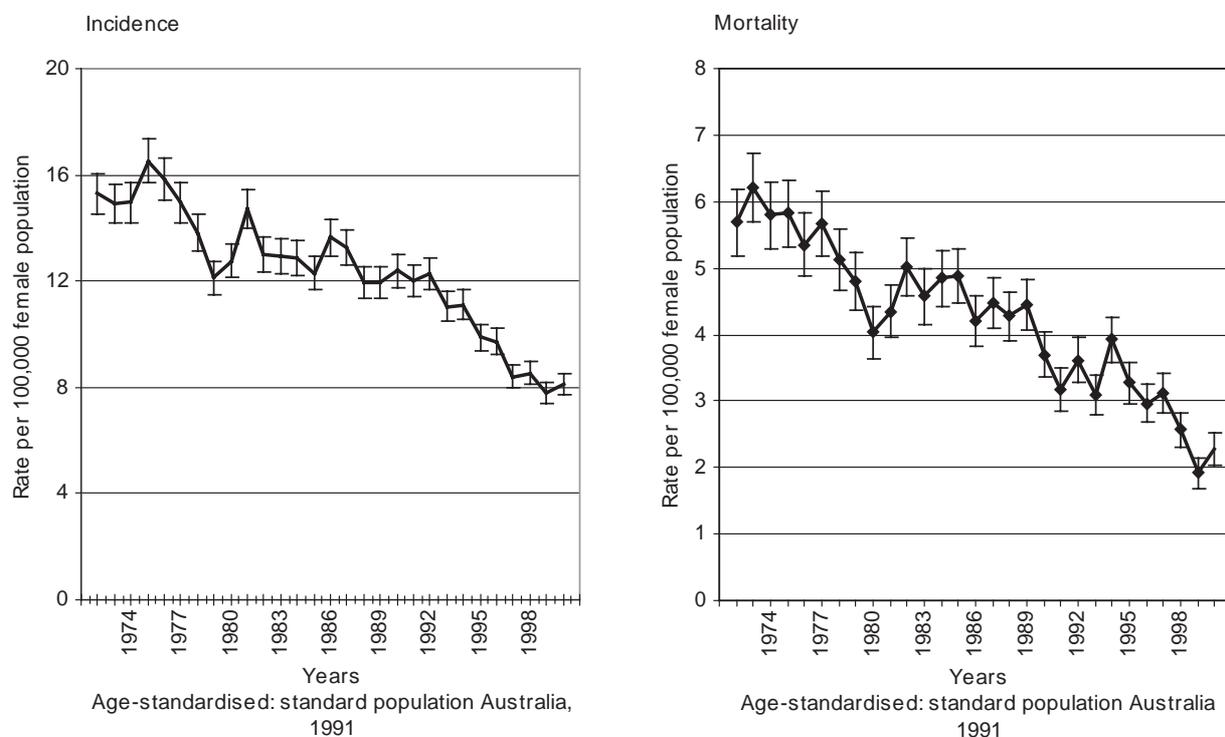
Analysis of published case-control and cohort studies have documented the effectiveness of regular cervical screening in preventing cancer of the cervix. Evidence for the effectiveness of screening in populations relies on time trends in cervical cancer incidence and/or mortality in relation to the introduction and intensity of cervical screening; and on the comparison of trends in cervical cancer incidence or mortality between populations with different dates of introduction or intensities of cervical screening. This evidence is available from Scandinavian countries, and is also evident in women in NSW.

Cervical cancer incidence and mortality¹ has been reduced in NSW women in the last 30 years, particularly since the early-mid 1990s (Figures 1 and 2). This follows the introduction of cervical cancer screening including the NSW Cervical Screening Program (CSP) and the development of the Pap Test Register (PTR).

There are relatively high levels of screening in NSW women. Based on PTR data, the biennial (two year)

FIGURE 1

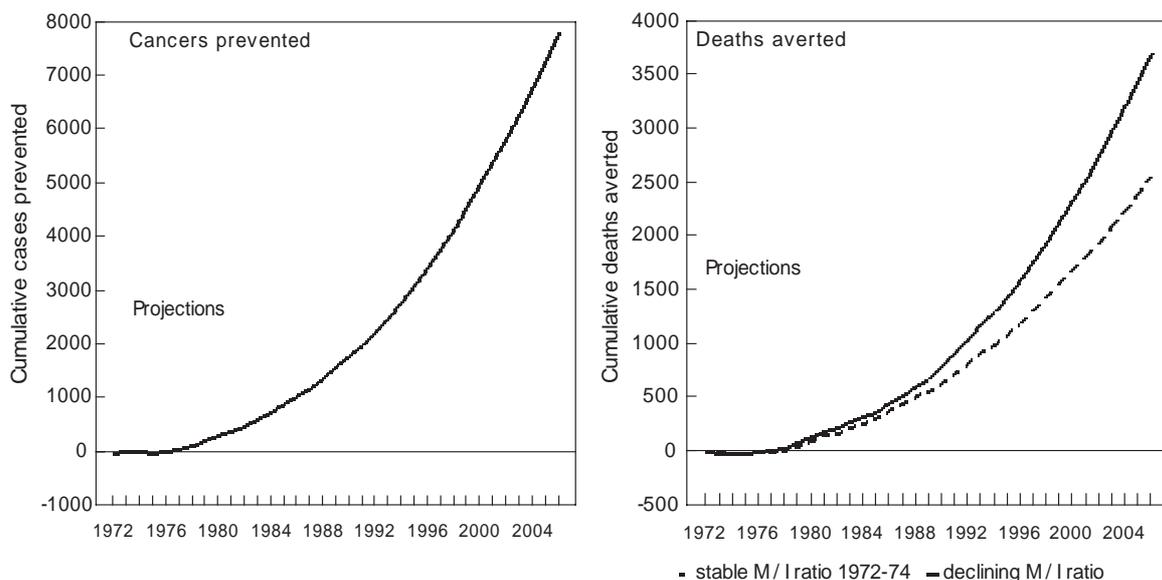
INCIDENCE AND MORTALITY RATES (WITH 95 PER CENT CONFIDENCE INTERVALS), CERVICAL CANCER, NSW, 1972–2000



Source: From data supplied by NSW Cervical Cancer Registry and NSW Cancer Council.

FIGURE 2

CUMULATED CERVICAL CANCERS PREVENTED AND DEATHS AVERTED FROM SCREENING SINCE 1972, NSW³



Note: The figures for cumulated cervical cancers prevented and deaths averted assume constant period trends from 1972 in the absence of screening.

Source: Reference 3

screening rate is 62 per cent, the triennial (three year) screening rate is 75 per cent and the quinquennial (five year) screening rate is 93 per cent. Because most cervical screening is directed towards detecting pre-cancerous abnormalities, almost any screening interval is of some effectiveness. Research indicates that annual and two-yearly screening are 93 per cent effective in prevention of cervical cancer, three-year screening 91 per cent effective, five-year screening 84 per cent effective and 10-year screening 64 per cent effective².

The effect of cervical screening in populations can be assessed by comparing actual declines in rates to scenarios where period trends remain stable. Calculations for NSW indicate that over the period 1972-2000 there were around 5,000 cases prevented and 2,000 deaths averted from cervical cancer (Figures 1 and 2).³ Deaths averted in the presence of unchanging survival measured by case fatality [stable Mortality/Incidence (M/I) ratios] indicate the deaths are averted from primary prevention alone, that is, by Pap test detection and treatment of precursors of cervical cancer. Deaths averted in the presence of improving survival measured by declining case fatality [declining Mortality/Incidence (M/I) ratios] indicate deaths averted by all aspects of detection and treatment, including primary prevention, secondary prevention (earlier diagnosis of cancer) and improvements in treatment efficacy.

Information on Pap screening and cervical cancer can be obtained from:

NSW Cervical Screening Program

www.csp.nsw.gov.au;

NSW Pap Test Register

www.cancercouncil.com.au/cnrcinfo/research/papTestReg/papTestf.htm;

The NSW Cancer Council

www.cancercouncil.com.au/building/index2.htm.

REFERENCES

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2. International Agency for Research on Cancer [IARC]. Screening for squamous cervical cancer: Duration of low risk after negative results of cervical cytology and its implications for screening policies. *BMJ* 1986; 293:659-64.
3. Taylor R, Morrell S, Mamoon H, Wain G. The effect of screening on cervical cancer incidence and mortality in New South Wales implied by influences of period of diagnosis and birth cohort. *J Epidemiol Community Health* 2001;55:782-8. ☒