20. CANCER OF CERVIX UTERI

20.1. SUMMARY

Cancer of the uterus is classified by ICD-10 into three sites—cancer of the cervix uteri (cervical cancer; discussed in this chapter), cancer of the corpus uteri (uterine cancer; see Chapter 19) and cancer of the uterus, part unspecified. "Part unspecified" cases make up less than 5% of all cancers of the uterus and are not considered in this atlas.

Cancer of the cervix uteri was the eighth most common cancer for women in Ireland, accounting for 2.8% of all malignant neoplasms, excluding non-melanoma skin cancer, in women (Table 20.1). The average number of new cases diagnosed each year was 289. During 1995-2007, there was an increase of 5% in the number of new cases diagnosed per year in RoI, while the numbers remained fairly constant in NI.
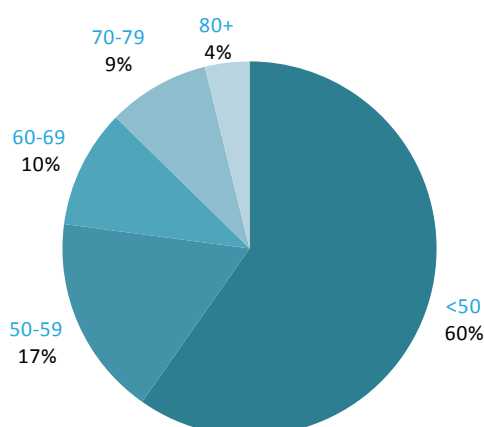
The risk of developing cervical cancer up to the age of 74 was 1 in 124 and was slightly higher in RoI than in NI. At the end of 2008, 2,484 women aged under 65 and 418 aged 65 and over were alive up to 15 years after their diagnosis.

Table 20.1 Summary information for cervical cancer in Ireland, 1995-2007

	Ireland	RoI	NI
% of all new cancer cases	2.0%	2.1%	1.8%
% of all new cancer cases excluding non-melanoma skin cancer	2.8%	3.0%	2.4%
average number of new cases per year	289	205	84
cumulative % risk to age 74	0.8%	0.8%	0.7%
15-year prevalence (1994-2008)	2902	1975	927

Cervical cancer was predominantly a disease of younger women (Figure 20.1). Almost 60% of new cases presented in those aged less than 50, and over three-quarters under 60. The pattern was similar in RoI and NI.
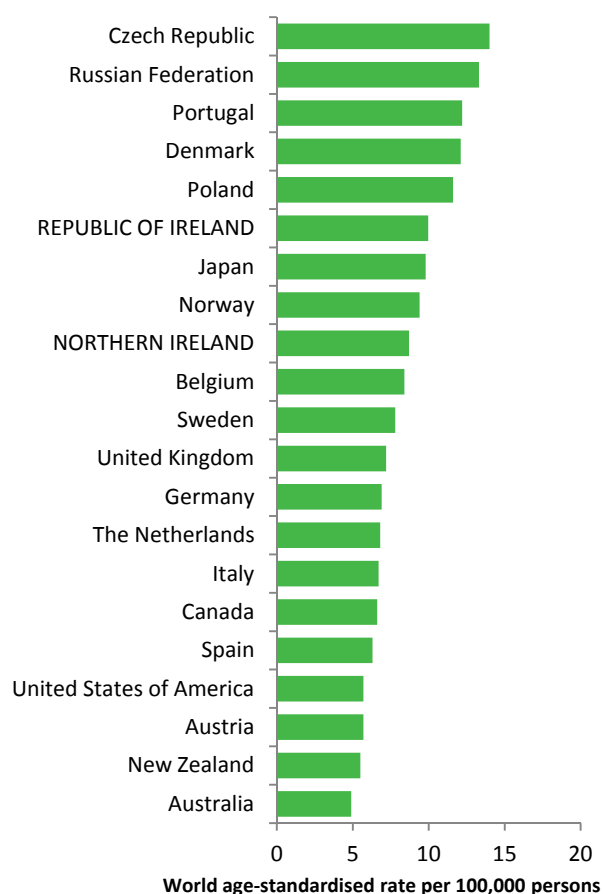
Figure 20.1 Age distribution of cases of cervical cancer in Ireland, 1995-2007

20.2. INTERNATIONAL VARIATIONS IN INCIDENCE

Cervical cancer incidence rates in 2008 were highest in the Czech Republic and Russia and lowest in Australia and New Zealand (Figure 20.2). Rates of the disease in RoI were slightly higher than the median, while in NI the rates was close to the median. Variation between countries in the percentage of cases assigned to "uterus, part unspecified" (which are not included in the data below) may account for some of the international variation.

Figure 20.2: Estimated incidence rate per 100,000 in 2008 for selected developed countries compared to 2005-2007 incidence rate for RoI and NI: cervical cancer

Source: GLOBOCAN 2008 (Ferlay et al., 2008) (excluding RoI and NI data, which is derived from Cancer Registry data for 2005-2007)

20.3. RISK FACTORS

Table 20.2 Risk factors for cervical cancer, by direction of association and strength of evidence

	Increases risk	Decreases risk
Convincing or probable	Infection with "high-risk" types of genital human papilloma viruses (HPV)[1,2]	
	Infection with human immunodeficiency virus, type 1 (HIV-1)[2]	
	Tobacco smoking[3]	
	Oral contraceptives[2,4]	
	High parity[5]	
	Low socio-economic status[6]	

[1] "high-risk" HPV types include 16, 18, 31, 33, 35, 39, 45, 51, 56, 58, 59, 66; [2] International Agency for Research on Cancer, 2011b; [3] Secretan et al., 2009; [4] combined oestrogen-progestogen formulations; [5] Castellsagué and Muñoz, 2003; [6] Faggiano et al., 1997

Many strains of human papilloma viruses (HPV) infect the genital squamous epithelia. Some strains (known as "low-risk") cause genital warts while other strains (known as "high-risk") cause cervical cancer. The association between cervical cancer and these high-risk types of HPV infection is so strong that HPV is considered to be a necessary cause of the disease (Bosch et al., 2002). Infection with high-risk HPV is very common, and most women who have been sexually active will be infected at some time during their lifetime (Bosch et al., 2008). In most women infection causes no symptoms and clears naturally within a few months. However, some women become re-infected and the virus persists; susceptibility to persistent infections is thought to increase risk of developing cervical lesions. The factor most consistently associated with risk of genital HPV infection is number of sexual partners (Winer and Koutsky, 2004).
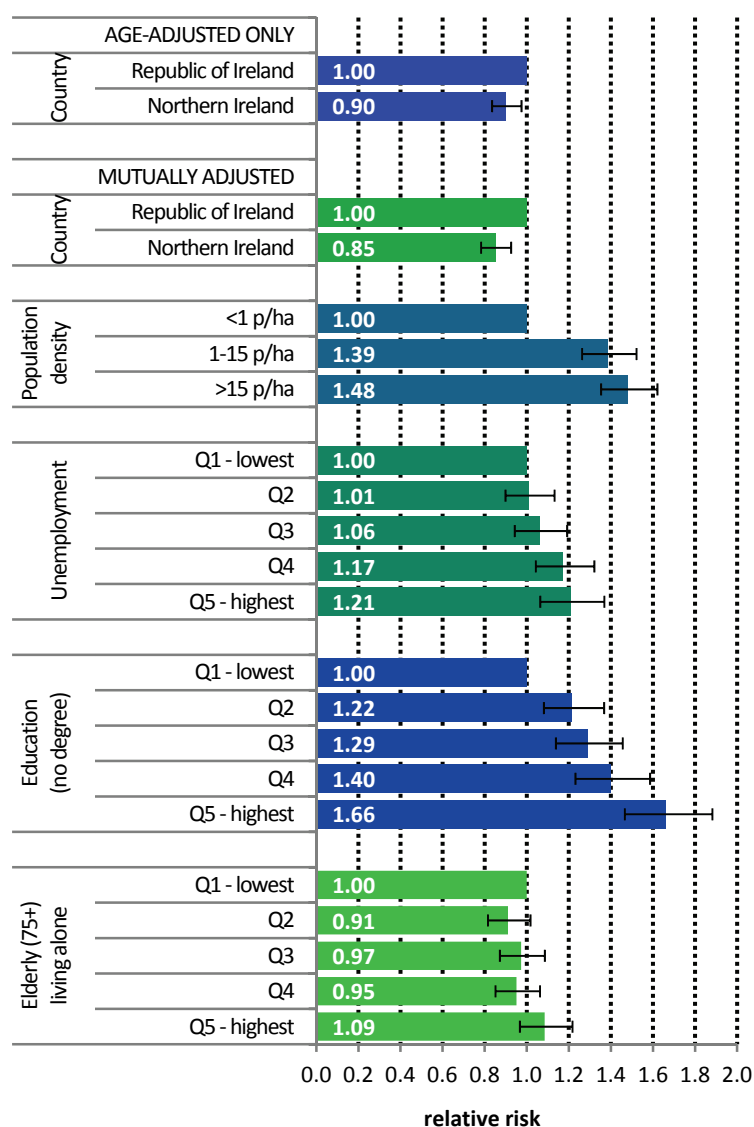
Infection with human immunodeficiency virus, type 1 (HIV-1) is also recognised to cause cervical cancer.

As regards other risk factors, there is a causal relationship between smoking and squamous cell cancer of the cervix, which persists after adjustment for HPV infection. In the relatively few studies of adenocarcinoma and adeno-squamous cell carcinoma, no relationship with smoking has been found (International Agency for Research on Cancer, 2004b). Cervical cancer risk is raised in women who have used combined oestrogen-progestogen oral contraceptives for at least five years. Risk falls with increasing time since last use, and after 10 years returns to background levels. Risk also increases with the number of children that a woman has had (parity).

Women of lower socio-economic status have raised cervical cancer risk. While partly a function of variations in exposure to risk factors (de Sanjosé et al., 1997), this also reflects social class differences in access to cervical smear tests or participation in organised screening programmes (Segnan, 1997).

20.4. SMALL GEOGRAPHIC AREA CHARACTERISTICS AND CANCER RISK

Figure 20.3 Adjusted relative risks (with 95% confidence intervals) of cancer of the cervix uteri by socio-economic characteristics of geographic area of residence

The risk of cervical cancer was 10% lower in NI than in RoI (Figure 20.3). This difference increased to 15% when population density and area-based socio-economic factors were taken into account.

Risk of cervical cancer increased with increasing population density. Those resident in areas with 1-15 p/ha had a 39% greater risk of cervical cancer than those resident in the least densely populated areas, while those resident in the areas of highest density had a 48% greater risk.

Electoral wards and districts with the highest levels of unemployment had higher rates of cervical cancer than those with the lowest levels. The relative risk between the lowest and highest quintiles was 1.21 (95%CI=1.06-1.37).

An even stronger association existed between lower educational attainment and cervical cancer. Women in areas with the lowest education levels had a 66% greater risk of cervical cancer than those in areas with the highest levels of educational attainment.

There was no association between cervical cancer and the proportion of elderly people living alone in an area.

20.5. MAPPING AND GEOGRAPHICAL VARIATION

The areas of highest relative risk of cervical cancer were concentrated around Dublin, southwards along the east coast to Wexford, and westwards into the midlands (Map 20.1).

Areas around Cork, Waterford, Tipperary South, Belfast, Sligo and west Galway also had higher relative risk. Lower relative risk was observed in the south-west, Mayo and most of Northern Ireland and Donegal.

Map 20.1 Cancer of the cervix uteri, smoothed relative risks

Belfast

N

Relative risk: <0.50 ▨ >2.00

Dublin