

Cervical Cancer: 10 years of the HPV Vaccine

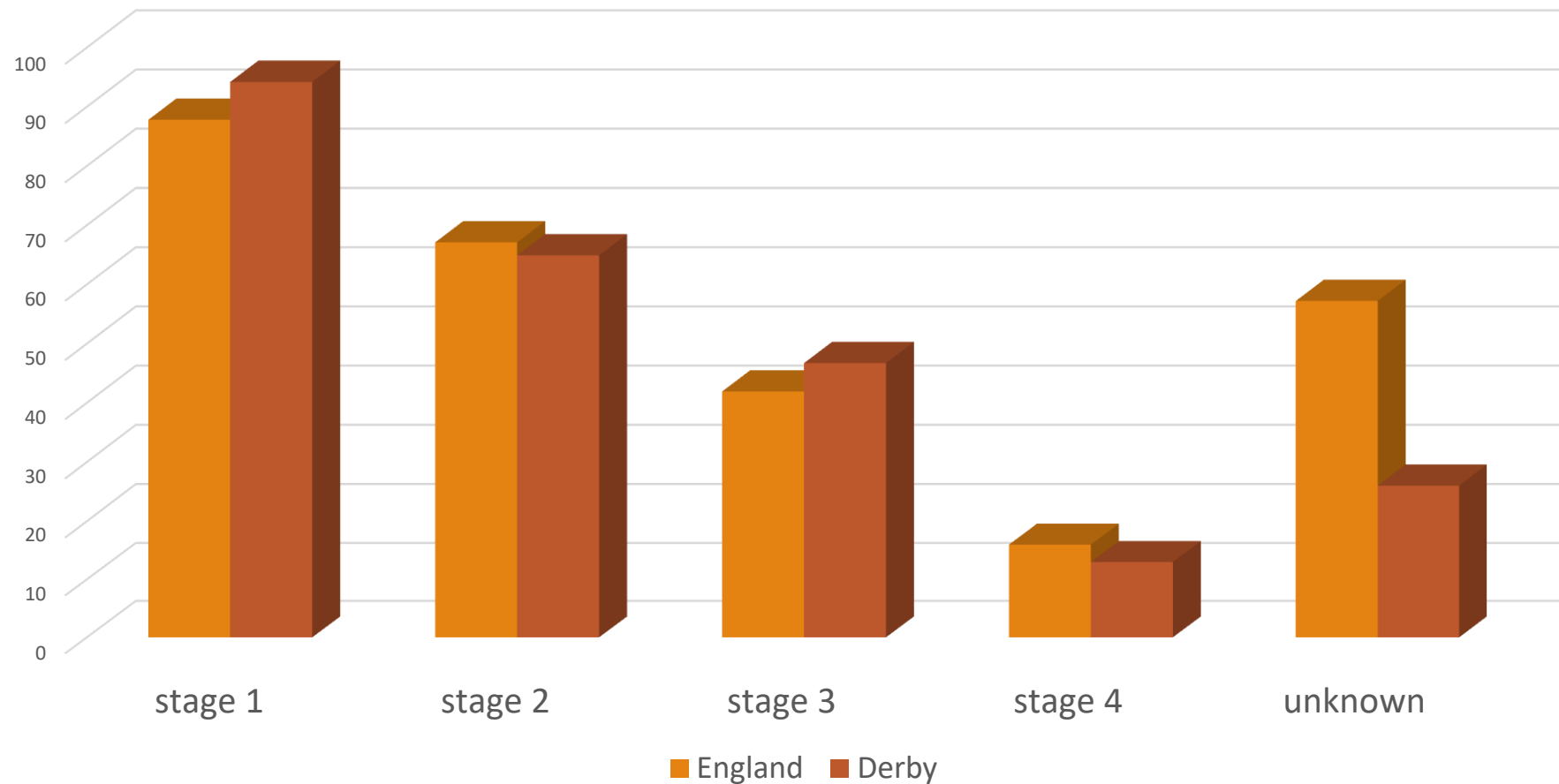
MISS KATE SMALLWOOD

ST6 IN O&G

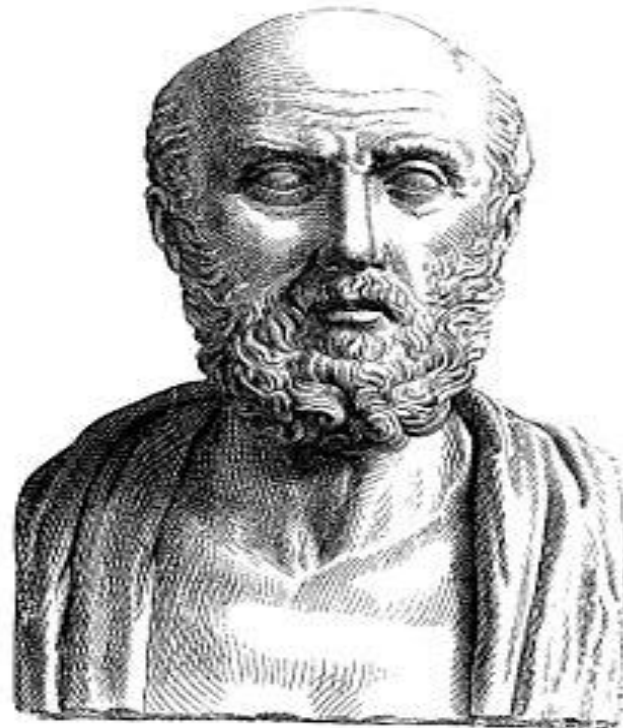
UK Stats

- 14th most common cancer in women
- 3200 new cases per year
- Incidence 9.7 per 100,000
- Incidence highest in 25-29 year olds
- 850 deaths/yr (2015-17)
- More common in white women and in those from more deprived areas
- 99.8% are preventable - HPV 16 and 18 cause 90%
- Since 1990 rates have decreased by 24%
- Increase over the last decade of 4%

5 Year Survival by Stage

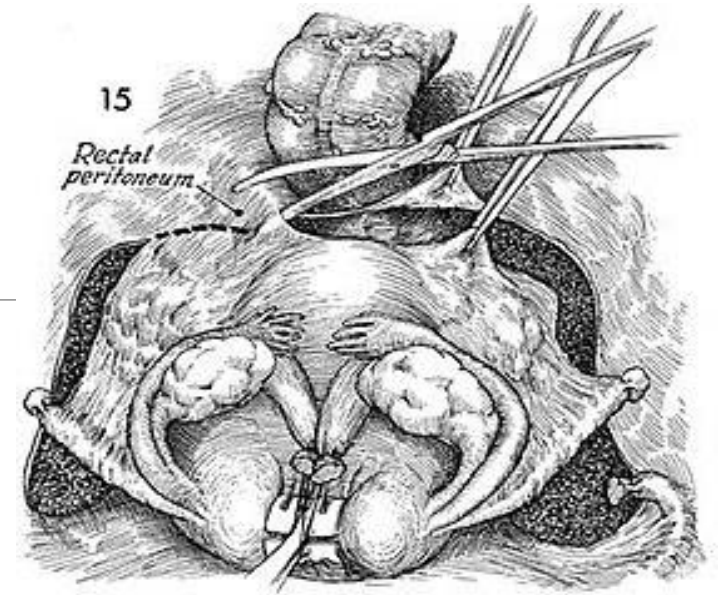


History



History

- 400 BC First description of cervical cancer by Hippocrates
- 1834 Cervical Cancer identified as a sexually transmitted disease
- 1842 Rigoni-Stern , Italian epidemiologist noticed that cervical cancer only occurred in married women and was rare in celibate nuns
- 1898 Austrian gynaecologist Ernst Wertheim describes the operation of radical hysterectomy
- 1925 Hans Hinselmann first describes the use of the colposcope
- 1928 Greek cytopathologist Georgios Papanikolaou develops cervical cytology smear test
- 1943 Pap test first generalised as a procedure for detecting abnormal cells



History

- 1985 German Virologists Harald Zur Hausen and Lutz Gissmann demonstrate the presence of HPV DNA in cervical cancer cells
- 1989 Loop electrosurgical excision first described
- 1999 DNA test approved to detect HPV
- 2006 FDA approval of Gardasil, a vaccination that prevents HPV 16 and 18 in girls 9-26
- 2008 Harald Zur Hausen wins Nobel Prize for work on HPV
- 2008 HPV Vaccination programme commences – vaccination of 12-13 year old girls
- 2019 HPV vaccination programme extended to boys

10 years on.....

What **difference** has the HPV vaccine made so far?



10.5 million

doses have been given
in the UK since 2008



HPV vaccine reduced:

- HPV 16/18 infection by **86%** in young women
- Pre-cancerous cervical disease in women by **71%**
(Scotland data)
- Diagnosis of genital warts from 2009-2017 by **90%** in 15-17yr old girls & **70%** in 15-17yr old boys

10 years on.....

- >80% of women aged 15-24 have received the vaccine
- Those who have had the vaccine are now at cervical screening age (first cohort born 1995/6)
- More data is required to determine the effect on incidence of cervical cancer
- Vaccination programme not currently global
- 2019 – vaccination programme extended to 12 year old boys

Prevalence on cervical disease at age 20 after immunisation with bivalent HPV vaccine at age 12-13 in Scotland: retrospective population study.

- Scottish study by Palmer et al April 2019
- 138,692 women born between 1988 and 1996 who had smear test results at age 20
- Looked at effects of vaccination on cytology results and histological diagnosis
- Girls vaccinated at 12-13 then a catch up programme up to age 18
- Uptake of the initial vaccination programme exceeded 85%

Palmer et al April 2019

- In vaccinated women:
 - 89% reduction in CIN 3 or worse
 - 88% reduction in CIN 2 or worse
 - 79% reduction in CIN 1
- Vaccine effectiveness was better the younger the woman had the vaccine (86% at 12/13 vs 51% at 17)
- Evidence of herd protection against high grade cervical disease found in unvaccinated girls in 1995/6 cohort
- Study projects that the incidence of cervical cancer will be greatly reduced

Study Conclusion

‘The global scale-up of HPV vaccination and HPV-based screening—including self-sampling—has potential to make cervical cancer a rare disease in the decades to come’

Screening Crisis?

- April 2019 – Joint Position statement from RCOG, Jo's Cervical Cancer Trust, BSCCP and FSRH:
 - Uptake at a 20-year low
 - Govt target for uptake is 80%
 - Highest in East Midlands (74.5)
 - Lowest in London (64.7%)
 - 73% fall in samples taken in community and sexual health services despite 12.3% of abnormal smears identified from these locations compared to 5.2% from GP practices
 - Problems with commissioning
 - HPV Self test pilot UCLH hopes to make screening more acceptable to women
 - Call for Strategies to increase uptake

Worldwide Burden 2018 – there's still a long way to go!

4th most common cancer in women (breast,colorectal,lung)

570,000 new cases and 311,000 deaths in 2018

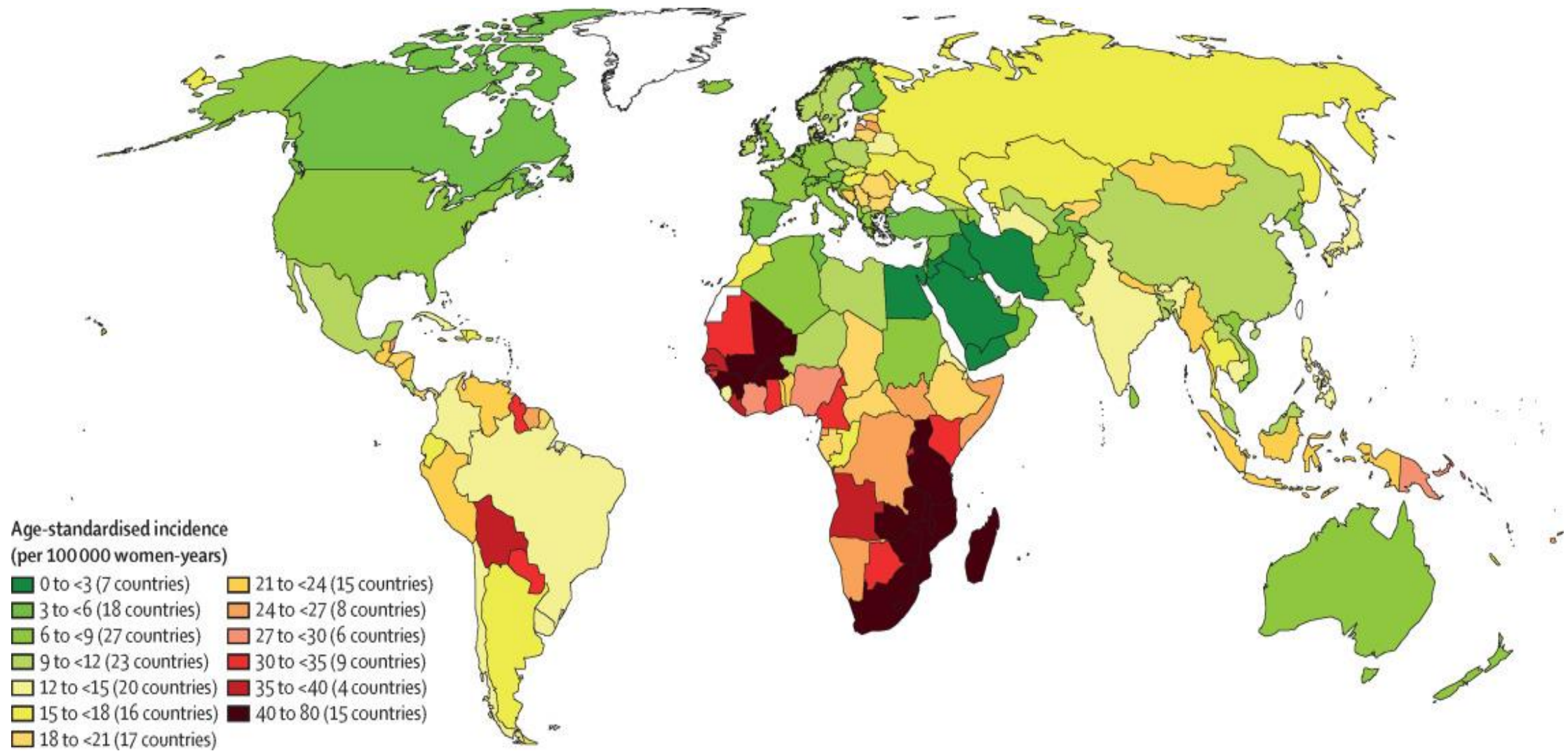
Compared to 530,000 in 2008 – 85% of cases in less developed countries

The estimated age-standardised incidence of cervical cancer was 13.1 per 100 000 women globally

Globally, the average age at diagnosis of cervical cancer is 53

Lowest incidence in Western Asia (4.1 per 100,000)

Highest incidence in Southern Africa (43.1 per 100,000)



WHO Ambition

‘to reduce the ASIR of cervical cancer to less than 4 per 100 000 women worldwide by vaccinating 90% of all girls by age 15 years, screening 70% of women twice in the age range of 35–45 years, and treating at least 90% of all precancerous lesions detected during screening.’

References
