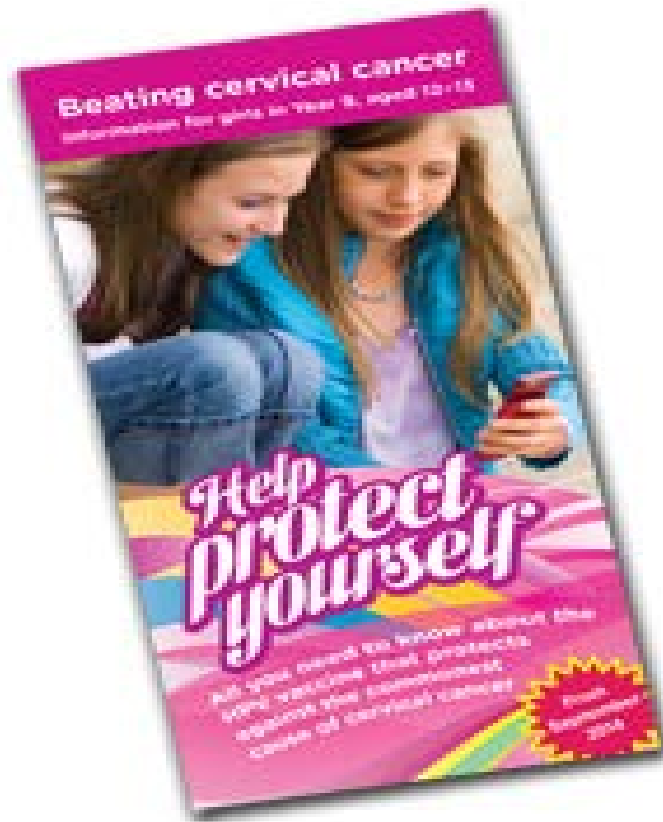


# The HPV Vaccination Programme

## Early intervention in cancer prevention

### Northern Ireland



# Immunisations

- Very cost effective intervention
- Give vaccine before exposure to disease
- UK has life course approach to vaccines
- Pre-school- Men B, MMR, DTaP/IPV/Hib/HBV
- Schools based- DTP, Men ACWY, MMR, HPV
- Adults- pertussis for pregnant women, flu
- Older people- Flu, shingles, pneumococcal
- Hepatitis B and HPV vaccines can prevent cancers

# Cervical cancer

- Around 3000 cases in UK, of which 90 diagnosed in NI each year
- 900 deaths a year in UK, about 22 in NI
- 13<sup>th</sup> most common cancer in UK
- Most common in 30's and 40's and uncommon under age 25 years.
- HPV virus is a major cause of cervical cancer
- HPV vaccine offers early intervention 10-30 years before the development of cancer

# Human Papillomavirus (HPV)

Of the +100 different types of HPVs

- Over 40 types affect genital area.
- High risk types (16,18) cause cancer.
- Low risk types (6,11) cause genital warts.



HPV16: } Together account for over 70% all cervical cancers –  
HPV18: } remaining 30% due to 13 other HPVs.  
Also cancer of the anus, penis, mouth & throat, vagina & vulva

HPV :6 } 90% of cases of genital warts are due to HPV 6 and 11.  
HPV :11 }

# HPV associated disease

- Up to 8 out of 10 people will unknowingly be infected with the virus at some point in their lives
- Spread through skin to skin and sexual contact
- Most infections are asymptomatic and self-limiting.
- Genital infection by HPV is associated with anogenital cancers and genital warts in both men and women.
- Persistent infection by high-risk HPV types is detectable in more than 99% of cervical cancers;
- HPV 16 is responsible for 60% and HPV 18 being responsible for 15% of all cervical cancer types in Europe.

# HPV Prevalence England 2007

- Low HPV prevalence in girls aged 14 years.
- HPV infection rises sharply from 14 years onwards until the early 20s.
- Cervical screening study found evidence of high-risk HPV infection in 40% of women aged 20 to 24 years of age, with prevalence declining with increasing age.
- Prevalence of any HPV type, especially 16 and 18 was higher in women with abnormal cytology.



# HPV VACCINE



# HPV Vaccine

- There are currently 3 different HPV vaccine products.
- The bivalent vaccine, Cevarix
  - HPV types 16 and 18
- The quadrivalent vaccine, Gardasil
  - HPV types 6,11,16 and 18
- The nonavalent Gardasil 9 (not used in the NHS but licensed in the UK)
  - HPV types 6, 11, 16, 18,31,33,45,52,58
- All vaccines > 99% effective preventing pre-cancerous lesions associated with types 16 and 18.
- Gardasil is also 99% effective at preventing genital warts associated with vaccine types in young women.

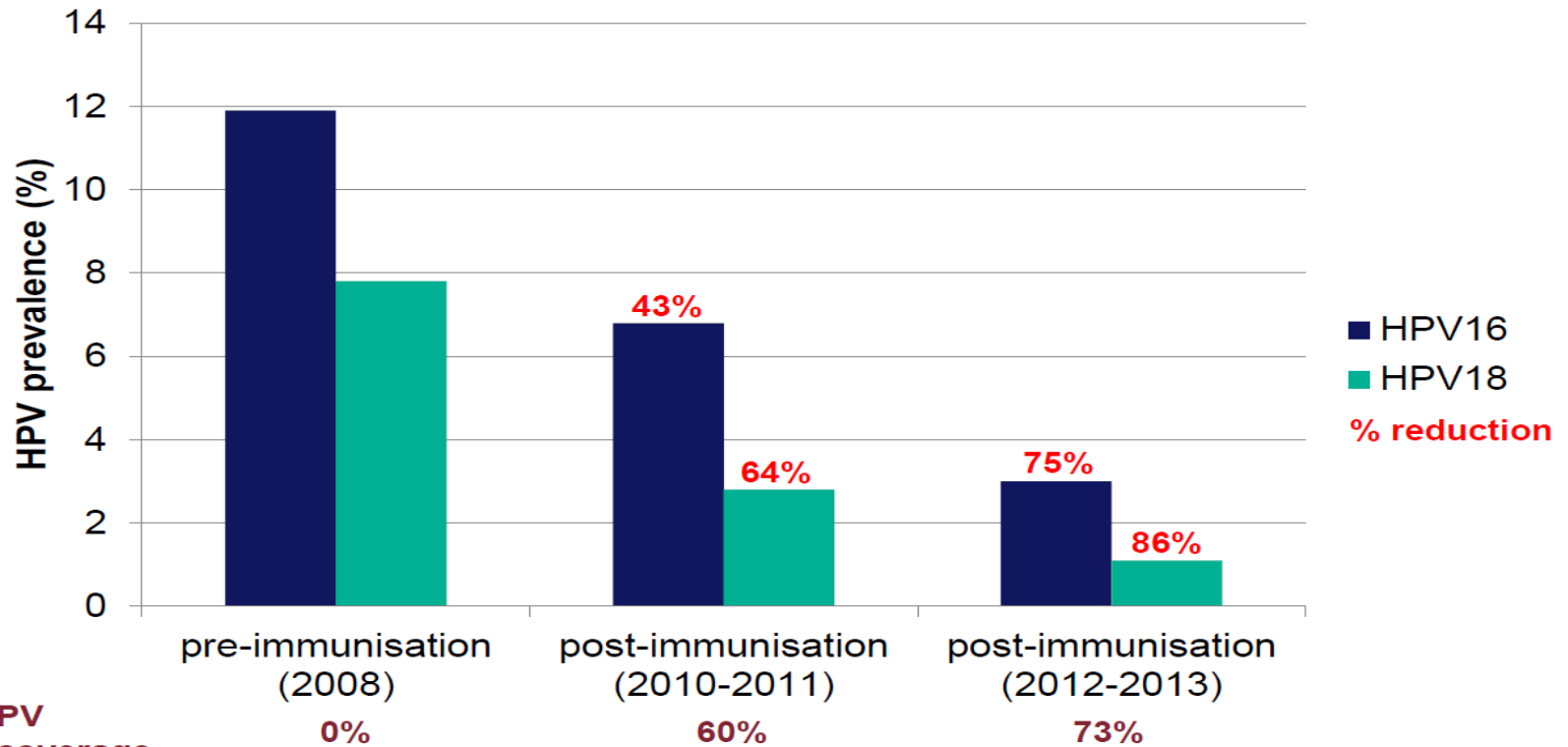


# UK HPV Immunisation Programme

- The national immunisation programme began in 2008 using the Cervarix vaccine.
- Offered routinely to year 9 and 10 (12-14 year olds) with catch-up to aged 18 yrs initially
- In 2012, the programme changed to use the Gardasil vaccine.
- In September 2014 the programme changed, from a three dose to a two dose schedule, **provided vaccination is initiated prior to 15 years of age.**

# Impact of the vaccine programme so far

Individual type-specific prevalence  
among 16-18 year old females



Estimated HPV  
vaccination coverage

# Reduction of low- and high-grade cervical abnormalities associated with high uptake of the HPV bivalent vaccine in Scotland

There was a significant reduction in diagnoses of :  
Cervical intraepithelial neoplasia 1 (CIN 1; RR 0.71, 95% CI 0.58 to 0.87;  $P=0.0008$ ),  
CIN 2 (RR 0.5, 95% CI 0.4 to 0.63;  $P<0.0001$ ) and  
CIN 3 (RR 0.45, 95% CI 0.35 to 0.58;  $P<0.0001$ )  
for women who received three doses of vaccine compared  
with unvaccinated women.

*British Journal of Cancer* 2014 **volume 111**, pages 1824–1830

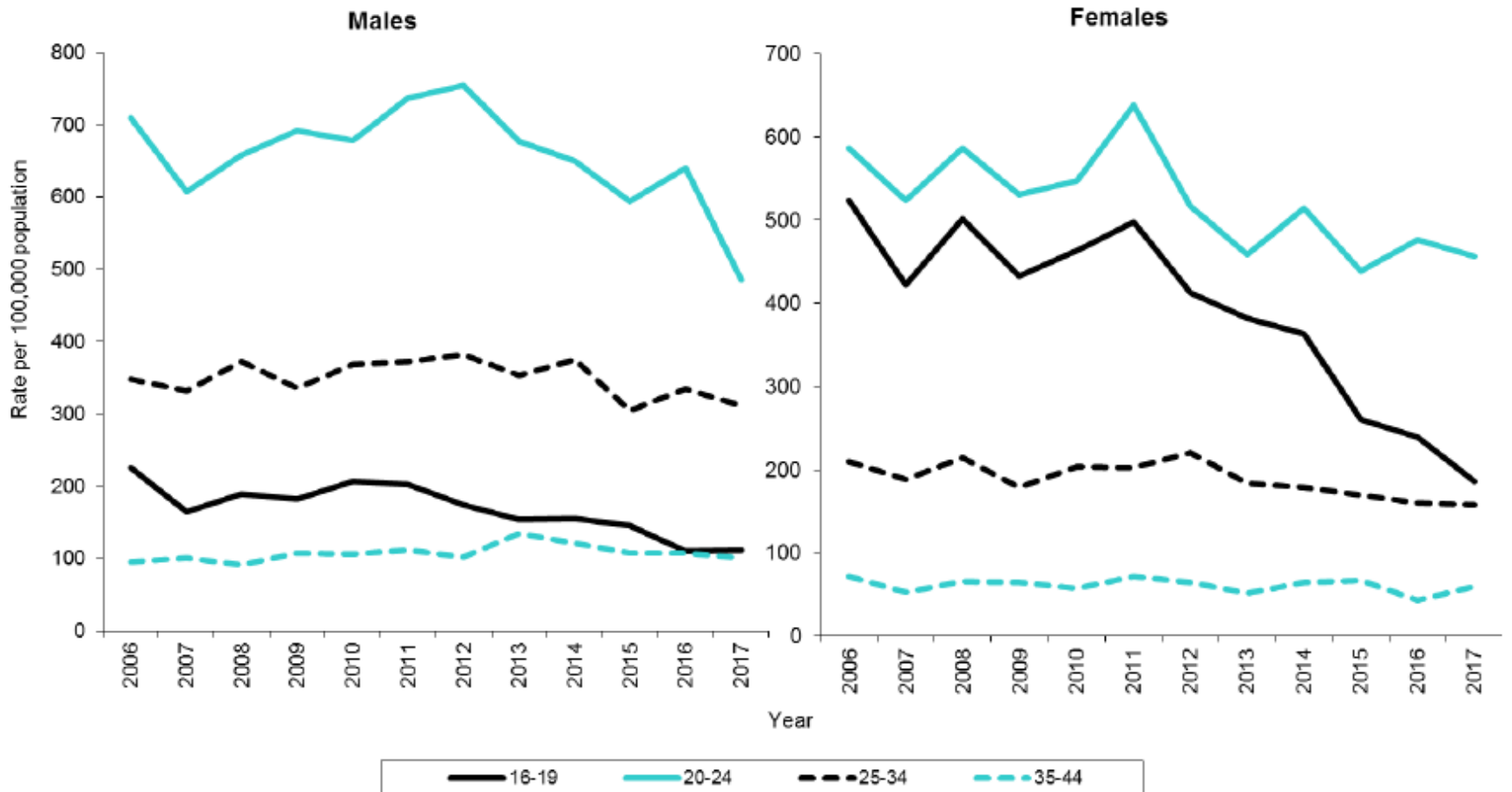
# Potential elimination of cervical cancer and genital warts

International Papilloma society statement:

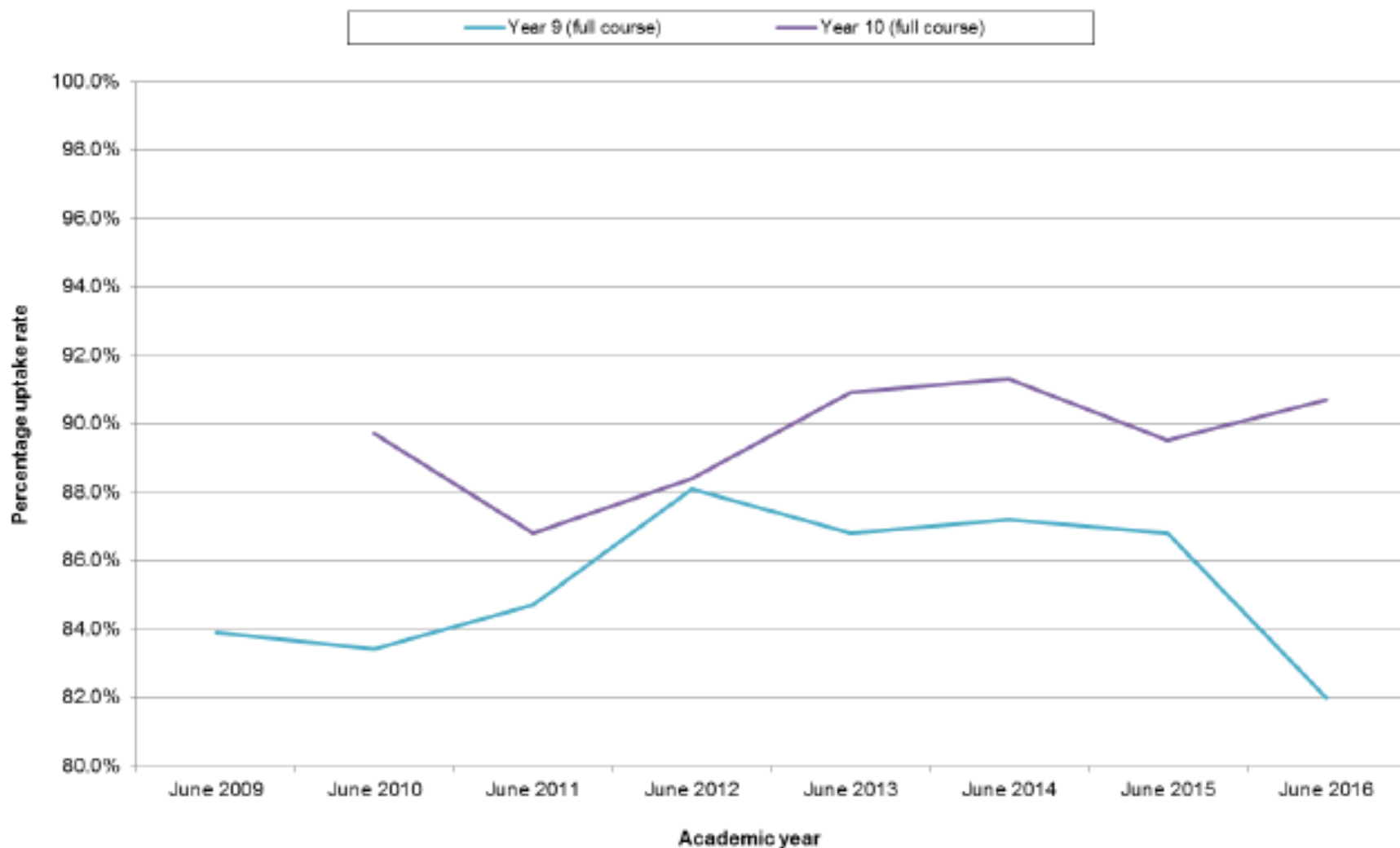
Combining HPV vaccination at high coverage for adolescents and high coverage of cervical screening, with appropriate treatment of all women, can eliminate cervical cancer as a public health problem.

Australia recently predicted they will be the first country to achieve this within the next 40 years.

# Rates of diagnosis of genital warts (first episode) in Northern Ireland, by age and gender, 2006–2017



**HPV vaccination uptake rates in Northern Ireland, year 9 and year 10 girls completing full course, 2009 - 2016**



Source: Northern Ireland Child Health System

# HPV vaccination uptake rates, year 9 and 10 girls completing full course, 2009-18

HPV vaccination uptake rates in Northern Ireland, year 9 and year 10 girls completing full course, 2009-2018

