

Has the Time Come for Chemo- & Immuno-Prevention: Nixing the Nabobs of Negativity

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National Costs of Cancer Care

- 2010: \$124.57 billion
- 2020: projected \$157.77 billion
- This projected increase in cost of care is related to population changes alone
- Assuming costs of care that increase annually by 2% would push 2020 spending to \$173 billion, or a 39% increase from 2010
- Source: Projections of the Cost of Cancer Care in the United States, 2010-2020



<https://www.canceradvocacy.org/wp-content/uploads/2018/06/CPAT2018-07-State-of-Cancer-Care.pdf>

Cost-effectiveness evaluation of sustaining a vaccine

Case study: United States – polio¹

KEY FINDINGS:

A retrospective cost-effectiveness analysis for polio vaccine. Key findings included the following.

In retrospect, the U.S. polio vaccination programme is highly cost-effective. In the period 1955-2015, the U.S. polio vaccination programme:

- prevented over 160 000 deaths;
- averted about 1.1 million cases of paralytic polio.

Due to treatment cost savings, the net economic benefit was positive. If the time horizon is extended to 2099, polio vaccination is highly cost-effective.

Results

Health impact 1955-2015

Polio cases prevented	1.1 million
Deaths averted	160 000

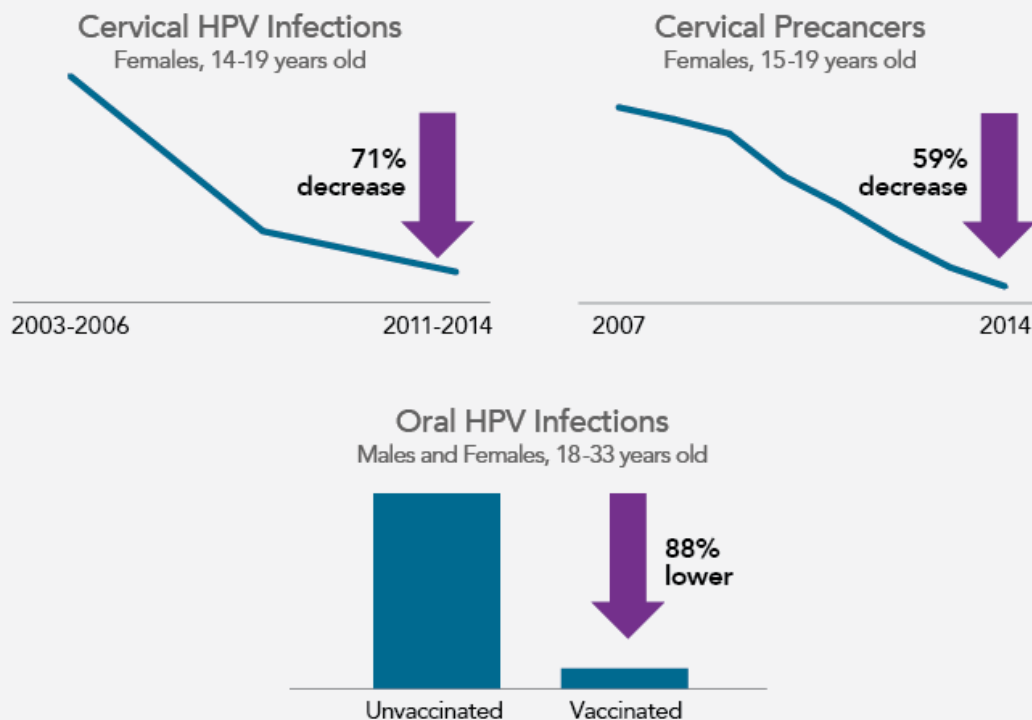
Economic impact 1955-2015

Discounted cost of vaccine (US\$ 2002)	US\$ 36.4 billion
Treatment costs saved (US\$ 2002)	US\$ 215 billion
Net costs saved (US\$ 2002)	US\$ 178 billion

Cost and effectiveness of the polio immunization programme in the United States 1955-2015

YEAR OF DECISION LAST YEAR IN MODEL	1955 2015	1955 2015	1961 2015	1980 2015	1997 2015
INTERVENTION COMPARATOR PROGRAM	ACTUAL PROGRAMME NO PROGRAMME	IPV INDEFINITELY NO PROGRAMME	OPV INDEFINITELY IPV INDEFINITELY	IPV INDEFINITELY OPV INDEFINITELY	IPV INDEFINITELY OPV INDEFINITELY
CUMULATIVE DISCOUNTED BENEFITS					
COSTS (BILLIONS, US\$ 2002)	-180	-110	-76	3.5	1.9
PARALYTIC CASES (INCLUDING DEATHS) PREVENTED*	480,000	340,000	160,000	200	130
DEATHS PREVENTED*	73,000	52,000	23,000	30	20
CUMULATIVE NET BENEFIT (BILLIONS US\$ 2002)	840	580	290	-3.2	-1.7
*1955 NET PRESENT VALUE					

http://www.euro.who.int/_data/assets/pdf_file/0005/345686/Case-study-US-polio.pdf?ua=1



<https://prescancerpanel.cancer.gov/report/hpvupdate/HPVCancers.html>

Decline in Rates for HPV16/18-Positive Cervical Precancers Since Introduction of the HPV Vaccine

By Jo Cavallo

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Key Points

- Within 8 years since the HPV vaccine was introduced in 2006, there was an overall declining trend in the proportion and estimated number of cervical precancers caused by HPV vaccine types among women aged 18–39.
- Among women who were vaccinated, the proportion of CIN2+ cases that were HPV16/18-positive declined from 55.2% to 33.3%. Among unvaccinated women, the proportion of CIN2+ cases that were HPV16/18-positive declined from 51.0% to 47.3%, and among those with unknown vaccination status, from 53.7% to 45.8%.
- The declining proportion of HPV16/18-positive CIN2+ provides additional evidence of vaccine impact in the United States.

According to the [World Health Organization](#), approximately 70% of cervical cancers worldwide are caused by the human papillomavirus (HPV) types 16 and 18. In 2006, the HPV vaccine was introduced in the United States to prevent HPV-associated morbidity and mortality. A study analyzing data on the prevalence of cervical precancers positive for HPV16/18 since the HPV vaccine was introduced in 2006 has found that among vaccinated women aged 18–39 with cervical intraepithelial neoplasia grades 2–3 or adenocarcinoma in situ (CIN2+), the proportion caused by HPV16/18 decreased by 22% between 2008 and 2014. The declining proportion of HPV16/18-positive CIN2+ provides additional evidence of the impact of the HPV vaccine in the United States. These findings were published by McClung et al in [Cancer Epidemiology, Biomarkers & Prevention](#).

Study Methodology

The researchers analyzed data from more than 10,000 archived specimens collected from women aged 18–39 between 2008 and 2014 as part of the [Centers for Disease Control and Prevention's HPV Vaccine Impact Monitoring](#)

<https://www.ascopost.com/News/59780>