

# Women in developing countries need radiotherapy and vaccines for cervical cancer

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Electron micrograph of a negatively stained human papilloma virus (HPV) which occurs in human warts. Credit: public domain

A first of its kind study is reporting that millions of women in low- and middle-income countries will need life-saving radiotherapy to treat their cervical cancer, despite the growth of essential human papilloma virus (HPV) vaccination prevention programs.

The availability of radiotherapy in these regions would generate millions of productive life years and billions of dollars in [economic benefits](#) for their families and communities.

The study modeled the long-term demand, benefit and cost of implementing a 20-year strategy for radiotherapy to treat [cervical cancer](#) in low- and middle-income countries between 2015 and 2035, alongside a simultaneous vaccination program.

Low-income and middle-income countries include those with a gross national income of less than \$12,000 USD a year.

The research entitled "Scale-up of radiotherapy for cervical cancer in the era of human papillomavirus vaccination in [low-income](#) and [middle-income countries](#): A model-based analysis of need and economic impact," by lead author Dr. Danielle Rodin and senior author Dr. Michael Milosevic, in the Radiation Medicine Program, Princess Margaret Cancer Centre is published in the May 24, 2019 online edition of *The Lancet Oncology*.

In the designated 20-year-time span, the study estimated that 9.4 million women in these countries will require radiotherapy—the gold standard for curing women with more advanced cervical cancer. This would result in a net benefit to the economies of these countries of \$151.5 billion over the same [time period](#) as a direct result of women living longer, more productive lives.

HPV vaccination would result in a 3.9% reduction in cervical cancer incidence over the study period—assuming a best case scenario of vaccinating every 12-year-old girl in the world starting in 2014. By 2072, when the first vaccinated cohort reaches 70 years of age, there would be a 22.9% reduction in incidence, still leaving 41.6 million in need for radiotherapy over that time period.

Almost all cervical cancers are caused by human papillomavirus (HPV), a sexually transmitted infection. There are more than 100 types of HPV, of which more than 40 can cause cervical cancer. Persistent HPV infections can sometimes develop into cervical cancer if not treated.

"These are women in their prime who are working, caring for children, and contributing to their communities. We have made huge progress in tackling other infectious disease and in reducing maternal mortality, so that women are now living long enough to develop diseases such as cancer and heart disease," says Dr. Danielle Rodin, Clinician-Investigator and Radiation Oncologist, Princess Margaret Cancer Centre.

"Vaccination is hugely important, but we can't neglect the millions of women who are contracting cervical cancer and dying in pain without access to treatment. These are women who have curable cancers—even advanced cervical [cancer](#) can be cured with radiotherapy. The possibility exists to make this treatment universally available."

Provided by University Health Network

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