

Delay in replacing the Pap smear with HPV screening is costing lives

October 4 2018, by Alejandra Castanon



Credit: Iryna Inshyna/Shutterstock.com

It was [established](#) a decade ago that testing for the presence of HPV – the virus that causes cervical cancer – is a better cervical screening test than the Pap smear. Yet in England, the Pap smear is still used, and it's costing lives.

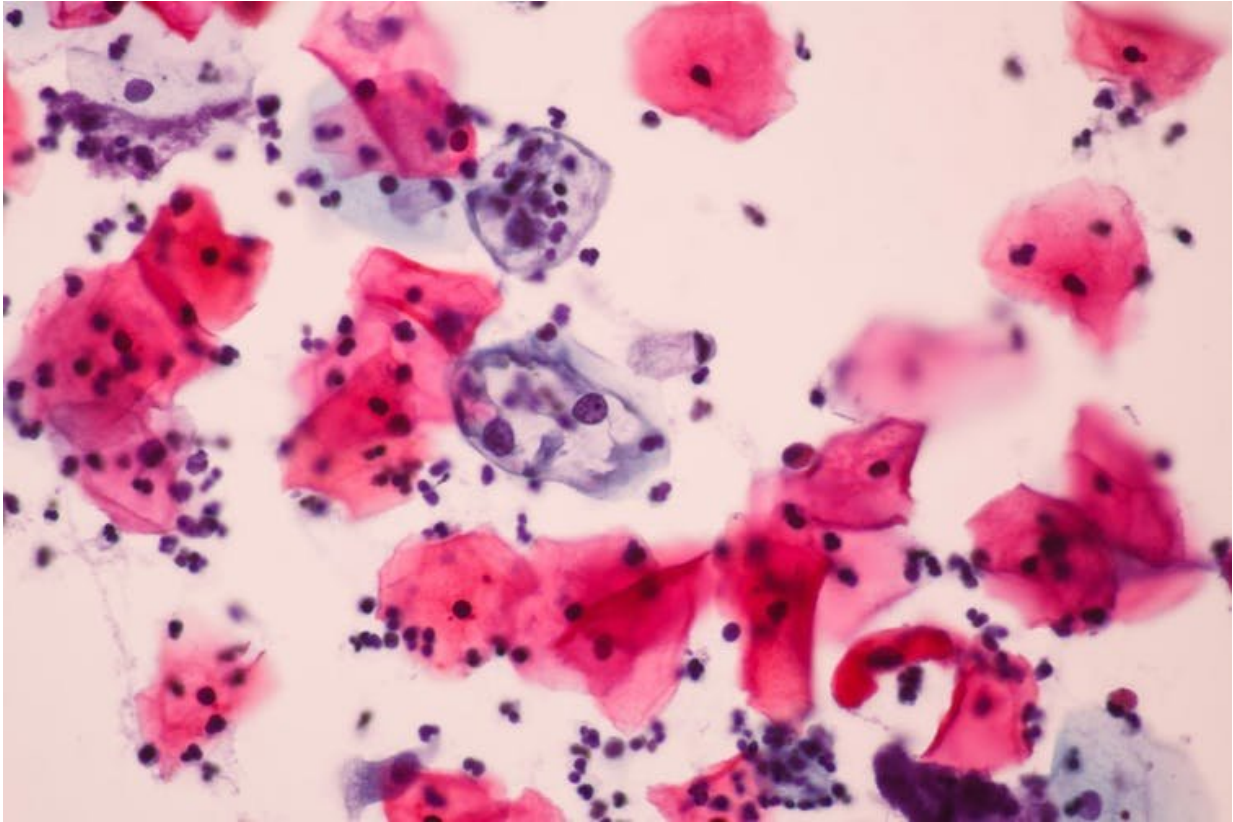
Current screening for [cervical cancer](#) is done through the collection, staining and microscopic examination of cells from the cervix ("cytology"). The stain used to assess collected cells was developed in the early 1950s by George Papanikolaou, hence the name: Pap [test](#). During screening, clinicians look for abnormal cells. If any are found, they remove them to stop cervical cancer developing. The cervical screening programme in the UK today was introduced in 1988, and it is estimated to save [2,000 lives](#) a year.

In 1983, a German virologist called [Harold zur Hausen](#) discovered that HPV caused cervical cancer and the first HPV test was invented 15 years later.

Because having the virus is necessary for developing cervical disease, HPV testing is better than a Pap test at identifying those at risk. Also, a negative HPV test is more reassuring than a negative Pap test because cytology is more likely to produce "false negative" results – in other words, not showing disease when there is disease.

In 2003, the US was the first country to introduce HPV-based screening. At the time, Pap smear testing in the US was perceived to be of low quality, so they included HPV testing alongside to ensure better quality screening. Mexico introduced HPV testing in 2008 and Turkey in 2014 (these countries had no high-quality national cytology-based programme before the introduction of HPV testing).

The pace of change in the EU has been considerably slower. The Netherlands and Sweden introduced the HPV test in 2017, while Italy will finish deploying the test at the end of 2018.



An abnormal Pap test. Credit: [Komsan Loonprom/Shutterstock.com](https://www.shutterstock.com/author/komsan-loonprom)

Public Health England and the NHS, who are responsible for the screening programme in England have, until recently, aimed to switch to the HPV test in April 2019, but are now working towards a deadline of December 2019. Introducing HPV testing into existing screening programmes has been much more complicated than expected.

England is by no means the only country that has experienced delays. The hard lesson to learn here is that much earlier planning is needed to ensure a timely introduction of better tests.

Given the effectiveness of the Pap smear, you might think that a short

delay in replacing it with an HPV test would have minimal consequences. In fact, our latest research, published in the [Journal of Medical Screening](#), shows that for every month HPV testing is delayed in England, the chance to stop 48 extra women from developing cervical cancer is missed.

The high cost of delay

For our study, we used a mathematical model to estimate the number of new cancer cases that would be diagnosed by 2030 in England, assuming that HPV testing replaces the Pap smear in 2020 rather than in 2019. We also calculated the life expectancy for this excess cancer.

We also used a measure of disease burden called QALY (quality-adjusted life years) to estimate the cost of the excess cancers. A QALY includes both the quality and the quantity of life lived following the diagnosis of [cancer](#). It is used to compare health interventions when deciding which is better value for money.

We calculated that a one-year delay in implementing HPV [screening](#) would lead to a loss of 1,595 quality-adjusted life years, with a value of £32m. In estimating the cost per QALY, we used conservative assumptions, making the huge cost of delayed introduction even more shocking. As such, it's vital that there are no further delays in the roll-out of HPV testing in England.

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