

Study title: *Alternative Cervical Screening (ACES)*

Urine human papillomavirus (HPV) testing for cervical pre-cancer screening

What were we trying to do?

Cervical screening is a test to help prevent cervical cancer and can save lives. However, only 7 in 10 people attend their screening appointment. This can be for a number of reasons such as embarrassment, inconvenience, pain or fear. **Our goal is to find ways of making cervical screening easy, accurate and convenient so that everyone can attend.** We think a urine test could help break down barriers and encourage more people to take part in cervical screening.

Who took part?

We recruited 480 people who had been referred for a colposcopy appointment to investigate a positive cervical screening (smear test) result.

The study was funded by NIHR, sponsored by The University of Manchester and recruitment was conducted by staff at Manchester University NHS Foundation Trust (St Mary's Hospital, Manchester).

How did we do it?

We collected urine and cervical samples from people in clinic, before their colposcopy procedure. We wanted to see if there are better ways to collect urine from people so half the people in the study collected urine in a small pot, and half the people collected urine using a device called a 'Colli-pee'. The colli-pee is designed to collect the first bit of urine after you start to wee. It collects a specified amount of urine and a special liquid in the collection tube helps to preserve the sample.

We asked people to fill out a questionnaire to see how they felt about self-collecting urine, and what they wanted for the future of cervical screening. People then continued to have their normal NHS care.

We tested urine and cervical samples for a virus called Human papillomavirus (HPV). Nearly all cervical cancers are caused by persistent infection with certain types of HPV. HPV testing is performed on all cervical samples collected for current routine NHS cervical screening.

We then looked at the accuracy of testing a urine sample for HPV for the identification of people with high grade cervical pre-cancer. High grade cervical pre-cancer means people who have a higher chance of developing cervical cancer. We also looked at the difference between each method of urine collection.

What did we find?

We found that, for the HPV test, the colli-pee was a better way to collect urine.

When tested for HPV, the urine collected using a colli-pee identified 112 out of 124 (90.3%) people with high grade cervical pre-cancer.

When tested for HPV, the urine collected in a small pot identified 91 out of 124 (73.4%) people with high grade pre-cervical cancer.

For comparison, routine cervical screening (also known as the smear test) picks up 95 out of every 100 cervical pre-cancers (95%).

The questionnaire showed that people felt confident collecting a urine sample.

What are we doing now?

HPV testing using colli-pee collected urine shows promise as an alternative test for cervical screening. We are now performing more studies to advance urine testing. This includes urine testing in people attending routine cervical screening and people who are at greater risk of cervical cancer (people with a history of smoking and people who do not attend screening).

Where can I read more?

Please scan the QR code for a copy of the published paper. If you need a paper copy, please email aces@manchester.ac.uk

