

The effectiveness and costs of the new Dutch cervical cancer screening program: offering primary HPV screening and a self-sampling kit versus primary cytology screening.

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Background. In 2017, the Dutch cervical cancer screening program is transformed from a cytology-based program to primary HPV screening, with fewer lifetime screens. Women who do not attend office-based screening will now be offered a self-sampling kit. We compared the costs and effects of the new and the old program.

Methods. We used the MISCAN-Cervix microsimulation model to estimate the costs and effects of both programs for (unvaccinated) women born between 1956-1992. In the old program, primary cytology was offered to women aged 30-60 every 5 years. In the new program, primary HPV screening is offered to women aged 30, 35, 40, 50, and 60 years. Additional tests will be offered at ages 45 and 55 for women who either have a positive test or do not attend screening at ages 40 and 50, respectively, and at age 65 for women who tested positive at age 60. Reported outcome measures are the number of false-positive referrals, CIN lesions, cervical cancer incidence and mortality, QALYs, and costs.

Results. The lifetime number of cervical cancers and cancer deaths are estimated to decrease by 13% and 15%, respectively. While the number of diagnosed CIN3 lesions are estimated to decrease as well (-6%), we predicted a substantial increase in false-positive referrals (+392%), CIN1 (+196%), and CIN2 (+54%). Overall, QALYs are higher in the new versus old program compared to no screening (+17%). Total costs are estimated to decrease by about 20%, due to a reduction in costs of screening, diagnosis and treatment of cervical cancer, and palliative care.

Conclusions. In the primary HPV cervical cancer screening program, more women will be unnecessarily referred to the gynecologist. However, these harms are outweighed by the anticipated substantial reduction in cervical cancer incidence and mortality. Compared to the old screening program, the new program is more cost-effective.