

Benefits and harms of cervical cancer screening across five screening regions in the Netherlands

Aitken, C.A.¹, Matthijsse, S.M.¹, Naber, S.K.¹, de Kok, I.M.C.M¹

1. Erasmus MC, University Medical Center Rotterdam, Department of Public Health, Rotterdam, the Netherlands

Background: Besides the benefits that are offered by cervical cancer screening, harms are also associated with early detection and treatment of low-grade cervical lesions. This study aims to describe differences in benefits (low rate of cancer after normal cytology) and harms (overtreatment of CIN 1 lesions) across five screening regions in the Netherlands.

Methods: Using data from the Dutch nationwide network of histo- and cytopathology (PALGA), we calculated the incidence rate of cancer after normal cytology per 100,000 woman-years and the proportion of see-and-treat excisional procedures for CIN 1 lesions for five screening regions.

Cancer after normal cytology - Index smears were screening smears with a normal result taken from 1 January 1999 to 31 December 2006. Years at risk were calculated from index smears until either a) next screening smear, b) age 64, c) 6.5 years of follow-up or d) cancer diagnosis. Rates were standardised for age, follow-up length and previous negative smears.

Overtreatment – Direct colposcopy referrals between 1 January 2005 and 31 December 2014 with CIN 1 diagnosis were identified. The proportion of excisional procedures in the first follow-up were calculated.

Results: Standardised cancer rates by screening region were lowest in Region 3 at 6.9 per 100,000 woman-years at risk, with significant differences between highest and lowest screening region (range: 6.9 – 10.7 per 100,000 women-years).

Between 2005 and 2014, the proportion of women treated with excisional techniques with a final diagnosis of CIN 1 was highest in Region 3 (22.1%) and lowest in Region 1 (9.3%).

Conclusions: The region with the lowest rate of cancer after normal cytology also had the highest proportion of overtreatment for CIN 1 lesions. This shows the strong relationship between benefits and harms of screening, even in a small country with strict screening and treatment guidelines.