



Title	Cost Effectiveness of Screening High-Risk HIV-Positive Men Who Have Sex With Men (MSM) and HIV-Positive Women for Anal Cancer
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Aim

To estimate the cost effectiveness of screening for anal cancer in the high-risk, HIV-positive population – in particular, men who have sex with men (MSM) – by developing a model that incorporates the national screening guidelines criteria.

Conclusions and results

The reference case cost-effectiveness model for MSM found that screening for anal cancer is unlikely to be cost effective. The negative aspects of screening include utility decrements associated with false-positive results and treatment for high-grade anal intraepithelial neoplasia (HG-AIN). Sensitivity analyses showed that removing these utility decrements improved the cost effectiveness of screening. Combined with higher regression rates from low-grade anal intraepithelial neoplasia (LG-AIN), the lowest expected incremental cost-effectiveness ratio was >44 000 pounds sterling (GBP) per quality-adjusted life-year (QALY) gained. Probabilistic sensitivity analysis showed that no screening retained over 50% probability of cost effectiveness at a QALY value of GBP 50 000. The screening model for HIV-positive women showed an even lower likelihood of cost effectiveness (the most favorable sensitivity analyses reported an incremental cost per QALY of GBP 88 000).

Recommendations

This report clearly shows that many of the criteria for assessing the need for a population screening program have not been met for anal cancer. Knowledge is limited regarding the epidemiology and natural history of the disease, and good-quality evidence on the effectiveness of anal cancer screening is lacking. The absence of such data, combined with the possible reluctance of high-risk groups to attend an anal cancer screening program, makes introduction of population-based screening for anal cancer difficult. Cost-effectiveness analyses of screening for anal cancer emphasize this conclusion. The results show little likelihood that screening any of the identified high-risk groups would improve health

at a reasonable cost. These results could be confirmed by updating key parameters. The most efficient way to proceed would be to audit the accuracy of the cancer registries' identification of cases of anal cancer and audit the proportion of cancer cases that occur in HIV-positive men and HIV-positive women, and/or MSM. If the data show that the screening model has underestimated the impact of anal cancer in any of the populations evaluated then an evaluative study of the effects of treatment for HG-AIN may be justified.

Methods

Systematic literature reviews addressed the epidemiology and natural history of anal cancer, screening technologies and screening policies, and cost effectiveness of candidate technologies/programs/policies. Two decision-analytical models were developed and populated to analyze the cost effectiveness of screening in HIV-positive and HIV-negative MSM, and in HIV-positive women.

Further research/reviews required

Many of the criteria for assessing the need for a screening program were not met. Further studies could assess whether the screening model has underestimated the impact of anal cancer, the results of which might justify an evaluative study of the effects of treatment for HG-AIN.