

Oral Health: Oral Cancers and Potentially Malignant Disorders, Population-Based Interventions for Early Detection

Task Force Finding and Rationale Statement

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Task Force Finding and Rationale Statement

Intervention Definition

Population-based interventions for early detection of oral cancers and potentially malignant disorders can take many forms, which include:

- Educating the public about the risk factors, symptoms, and signs of oral cancer, and the value of early detection
- Encouraging high-risk or symptomatic people to examine themselves for suspicious lesions and seek professional examination and care
- Training health workers to detect suspicious lesions and refer patients for follow-up as needed
- Screening people through community outreach initiatives at the workplace, home, health fairs, field clinics, or through usual source of care, and referring those with suspicious lesions for follow-up and treatment

This review does not cover screening done as part of routine dental examinations in primary care settings. The U.S. Preventive Services Task Force evaluated the effectiveness of [screening asymptomatic adults for oral cancer](http://www.uspreventiveservicestaskforce.org/uspstf13/oralcan/oralcanfinalrec.htm) [www.uspreventiveservicestaskforce.org/uspstf13/oralcan/oralcanfinalrec.htm] in the primary care setting and found insufficient evidence to assess the balance of its benefits and harms.

Task Force Finding (October 2013)

The Community Preventive Services Task Force finds insufficient evidence to determine the effectiveness of population-based interventions for early detection of oral cancers and potentially malignant disorders, either in the general population or in high-risk or symptomatic populations. Evidence was considered insufficient because only one study with relevant health-related outcomes, and limited generalizability to the U.S. population, was identified.

Rationale

Basis of Finding

The Task Force finding is based on evidence from a systematic review on the effectiveness of oral cancer screening programs (Brocklehurst et al., 2013; search period 1950-2013). No studies evaluating the effectiveness of other forms of population-based interventions, with relevant health-related outcomes, were identified. This finding updates the 2000 Task Force finding on Population-Based Interventions for Early Detection for Oral and Pharyngeal Cancers.

The review by Brocklehurst et al. included one randomized controlled trial with a large sample size (n=191,873) and 15 years of follow-up data. Overall results showed no significant difference between screened and control groups in the incidence of oral cancer, or oral cancer mortality. Data specific to high-risk individuals (those who used tobacco or alcohol or both), however, showed a 24% reduction in mortality in the screened group. In addition, the proportion of cancers diagnosed as stage III or worse were significantly lower among the screened group (53%) than among the control group (65%).

The updated search for evidence identified a systematic review that evaluated the accuracy of screening tests for the early detection of oral cancers and potentially malignant disorders. Findings from this review are covered comprehensively by the U.S. Preventive Services Task Force.

Applicability and Generalizability Issues

The one included study (Brocklehurst et al., 2013) was conducted in India, where the incidence of oral cancer is greater than in the U.S. Although the study shows that screening reduces oral cancer mortality rates for those who use tobacco or alcohol or both, the applicability of these results to a U.S. population is unclear.

Data Quality Issues

The Brocklehurst et al. study was a randomized controlled trial. Researchers did not adequately apply randomization procedures to address selection bias, however, and there was incomplete reporting of outcome data.

Other Benefits and Harms

The broader literature indicates that population-based interventions, including screening programs and initiatives and public awareness and educational campaigns, improve knowledge of oral cancers and potentially malignant disorders among both the public and dental professionals. Increased awareness may positively affect attitudes about screening, reduce anxiety associated with screening, and increase visits to the dentist. Studies have not, however, presented outcome data to show that changes in knowledge and attitudes predict favorable health-related outcomes.

Potential harms of this intervention were not addressed in the included study. However, the broader literature suggests there is a potential for screening initiatives to lead to unnecessary referrals and treatment. Increased referrals also may lead to financial burdens for patients and delays in follow-up testing and treatment. Further, false positive screening results may cause undue psychological distress to patients and false negative results may miss the presence of disease in some patients, potentially leading to disease progression.

Considerations for Implementation

Important challenges to these interventions include low rates of participation and follow-up. Studies evaluating the accuracy of screening methods within population-based programs found participation rates ranged from 50%-93% (Walsh et al., 2013). Lower rates have implications for effectiveness, particularly because factors affecting participation are likely to be correlated with risk indicators for oral cancers and potentially malignant disorders. Additionally, there is limited evidence about rates of patient follow-up once a suspicious lesion has been identified.

Another consideration for implementation is the controversy around early management of potentially malignant disorders. There is some evidence that the surgical removal of potentially malignant disorders may not remove the risk of a malignancy developing.

In light of these challenges and the Task Force finding of insufficient evidence for screening programs, it is even more important to focus on prevention strategies that reduce risk of oral cancer (e.g., tobacco use and alcohol abuse prevention programs). Such programs would support the World Health Organization's resolution to incorporate oral cancer into national cancer control programs.

Evidence Gaps

With regard to the effectiveness of population-based initiatives, there is a need for high quality research in different settings with varying cancer rates. The one included study in this review was conducted to demonstrate the effectiveness of a screening initiative in India, which has a high rate of oral cancer. Studies evaluating the effectiveness of other forms of population-based initiatives, such as public awareness campaigns and educational interventions, with relevant health-related outcomes, are required.

After initial detection and diagnosis, more research is required around the management of potentially malignant disorders including effective treatment strategies, potential markers that can predict the likelihood for developing into a malignancy, and time frame for progression, as well as around patients' knowledge and their compliance with referrals and follow-up.

While tobacco and alcohol use remain important risk factors for oral cancer, future research should address infection with human papillomavirus (HPV) and emerging risk factors, such as the role of the oral microbiome. For example, the rates of oro-pharyngeal cancers associated with HPV are increasing. Further research is needed to understand the natural history of oncogenic oral HPV infection in order to develop strategies for the identification of high-risk individuals.

The data presented here are preliminary and are subject to change as the systematic review goes through the scientific peer review process.

References

Brocklehurst P, Kujan O, O'Malley LA, Ogden G, Shepherd S, Glenny A-M. Screening programmes for the early detection and prevention of oral cancer. *Cochrane Database of Systematic Reviews* 2013;11. Available at URL:

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Disclaimer

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