

Oral and Pharyngeal Cancers: Population-Based Interventions for Early Detection (2000 Archived Review)

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Review Summary

Intervention Definition

Population-based interventions to detect pre-cancers and cancers of the mouth and throat early in their development seek to:

- Educate the public about the risk factors, symptoms, and signs of mouth and throat cancers, and the value of detecting them early
- Encourage people at high risk or with symptoms of mouth or throat cancer to have a medical examination and follow-up
- Train health workers to detect suspicious lesions (abnormalities or changes in the mouth or throat, e.g., leukoplakia, erythroplakia, lichen planus, submucous fibrosis) in clients as possible signs of cancer and refer the clients for follow-up and treatment
- Examine people at the workplace, home, health fairs, field clinics, or the usual source of care

Summary of Task Force Finding

The Community Preventive Services Task Force finds insufficient evidence to determine the effectiveness of population-based interventions for early detection of oral (mouth) and pharyngeal (throat) pre-cancers and cancers because the available studies did not report the effects of the programs on morbidity, mortality, or quality of life outcomes.

Results from the Systematic Reviews

- No studies reported estimates of effect in terms of morbidity, mortality, or quality of life.
- Of 19 studies identified, 7 measured the accuracy of such interventions in detecting suspicious lesions for follow-up and treatment.
- Estimates of the accuracy of such screening activities varied widely (sensitivity: 59% – 97%; specificity: 69% – 99%; predictive value positive: 31% – 87%) within ranges reported in other published reviews (e.g., in Chapter 16 of the Guide to Clinical Preventive Services).

These results were based on a systematic review of all available studies, conducted on behalf of the Task Force by a team of specialists in systematic review methods, and in research, practice and policy related to oral health.

Publications

Truman BI, Gooch BF, Sulemana I, et al. [Reviews of evidence on interventions to prevent dental caries, oral and pharyngeal cancers, and sports-related craniofacial injuries](http://www.thecommunityguide.org/oral/oral-ajpm-ev-rev.pdf) [www.thecommunityguide.org/oral/oral-ajpm-ev-rev.pdf]. *Am J Prev Med* 2002;23(1S):21-54.

Task Force on Community Preventive Services. [Recommendations on selected interventions to prevent dental caries, oral and pharyngeal cancers, and sports-related craniofacial injuries](http://www.thecommunityguide.org/oral/oral-ajpm-recs.pdf) [www.thecommunityguide.org/oral/oral-ajpm-recs.pdf]. *Am J Prev Med* 2002;23(1S):16-20.

Task Force on Community Preventive Services. [Promoting oral health: interventions for preventing dental caries, oral and pharyngeal cancers, and sports-related craniofacial injuries: A Report on Recommendations of the Task Force on Community Preventive Services](http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5021a1.htm) [www.cdc.gov/mmwr/preview/mmwrhtml/rr5021a1.htm]. *MMWR* 2001;50(RR21):1-13.

Task Force on Community Preventive Services. [Oral health](http://www.thecommunityguide.org/oral/Oral-Health.pdf) [www.thecommunityguide.org/oral/Oral-Health.pdf]. In: Zaza S, Briss PA, Harris KW, eds. *The Guide to Community Preventive Services: What Works to Promote Health?* Atlanta (GA): Oxford University Press;2005:304-28 (Out of Print).

Task Force Finding

Intervention Definition

Population-based interventions for early detection of pre-cancers and cancers educate the public about risk factors, symptoms, signs, and the value of early detection; encourage high-risk or symptomatic individuals to examine themselves for suspicious lesions and to seek out a source of professional examination and follow-up; train health workers to detect suspicious lesions; examine people at the workplace, home, health fairs, field clinics, or the usual source of care; and refer eligible people with suspicious lesions (e.g., leukoplakia, erythroplakia, lichen planus, submucous fibrosis, and oral cancer) for follow-up and treatment.

Task Force Finding (June 2000)*

The Task Force identified 19 studies with limited quality of execution. Those studies provide insufficient evidence of the effectiveness of early detection programs in improving stage distribution, morbidity, mortality, or quality of life at the population level.

*From the following publication:

Task Force on Community Preventive Services. [Recommendations on selected interventions to prevent dental caries, oral and pharyngeal cancers, and sports-related craniofacial injuries](http://www.thecommunityguide.org/oral/oral-ajpm-recs.pdf) [www.thecommunityguide.org/oral/oral-ajpm-recs.pdf]. *Am J Prev Med* 2002;23(1S):16-20.

Supporting Materials

Analytic Framework

See Figure 1 on page 24 of Truman BI, Gooch BF, Sulemana I, et al. [Reviews of evidence on interventions to prevent dental caries, oral and pharyngeal cancers, and sports-related craniofacial injuries](#)

[www.thecommunityguide.org/oral/oral-ajpm-ev-rev.pdf]. *Am J Prev Med* 2002;23(1S):21-54.

Evidence Gaps

What are Evidence Gaps?

Each Community Preventive Services Task Force (Task Force) review identifies critical evidence gaps—areas where information is lacking. Evidence gaps can exist whether or not a recommendation is made. In cases when the Task Force finds insufficient evidence to determine whether an intervention strategy works, evidence gaps encourage researchers and program evaluators to conduct more effectiveness studies. When the Task Force recommends an intervention, evidence gaps highlight missing information that would help users determine if the intervention could meet their particular needs. For example, evidence may be needed to determine where the intervention will work, with which populations, how much it will cost to implement, whether it will provide adequate return on investment, or how users should structure or deliver the intervention to ensure effectiveness. Finally, evidence may be missing for outcomes different from those on which the Task Force recommendation is based.

Identified Evidence Gaps

Community water fluoridation (CWF)

Most of the evidence indicates that CWF is safe and effective in reducing dental caries in communities. However, important research questions with practical applications remain unanswered, including:

- What is the effectiveness of laws, policies, and incentives to encourage communities to start or continue water fluoridation?
- What is the effectiveness of CWF in reducing socioeconomic or racial and ethnic disparities in caries burden?
- What is the effectiveness of CWF among adults (aged >18 years)?
- What, if any, are the effects of the increasing use of bottled water and in-home water filtration systems (which may not be fluoridated or may remove fluoride, respectively) on the benefits gained through CWF?
- How effective is CWF in preventing root-surface caries?

School-based or school-linked pit and fissure sealant delivery programs

The evidence is clear and convincing that sealants delivered through schools and school-affiliated clinics are safe and effective in preventing dental caries among children. Important research questions yet to be answered include:

- What is the effect of sealant delivery programs among adults aged >18 years (e.g., military recruits)?
- How do state dental practice laws and regulations affect use of sealants in school-based programs?
- How do school district oral health policies and curricula affect use of sealants?
- What is the effectiveness of sealants in primary teeth?

Statewide or community-wide sealant promotion programs

The available evidence of the effectiveness of statewide or community-wide sealant promotion programs was insufficient to support a recommendation by the Task Force. Therefore, research in the following areas is a high priority:

- What is the effect of public education on awareness, community mobilization (through coalitions), and resource allocation for sealant promotion?
- What is the effect of professional education, combined with provider reminders and other system-oriented strategies, on knowledge, skills, and appropriate use of sealants?
- What is the effect of insurance coverage and managed care plans on access to and use of sealants?
- How cost effective are models of sealant delivery other than school based?

Ecologic Approaches Using Multiple Interventions with Many Targets of Change

Research on ecologic approaches in various settings might involve multiple interventions with many targets of change and desirable health. Estimates of effectiveness might focus on increase in knowledge, behavioral intentions, and behaviors in the short term and the desirable health outcomes mentioned above in the long term. Questions such as the following need to be answered:

- What is the effect on several oral health outcomes of community-wide interventions that combine environmental change, legislative action, policy change, and social support within families to encourage behavior change?
- What is the effect on several oral health outcomes of community development coalitions, partnerships, mass media advocacy, and social marketing?
- What is the effect on several oral health outcomes of multicomponent interventions in selected settings?

Disclaimer

The findings and conclusions on this page are those of the Community Preventive Services Task Force and do not necessarily represent those of CDC. Task Force evidence-based recommendations are not mandates for compliance or spending. Instead, they provide information and options for decision makers and stakeholders to consider when determining which programs, services, and policies best meet the needs, preferences, available resources, and constraints of their constituents.

Document last updated September 2, 2014