Evidence Summary Title:
Community screening for visual impairment in the elderly: Evidence and implications for public health

Quality Assessment Rating: 9 (strong)

Review on which this evidence summary is based:

Note: The Cochrane review that this evidence summary is based on has been updated. This evidence summary summarizes the above-cited version of this review, not the updated version.

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This is an evidence summary written to condense the work of the authors of this systematic review, referenced above. The intent of this summary is to provide an overview of the findings and implications of the full review. For more information on individual studies included in the review, please see the review itself.

Review content summary
This systematic review of 5 individually randomized controlled trials (RCTs) (3494 participants aged 65 years and older) and 1 cluster RCT (1807 participants aged 75 years and older) aimed to assess the effects on vision of mass screening of older people for visual impairment. In all trials included in this review, visual screening was conducted as part of multi-component screening. All trials used self-reported measures as screening tools and outcome measures to assess the level of visual impairment. Authors conclude that visual screening among older people is not an effective strategy to improve vision among this population.

Comments on this review’s methodology
This is a methodologically strong systematic review. A clear focused research question with appropriate inclusion criteria was noted. A main limitation of this review is the lack of a comprehensive search strategy. While the search strategy involved scanning reference lists of relevant articles and contacting authors and covered an adequate time period, it was limited to health databases and no mention was made of handsearching relevant journals or the grey literature. Primary studies were assessed for methodological quality (allocation concealment, attrition bias, intention-to-treat analysis, and masking of outcome assessment) by two reviewers with appropriate measures taken to reconcile any differences. As tests revealed no heterogeneity among the 5 individually randomized RCTs, the results of these trials were pooled. The results of the one cluster RCT were reported separately.

Why this issue is of interest to public health
Research suggests that one in nine Canadians will develop irreversible vision loss by age 65 and one in four by age 75. Visual impairment is associated with earlier nursing home admission as well as greater incidence of falls and fall-related injuries, depression, and deaths. These factors contribute, not only to the human costs, but are also associated with increased health care and other costs. In Canada, the costs predictions indicate that by 2016 that visual impairment in addition to the human costs, will amount to over $1 billion annually. Visual impairment disproportionately affects people with lower education or socioeconomic status, and those who speak languages other than English. Given our aging population, the prevalence of visual impairment is expected to increase with estimates suggesting that the number of Canadians aged 65-75 will rise from approximately 2.2 million in 2001 to approximately 4 million in 2021. While often unreported and some conditions resulting in visual impairment, it may be detected through screening.
Evidence and implications

Evidence points are weighted or ranked according to strength

<table>
<thead>
<tr>
<th>What's the evidence?</th>
<th>Implications for practice and policy:</th>
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| 1. **Self-reported visual problems** (5 studies)  
  1.1. People aged 65 and older who underwent visual screening were no more or less likely to report visual problems when outcome assessment is performed than those in control groups [RR = 1.03, (95% CI 0.92-1.15); OR=1.04, (95% CI 0.89-1.22)] | 1. **Self-reported visual problems**  
  1.1. Visual screening programs are not effective in improving self-reported visual outcomes among people aged 65 or older.  
  1.2. Therefore programs that aim to identify and improve visual acuity among the elderly should not involve only visual screening with self report.  
  1.3. Programs that do aim to improve visual acuity among the elderly should be evaluated for their effectiveness using rigorous program evaluation designs. |
| 2. **Universal vs. Targeted Screening** (1 study)  
  2.1. People aged 75 and older who underwent universal screening were no more or less likely to have visual acuity less than 6/18 in either eye three to five years after screening than those who underwent targeted screening [RR 1.07, (95% CI 0.84-1.36)]  
  2.2. People aged 75 and older who underwent universal screening were no more or less likely to have mean composite visual functional (NEI VFO:25) scores than those who underwent targeted screening [difference = 0.4, (95% CI -1.7-2.5)] | 2. **Universal vs. Targeted Screening**  
  2.1. Given the required resources and the lack of effectiveness in comparison to targeted screening, public health units are advised against implementing or promoting universal vision screening for persons aged 65 and older. |
| 3. **Methodological issues**  
  3.1. Self report used for data collection  
  3.2. Lack of research related to  
  3.2.1. impact of screening older people for visual impairment alone  
  3.2.2. Canadian programs and services  
  3.2.3. impact of visual screening on referral to and use of relevant health services and the impact of these referrals and services on visual impairment | 3. **Research and Evaluation**  
  Rigorous program evaluations and high quality research studies should be conducted in Canada that includes  
  3.1. Valid and reliable data collection and assessment tools  
  3.2. Assessment of  
  3.2.1. effectiveness of visual screening alone  
  3.2.2. effectiveness of Canadian programs and services  
  3.2.3. screening, referral to and use of services on visual impairment |

**General implications**
- Community-based screening of asymptomatic people aged 65 and older is not effective in improving visual status of this population.
- Rigorous program evaluations and high quality research studies should be conducted in Canada

**Legend:** CI – Confidence Interval; OR – Odds Ratio; RR – Relative Risk

**For definitions please see the healthevidence.org glossary** [http://www.healthevidence.org/glossary.aspx](http://www.healthevidence.org/glossary.aspx)

Cost benefit or cost-effectiveness information

*(Cost-effectiveness is/is not addressed in this review.)*

References used to outline issue


Other quality reviews on this topic

Related links

- Canadian National Institute for the Blind [http://www.cnib.ca]

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