A Public Health Practice Divide in Childhood Vision Screening in Canada: Reconciling evidence and accountability

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Amblyopia or Lazy Eye

- Functional reduction in vision caused by misuse during visual development
- Fully developed around 6 years of age
- Typically affects one eye and is asymptomatic
- Poor vision persists for life unless treated
- Prevalence in Canada 4.7% (NL 2008)
Anisometropia

- Most common type
- One eye has good vision
- Asymptomatic
- Detected late, or too late

Amblyopia Treatment

- Correction of underlying problem (i.e. glasses, surgery)
- Occlusion of good eye
- Goal is to stimulate the ‘lazy eye’
Critical Period for Intervention

- Timing of the intervention is crucial for the visual outcome
- Ideally by 4 or 5 years of age
- Early intervention benefits:
  - More effective due to neural plasticity
  - More effective because vision loss not as severe
  - Better compliance with treatment
  - Duration of the therapy is shorter
AMBLYOPIA PREVENTION =

Early Detection or Screening
WHO Screening Principles

- The condition should be an important health problem
- There should be an accepted treatment
- Facilities for diagnosis should be available
- There should be a recognized latent or early symptomatic stage
- There should be a suitable test or examination
- The test must be acceptable to the population
- The natural history must be understood
- There should be an agreed policy on whom to treat as patients
- The cost of case finding should be economically balanced in relation to the possible expenditure on medical care as a whole
- Case finding should be a continuing process and not a once-and-for-all process

What to do?

Absence of RCT evidence

Evidence-based Public Health Approach

(Brownson et al, Annu.Rev.Public Health 2009;30:175-201)
Public health involvement with vision screening in Canada

Provincial/ Territorial Chief Medical Officers of Health were asked:

• Vision screening by public health:
  • yes
  • no

• If yes:
  ▪ Age of children being tested
  ▪ Tests provided
  ▪ Qualifications of personnel administering the tests
## Amblyopia Screening Results

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<th>Province</th>
<th>Screening</th>
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<td>British Columbia</td>
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Optometry Exam: A Public Health Screening Alternative

- In some jurisdictions, the local association of optometrists in partnership with schools runs a program advocating for children’s visual assessment, e.g., Eye See, Eye Learn
- Annual free comprehensive optometry exam offered to children in some provinces
- One jurisdiction reported that their local PH screening program was discontinued as a consequence of optometry coverage
# PH Screening & Childhood Optometric Exam Coverage

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*Source: Canadian Association of Optometrists*
Conclusions

- Screening for amblyopia is justified

- Some jurisdictions in Canada seem to have delegated the task of “screening” to optometrists

- This raises concerns related to poor uptake and the potential to increase health disparities
Recommendations

1. Current public health amblyopia screening programs should be maintained

2. Provinces without organized screening programs should reconsider their role in the prevention of amblyopia

3. Surveillance of amblyopia screening uptake by public health is essential if programs are offered by other groups
THANK YOU

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