Childhood Vision Screening in Canada: Public Health Evidence and Practice

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ABSTRACT

Objectives: Best practice guidelines recommend vision testing in children 3 to 5 years of age for the prevention of amblyopia; however, universal vision screening is controversial. In Canada, amblyopia screening can be the responsibility of physicians, optometrists, and/or Public Health. We review the evidence underlying preschool vision screening for amblyopia using an Evidence-based Public Health (EBPH) approach, and consider implications for the Public Health provision of universal screening programs for amblyopia in Canadian jurisdictions in light of present practices.

Methods: We searched the literature to address each major screening criterion (disease, test, treatment, program requirements) necessary to support preschool vision screening for amblyopia. We also reappraised papers cited in two systematic reviews related to the impact of vision screening. The Chief Medical Officer of Health of each province/territory was sent a short survey asking whether there currently was a Public Health preschool vision screening program in place and if so, for specifics about the program.

Results: An EBPH approach to the literature with respect to the criteria for screening and available intervention studies support amblyopia screening by Public Health. There is a public health divide in amblyopia screening practice in Canada; while some provinces maintain organized programs, others have chosen to delegate the task to other professionals, without a concurrent surveillance function to monitor disparities in uptake.

Conclusions: Amblyopia deserves attention from Public Health. Efforts should be made to maintain existing programs, and provinces without organized screening programs should reconsider their role in the prevention of inequities with regard to preventable blindness in Canadian children.

Key words: Amblyopia; vision screening; children; public health; evidence; precautionary principle

La traduction du résumé se trouve à la fin de l'article.

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Screening is an important public health strategy for disease prevention. It enables the early identification of disease in asymptomatic individuals and allows them to benefit from direct preventive action.¹ Preschool vision screening has been used for the early detection of amblyopia or lazy eye, which is the leading cause of monocular blindness in the 20 to 70 year age group in higher-income countries.² Amblyopia is defined as reduced visual acuity (VA) with no obvious structural or pathologic causes that cannot be improved by corrective lenses.³ The condition develops within the first six years of life,⁴ and once established, persists.

Many countries have well-established amblyopia screening programs.⁵ In Sweden, for example, children beginning at age 4 are assessed for VA by public health nurses in a program that has an uptake of over 99%.⁶ Historically, Canadian public health efforts routinely targeted early detection of amblyopia with trained public health nurses,⁷ but a 2007 report⁸ showed wide variation in amblyopia screening practices among Canadian provinces.

The decline of amblyopia screening seems to be attributed to reservations about the level of evidence that exists to justify such programming.⁹ Evidence-Based Medicine (EBM), a concept embraced in clinical practice, privileges evidence derived from randomized controlled trials.¹⁰ In the case of amblyopia screening, a Cochrane systematic review of the literature stated that “despite the large amount of literature available regarding vision screening no trials designed to compare the prevalence of amblyopia in screened versus unscreened populations were found” (ref. 11, pg. 1).

This review¹¹ and a second systematic review⁵ both concluded that there was insufficient evidence on the impact of vision screening.

The lack of evidence from randomized controlled trials about amblyopia screening has been interpreted as lack of evidence in support of screening, with the result that data from cohort studies and natural experiments, which have shown benefits from screening, have been ignored. In addition, little consideration has been given to whether amblyopia fulfills the World Health Organization's principles for screening¹² (Table 1).

We suggest that an Evidence-Based Public Health (EBPH) approach might better bridge evidence and practice in the case of amblyopia screening.¹⁰ EBPH offers a decision-making framework based on research evidence as well as the population characteristics and resources available, and directs policy-makers to accept the ‘best available’ as opposed to the ‘best possible’ evidence.¹⁰ In this paper, we review the evidence underlying amblyopia screening

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using an EBPH approach, and consider implications for Public Health provision of universal screening programs for amblyopia in Canadian jurisdictions in light of present practices.

METHODS

Our review of the evidence for amblyopia screening began with a search of the literature to address each major screening criterion (disease, test, treatment, program requirements).¹² Sources examined included original studies, literature reviews and the grey literature which included Canadian and international practice guidelines. We then searched for the best available evidence necessary to assess Public Health-led amblyopia screening. For this step, we reappraised papers cited in the previously mentioned systematic reviews, from which five original studies had been identified.^{5,11} We also searched for new amblyopia studies and found none. The five studies had (at least initially) met the inclusion criteria of the systematic reviews and therefore were considered the “best available evidence”; in addition, they represented population characteristics and used screening tests that were applicable to Canada.^{5,11} We then reappraised these studies according to the EBPH framework.

To assess the current involvement of Public Health in amblyopia screening, a short questionnaire was e-mailed to the provincial/territorial Chief Medical Officers of Health (CMOH) asking them to provide information on their jurisdiction's current practice. In some cases, a regional medical officer of health responded to the survey; in others, the CMOH directed the person responsible for the program to reply. Where screening was in place, we asked for details on the tests, the ages of the target group of children, and the qualifications of the personnel administering the tests – factors that are extensive-

Table 1. Principles of Screening¹²

1. The condition should be an important health problem.
2. There should be an accepted treatment for patients with recognized disease.
3. Facilities for diagnosis and treatment should be available.
4. There should be a recognizable latent or early symptomatic stage.
5. There should be a suitable test or examination.
6. The test should be acceptable to the population.
7. The natural history of the condition, including development from latent to declared disease, should be adequately understood.
8. There should be an agreed policy on who to treat as patients.
9. The cost of case-finding (including diagnosis and treatment of patients diagnosed) should be economically balanced in relation to possible expenditure on medical care as a whole.
10. Case-finding should be a continuing process and not a “once and for all” project.

Table 2. Principles of Screening for Amblyopia

The Condition

- Prevalence of amblyopia among preschool children in Western countries is between 2% and 5%.²⁸⁻³⁰
- In Canada, studies have reported prevalences of 8.3 per thousand⁷ and 4.7%,³¹ respectively.
- Disability associated with amblyopia is not limited to reduced VA. Other functions affected are: normal development of stereopsis, essential for 3D vision; motor skills;^{32,33} and reading speed ability.³⁴
- Patients with amblyopia achieve lower levels of educational attainment³⁵ and suffer from poorer emotional well-being.³⁶
- There is a substantial risk of blindness in amblyopic patients from injury or disease to the healthy eye.³⁷
- Amblyopia is clinically defined as having one or more lines difference in VA between eyes,³⁸ can present with varying levels of severity and usually affects one eye only.
- Predisposing conditions for amblyopia are: a difference in refraction between eyes, or anisometropia (50%); strabismus (19%); a combination of both (27%); and more rarely, media opacification (4%).³⁹
- Amblyopia develops in infants and very young children, beginning only during the first few years of life;⁴ once established, it typically persists for life.
- Risk factors for amblyopia are: prematurity; small for gestational age; having a first-degree relative with amblyopia; and neurodevelopmental delay. Maternal smoking and maternal use of drugs or alcohol during pregnancy are also associated with increased risk of amblyopia in the child.^{40,41}
- Amblyopia produces few symptoms because usually only one eye is affected and the patient has normal acuity; preschool children can function using only one eye even if vision is severely reduced in the other eye.⁴²
- The earlier in childhood the predisposing condition and the longer the duration, the more profound the level of amblyopia.²⁸ In one study, the prevalence of anisometropic amblyopia was found to rise rapidly after two years of age. The authors concluded that by age 3, amblyopia has already occurred in most children in whom it will develop, and that although after this age the prevalence of amblyopia increases only slightly, the degree of amblyopia becomes more profound.¹⁶

The Screening Test

- Sensitivity and specificity in visual acuity tests ranged between 9 and 100% and 8 and 100%, respectively; in auto and photorefractors, between 46 and 95% and 53 and 100%, respectively; in stereoacuity tests, between 14 and 100% and 76 and 99%, respectively.⁴³
- The overall sensitivity of screening tests improved with the age of the child (8, 12, 18, 25 and 31 months vs. 37 months) while specificity remained unchanged.⁴³ Three-year-old children can be reliably examined with VA tests, however the testability rate was approximately 10% better in 4-year-old children.⁴⁴
- Nurse screening showed a sensitivity of 83% and a specificity of 95%;⁴³ personnel with training are more accurate than lay persons (i.e., parents) in detecting deficits of VA.¹³
- The gold standard for diagnosis is a comprehensive eye examination including cycloplegic retinoscopy.⁴⁵

The Treatment

- Treatment involves correction of the underlying predisposing factor, refractive correction, and/or patching or pharmacological blurring of vision in the good eye in order to stimulate the ‘lazy eye’.¹⁴
- The success of the treatment for amblyopia is measured by the extent of vision restoration.¹⁴
- Treatment for amblyopia is more effective prior to the age of 7 years; despite some evidence to suggest that successful treatment of amblyopia in the older child is possible, earlier intervention is more advantageous.¹⁴
- Additional factors that impact visual outcome are the depth of vision loss at the start of the treatment⁴⁶ and compliance with the treatment.⁴⁷
- The threshold applied for failing vision screening varies depending on local or national practice patterns, the test used and the age at screening.¹¹
- ‘The clinical management of amblyopia is determined following careful consideration on a case-per-case basis, taking into account a number of factors including the type of amblyopia present, the patient's age, and the level of VA in the amblyopic eye’ (ref. 14, pg. 103).
- Compliance with treatment is essential for success of the therapy; often, the amount of occlusion the child receives is less than that prescribed by the clinician.¹⁴
- Predictors of low compliance are: poor parental fluency in the national language, a low level of education, and poor acuity at the start of treatment;⁴⁸ poverty has been associated with poorer outcomes in amblyopia treatment.⁴⁹ Psychological or other causes of non-compliance⁵⁰ are: poor parental knowledge about amblyopia, perceived distress in the child when patched, and lower self esteem in the child when patched.
- Educational programs primarily aimed at the child have been proven to improve compliance.⁴⁸
- Concerns about bullying of children, especially with eye patching, at school leading to poor compliance⁵¹ further support earlier treatment of amblyopia, i.e., prior to school entry.⁵²

The Screening Program

- Screening for amblyopia is cost-effective;⁵³ universal eye examination for preschool children has a low cost per QALY.⁸
- The location of the screening program is likely to affect uptake.¹³

Table 3. Design and Critique of Articles Cited in Recent Systematic Reviews^{5,11} on the Effectiveness of Vision Screening in Reducing the Prevalence of Amblyopia

Eibschitz-Tsimhoni et al., 2000 ^{54*}	<ul style="list-style-type: none"> • Description: Retrospective cohort study from Israel that presents the results of a natural experiment. The authors compared the prevalence of amblyopia in two populations of 8 year olds from two different cities, one of which offers systematic screening for amblyopia or its risk factors for children between the ages of 1 and 2.5 years, the other of which does not offer screening. • Findings: Statistically significant difference in the prevalence of amblyopia was found between groups: 1% in the screened vs. 2.6% in the control population. In addition, the prevalence of severe amblyopia (defined by the authors as a VA $\leq 20/60$ in the amblyopic eye) was 17 times higher in the non-screened population. • Amblyopia definition: Corrected VA $\leq 20/40$ or >1 line difference in corrected VA between both eyes. • Critique: Of the 988 children invited for screening at between 1 and 2.5 years of age, 808 complied and were examined, and all 808 were later re-examined at 8 years of age. Schmucker et al.⁵ criticized the exclusion of the 180 non-screened children (almost 20%) from the statistical analysis.
Williams et al., 2002 ^{55*†}	<ul style="list-style-type: none"> • Description: This trial assessed the effectiveness of early treatment for amblyopia in children from a larger cohort study. Intervention was intensive orthoptic screening at 8, 12, 18, 25, 31 and 37 months (intensive group). Children in the control group were offered similar testing at 37 months only. Children were 'pseudo-randomized' into either group according to the last digit in the day of the mother's date of birth. The study included 3,490 children in total; any child in either group who failed a test was referred to the hospital eye service. The outcome assessment consisted of a VA exam of the children at 7.5 years of age. • Findings: Amblyopia in children at 7.5 years of age was statistically less prevalent in the intensive group than in the control group (0.6% vs. 1.8%). Additionally, children with amblyopia in the intensive screening protocol had better acuity than those screened only at 37 months. • Amblyopia definition: Better VA (with glasses or pinhole) of 0.2 LogMAR (or worse), or a difference of best acuity between the two eyes of 0.2 or more. • Critique: Attrition; only 54% of children in the intervention group and 55% in the control group attended the final examination. The authors acknowledged selection bias; children who attended the final examination were more likely to have more educated mothers and less likely to have been born to a teenage mother or to have weighed less than 2500 g at birth.
Williams et al., 2003 ^{56*†}	<ul style="list-style-type: none"> • Description: This report extends the study by Williams et al., 2002 and uses data from all children who attended examination at age 7.5. The intervention group received vision screening at 37 months while children in the control group came from districts where screening is not offered. Outcome was prevalence of amblyopia at age 7.5 in each group. • Findings: The prevalence of amblyopia was approximately 45% lower in the group who received preschool screening than in the control group (adjusted ORs 0.63 to 0.72 for different amblyopia definitions). However, because only 67% of the invited children attended screening, the analysis by 'intention to screen' reduced and eliminated the benefit attributable to early screening. • Amblyopia definition: Same as in Williams et al., 2002. • Critique: Attrition; of the approximately 14,000 children recruited in the original study, around 85% were eligible to participate. Of those, only 67% attended visual examination at age 7. Powell et al.¹¹ contacted the authors directly, but data were not available for children who had missed screening in this series of two studies.
Rasmussen et al., 2000 ^{57*†}	<ul style="list-style-type: none"> • Description: A Swedish randomized controlled clinical trial aimed at examining the suitability of adding a test for stereopsis (the Lang Stereotest) at three years of age as a supplementary method to the already existing vision screening program aimed at 4 year olds in Sweden. Children were randomized to either the intervention or control group. The outcome was prevalence of strabismus and amblyopia at 6.5 years of age. • Findings: At 6.5 years of age, there was no statistical difference in the prevalence of amblyopia between groups. • Amblyopia definition: Not specified. • Critique: This study is 'the only randomized controlled clinical trial' among papers studying the effect of screening for amblyopia, and it 'did not find a difference in the prevalence rate of amblyopia between the groups'.⁸ This interpretation has to be read carefully, however, because the study was aimed at examining whether adding a supplementary test would change prevalence. One must also take into account that Sweden provides universal visual screening of children at age four.
Bray et al., 1996 ^{9*}	<ul style="list-style-type: none"> • Description: Comparison of three cohorts of children residing in three different areas with different preschool vision screening programs. Only one cohort received orthoptic screening; in the other two groups, screening was conducted by other personnel. Outcome was presence of vision defects at age 7 years. • Findings: Although many more cases of amblyopia were detected in the cohort screened by an orthoptist, the overall amblyopia prevalence at age 7 years was similar in each cohort. • Amblyopia definition: 6/9 or worse on Snellen chart. • Critique: Ecologic study. Lack of effects on the prevalence rate of amblyopia using an 'intention to screen' approach.

* Cited in systematic review by Schmucker et al.⁵

† Initially considered and then excluded from systematic review by Powell et al.¹¹

ly discussed in the literature.⁸ Open comments often accompanied the replies. We then compiled all replies and matched the answers with the optometric coverage for each jurisdiction, which was available through the Canadian Association of Optometrists.

RESULTS

Principles for screening and amblyopia

Two detailed reviews provide evidence that amblyopia fulfills the criteria for screening.^{13,14} Table 2 summarizes the key characteristics of amblyopia and how the condition meets major criteria for screening.

EBPH evidentiary review of amblyopia screening studies

In Table 3, we summarize the design and key findings of the five public health intervention studies initially considered in two systematic

reviews^{5,11} that found no studies met inclusion criteria for effectiveness analysis. Despite study design flaws, particularly the lack of randomization, an EBPH approach would suggest that the best available evidence is in favour of preschool screening for amblyopia.

Public Health provision of vision screening in Canadian provinces and territories

Through our survey, we ascertained the status of preschool vision screening programs for the 13 Canadian jurisdictions (Table 4). We found that 7 jurisdictions in Canada have a public health vision screening program and 6 do not. Provinces that reported not having screening were Quebec, Ontario, Saskatchewan, Nunavut and Alberta. Manitoba reported that vision screening was a voluntary program for school divisions and was therefore classified as not having a provincial program. We did not ascertain if other subprovincial juris-

Table 4. Public Health-operated Preschool Vision Screening and Optometry Coverage in Canadian Provinces/Territories

Province	Screening	Optometric Coverage for Children*
Alberta	No	Yes
British Columbia	Yes	Yes
Nova Scotia	Yes	Yes
Northwest Territories	Yes	Yes (Note: No optometrists practice in this territory)
Prince Edward Island	Yes	No
Yukon	Yes	Yes
Newfoundland and Labrador	Yes	No
New Brunswick	Yes	No
Ontario	No	Yes
Manitoba	No	Yes
Quebec	No	Yes
Saskatchewan	No	Yes
Nunavut	No	Yes (Note: No optometrists practice in this territory)

* Source: Canadian Association of Optometrists.

Table 5. Characteristics of Programs in Provinces Where Preschool Vision Screening is Offered

Province	Details
British Columbia	<ul style="list-style-type: none"> • Test: Automated vision screening, stereopsis. A few health units use VA • Age: In 2008, began piloting screening with 3 year olds. Intend to transition to a universal 3-year-old screening and discontinue kindergarten screening once universal 3-year-old coverage is met • Personnel: Public health nurses, health unit aides, trained screeners, trained First Nations community health staff
Nova Scotia	<ul style="list-style-type: none"> • Test: VA, stereopsis • Age: Preschool children, approximately 4.5 to 5 years of age (a few areas offer screening to slightly younger children, but the youngest would be 3.5 years) • Personnel: Public health practitioners (LPNs and nurses)
Northwest Territories	<ul style="list-style-type: none"> • Test: VA • Age: Preschool children • Personnel: Public health nurses
Prince Edward Island	<ul style="list-style-type: none"> • Test: Comprehensive Vision Health History – Parent-completed questionnaire (when child is 4 months old, or any age if this has not been done before); Brief Vision Health History*; external inspection (external eye and surrounding structures)*; pupillary examination/light response; observation for alignment (to identify constant strabismus)*; corneal light reflex; Cover Uncover Test (near and distant); distance visual acuity*; stereopsis • Age: 4 years and *Grade Four in our School Health Program • Personnel: Public health nurses
Yukon	<ul style="list-style-type: none"> • Test: Eye motility, VA and stereopsis • Age: Pre-Kindergarten • Personnel: Public health nurses and primary health care nurses (RNs working in an expanded role) depending on the community
Newfoundland and Labrador	<ul style="list-style-type: none"> • Test: Eye alignment and motility, VA • Age: Between 3 years 9 months and 4 years 4 months • Personnel: Public health nurses
New Brunswick	<ul style="list-style-type: none"> • Test: Visual inspection of the eye, VA and stereopsis • Age: 3.5 year olds • Personnel: Public health nurses

dictions offered screening if the program was not provincially mandated.

Some of the jurisdictions where screening is not offered reported that their local associations of optometrists, in partnership with schools, ran a program aimed at creating awareness among parents and advocating for a visual assessment for children of kindergarten age. For at least one jurisdiction, the local Public Health screening program was discontinued as a consequence of this campaign, as parents were encouraged to take advantage of the annual free optometry exam offered in the province. We then determined the relationship between Public Health screening and optometric coverage in each province and territory (Table 4).

In jurisdictions where preschool vision screening is offered, VA testing is preferred and focuses on children between 3 and 5 years of age. Other screening tests mentioned were stereopsis and eye alignment for strabismus. Personnel administering the test are mainly public health nurses but other trained personnel were also deployed. Programs appear to operate within best practice guidelines.⁸ Further details are presented in Table 5.

DISCUSSION

Amblyopia screening has been deemed lacking in evidence of effectiveness using EBM methodology because trials have not been conducted that demonstrate a beneficial effect. Due to ethical concerns, it is unlikely that randomized trials will ever be con-

ducted.⁵ Therefore, a decision not to screen – as is the case in six Canadian jurisdictions, including the two most populous provinces – raises concerns about missed amblyopia detection and subsequent visual disability. The ground may be set for a natural experiment evaluation; however, there is no surveillance system for the monitoring of visual outcomes in childhood.

Here we reaffirm that amblyopia fulfills the screening criteria. The burden of disease is not limited to a decreased VA, which has been described as the ‘tip of the iceberg’.¹⁵ Children are usually asymptomatic and the degree of vision loss increases the longer the condition remains undiagnosed.¹⁶ Most importantly, early detection and treatment of amblyopia are essential because the success of the treatment mainly depends on the age at which treatment is initiated.¹⁷

An EBPH approach would suggest that the best available evidence favours universal screening for amblyopia. Guidelines from pediatric and ophthalmologic societies agree that visual acuity should be tested in children 3 to 5 years of age¹⁸⁻²⁰ and Canadian vision care providers support and have interest in the development of screening programs.²¹ However, there remains the issue of the lack of rigorous evidence from randomized controlled trials.

The precautionary principle has been used to assist public health decision-making where there is uncertainty.²² The principle is against delaying a potentially useful intervention while waiting for evidence to support such an intervention, especially when poten-

tial adverse health outcomes might result. A precautionary approach to amblyopia screening would therefore take into consideration whether its goal – prevention of a lifelong visual impairment – is sufficiently important to accept the degree of uncertainty with regard to the ‘risks of doing nothing’ or the risks of other alternatives.²³

In Canada, there is a Public Health divide with respect to amblyopia prevention, with some jurisdictions offering screening and others not. Screening is offered in all four provinces where children’s optometric exams are not covered, and in some with funded optometric coverage. Amblyopia screening and the optometric exam are not mutually exclusive; in fact, children who screen positive need referral to an optometrist or ophthalmologist.

It is important to distinguish among three related but very different approaches to amblyopia prevention: opportunistic vision screening by physicians; universal screening; and the comprehensive eye exam by an eye professional. Preschool vision testing by physicians at well-child visits is a discretionary practice and the literature shows lack of compliance with vision testing by doctors.²⁴ In addition, physicians must be familiar with vision testing requirements for preliterate children. This practice also relies on parents to bring their children for a check-up at the age that is appropriate for amblyopia screening. Universal screening, on the other hand, is administered by Public Health and implies a systematic population-based approach where all children are reached. Once identified, individuals suspected of having VA difficulties are referred for confirmation by an eye care professional (usually an ophthalmologist or optometrist); the latter will then perform the comprehensive exam, which is the ultimate diagnostic or ‘gold standard’ test. The purpose of universal screening is to identify those children who are more likely to have amblyopia and refer them for further testing to confirm or rule out the condition. The more expensive, time-consuming diagnostic examination is therefore spared for those who screen positive.

Several concerns arise with regard to Public Health defaulting responsibility of amblyopia screening to optometrists through a comprehensive eye exam system. After intensive pilot implementation campaigns, the optometry exam showed an uptake in Alberta of only 45%,²⁵ and in Saskatchewan²⁶ of 63.7%, among whom 51% had received an eye exam previously. In addition, 70% of children examined in the Saskatchewan pilot were diagnosed with vision problems; as this would far exceed amblyopia prevalence, the implication is that the examination either has high false positive rates for amblyopia or is looking for conditions such as regular refractive problems that would not meet public health criteria for screening. Concerns about over-diagnosis leading to unnecessary treatment have been raised in the literature,²⁷ and the Canadian Pediatric Society states that “routine comprehensive professional eye examinations of healthy children with no risk factors have no proven benefit”.¹⁸ Moreover, evidence fails to support the comprehensive eye exam for every child.²⁷

The suboptimal uptake of the comprehensive eye exam programs has the potential to increase health disparities. Risk factors for amblyopia are closely linked with socio-economic status (Table 2); this has important public health implications in terms of equity and justifies a universal rather than a voluntary approach for screening.

Even when Public Health delegates the task of screening for amblyopia, it remains responsible for ensuring that whoever is

accountable for screening is actually doing it. Surveillance systems are required for the collection of epidemiological data on the incidence and prevalence of diseases that would have important implications for Public Health.

In summary, we have revisited the evidence on amblyopia screening with an EBPH perspective in order to set the grounds for a discussion on whether Public Health’s involvement in screening in Canada is justified. The characteristics of amblyopia make it a suitable case for screening despite the absence of randomized controlled trial evidence. There is a Public Health divide in amblyopia screening practice in Canada; while some provinces maintain organized programs, others have chosen to delegate the task to other well-meaning professionals, without a concurrent surveillance function. We conclude that amblyopia deserves attention from Public Health: efforts should be made to maintain existing programs; and provinces without organized screening programs should reconsider their role in the prevention of amblyopia. We acknowledge the need for additional population-based research in order to establish the utility of preschool vision screening in general,⁵ and particularly in the Canadian context.⁸

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RÉSUMÉ

Objectifs : Dans les lignes directrices sur les pratiques exemplaires, on recommande de tester la vision des enfants de trois à cinq ans pour prévenir l'amblyopie, mais le dépistage visuel universel est controversé. Au Canada, le dépistage de l'amblyopie peut incomber aux médecins, aux optométristes et/ou à la santé publique. Nous examinons les preuves à l'appui du dépistage visuel préscolaire pour l'amblyopie selon une démarche de santé publique fondée sur des preuves (SPFP), et nous examinons les répercussions de la prestation par la santé publique de programmes de dépistage universels de l'amblyopie dans les provinces et les territoires canadiens à la lumière des pratiques actuelles.

Méthode : Pour appuyer le dépistage visuel de l'amblyopie auprès des enfants d'âge préscolaire, nous avons examiné la documentation afin d'aborder chaque grand critère de dépistage (maladie, test, traitement, exigences de programme). Nous avons aussi réévalué des articles, cités dans deux examens systématiques, portant sur l'effet du dépistage visuel. Nous avons envoyé au médecin-hygiéniste en chef de chaque province et territoire un bref questionnaire lui demandant s'il y avait actuellement un programme de santé publique sur le dépistage visuel auprès des enfants d'âge préscolaire et, si oui, de nous fournir des détails à ce sujet.

Résultats : L'examen de la documentation sur les critères de dépistage selon une démarche de SPFP, ainsi que les études d'intervention disponibles, appuient le dépistage de l'amblyopie par la santé publique. Les milieux de la santé publique au Canada sont divisés quant aux pratiques de dépistage de l'amblyopie; certaines provinces ont des programmes structurés, tandis que d'autres choisissent de déléguer la tâche à d'autres professionnels sans avoir prévu une fonction parallèle pour surveiller les disparités dans la participation au dépistage.

Conclusion : L'amblyopie mérite l'attention de la santé publique. Il faudrait faire des efforts pour maintenir les programmes existants, et les provinces sans programme de dépistage structuré devraient réévaluer leur rôle dans la prévention des iniquités en ce qui a trait à la cécité évitable chez les enfants canadiens.

Mots clés : amblyopie; dépistage visuel; enfants; santé publique; éléments probants; principe de précaution