Visual Screening of Children in Kindergarten

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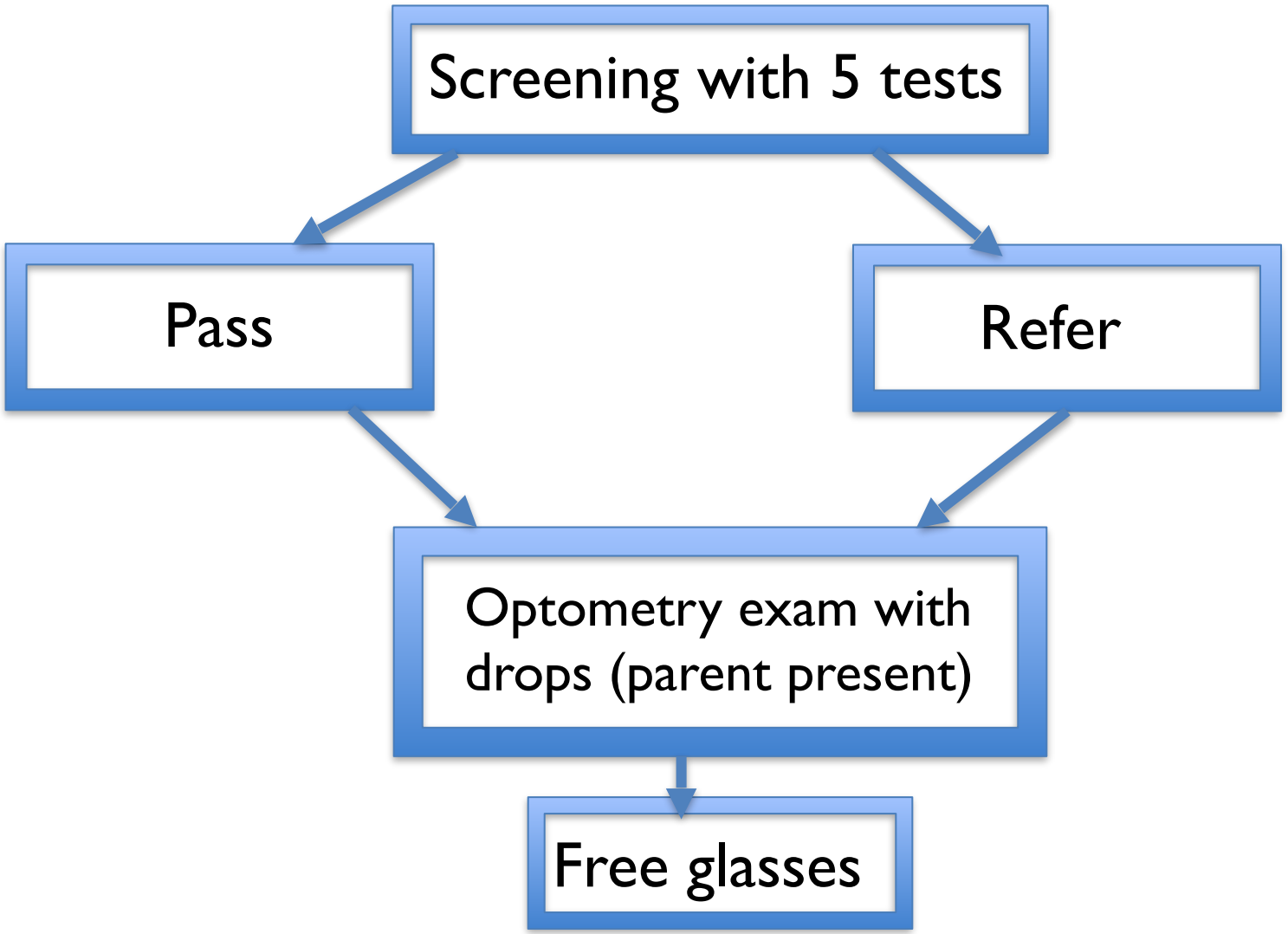
Age 3-6

- Amblyopia (lazy eye): 2-8%
  - Treatment most effective < 8 years
- Refractive errors: 10-20%
  - Impacts reading & IQ
- Parents do not take children to optometrists
  - 80% missed "free exam and glasses" kindergarten program

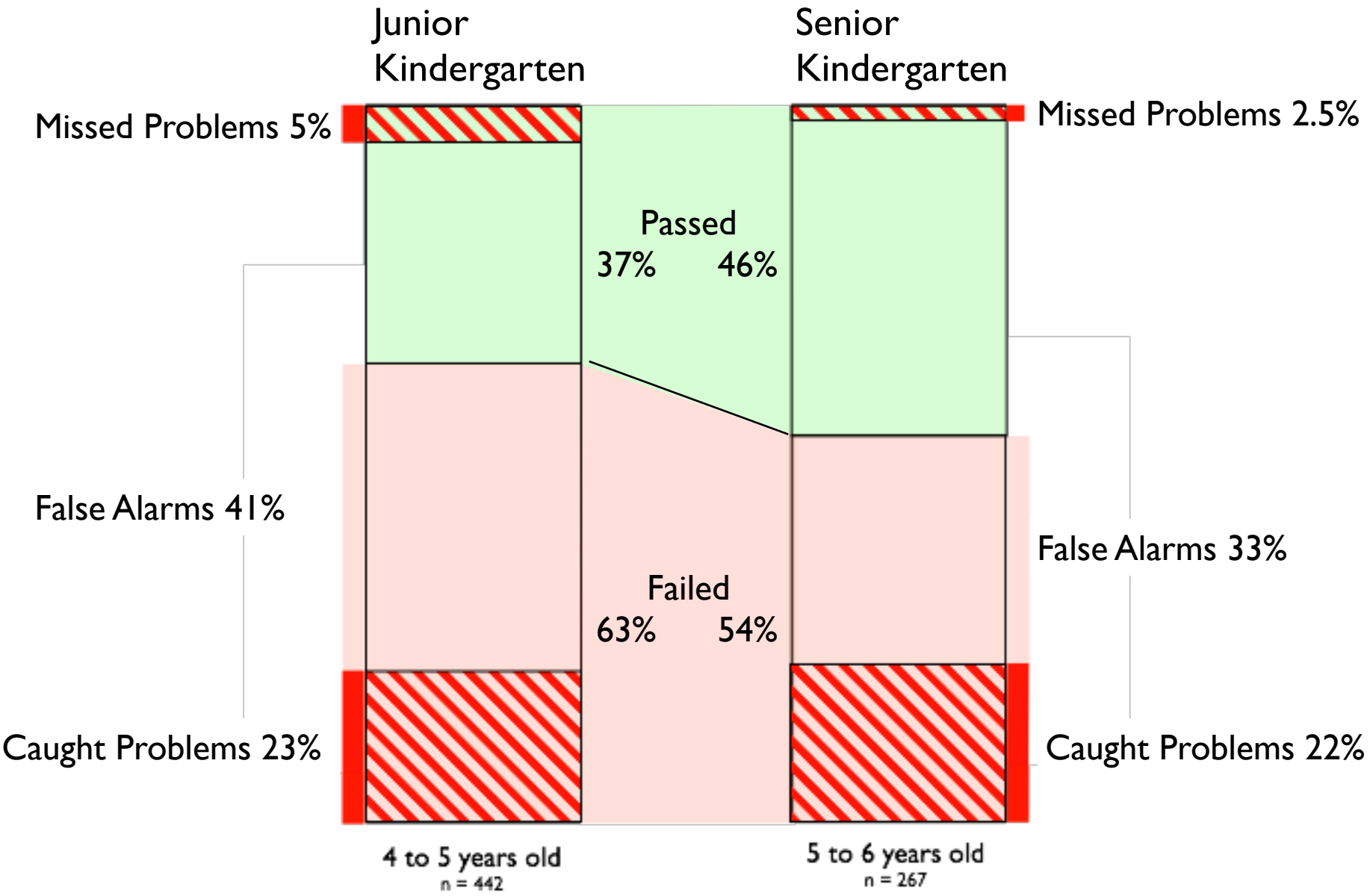
VIP (2014); MEPDS (2008, 2013); Baltimore PEDS (2009); Drover et al. (2008); VIP (2003; 2013); MEPDS (2013)

A Possible Solution: School-Based Program



N = 709

Screening more accurate at age 5-6



Effectiveness

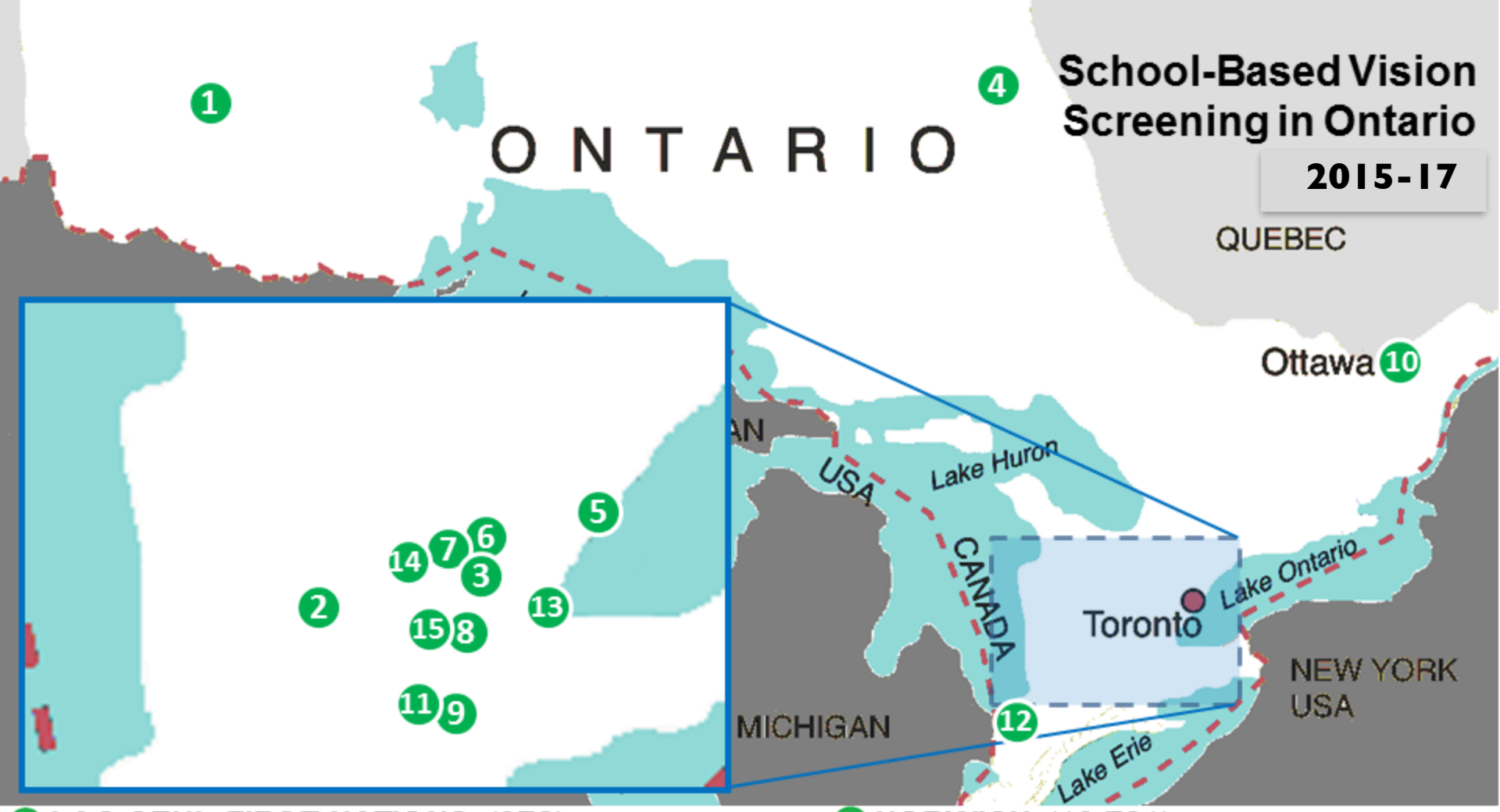
- 26.5% had a visual problem
- Sensitivity 89% (SK)
- Specificity 57% (SK)

- School-based screening can identify children with visual problems

Does it make a difference in the "real world"?

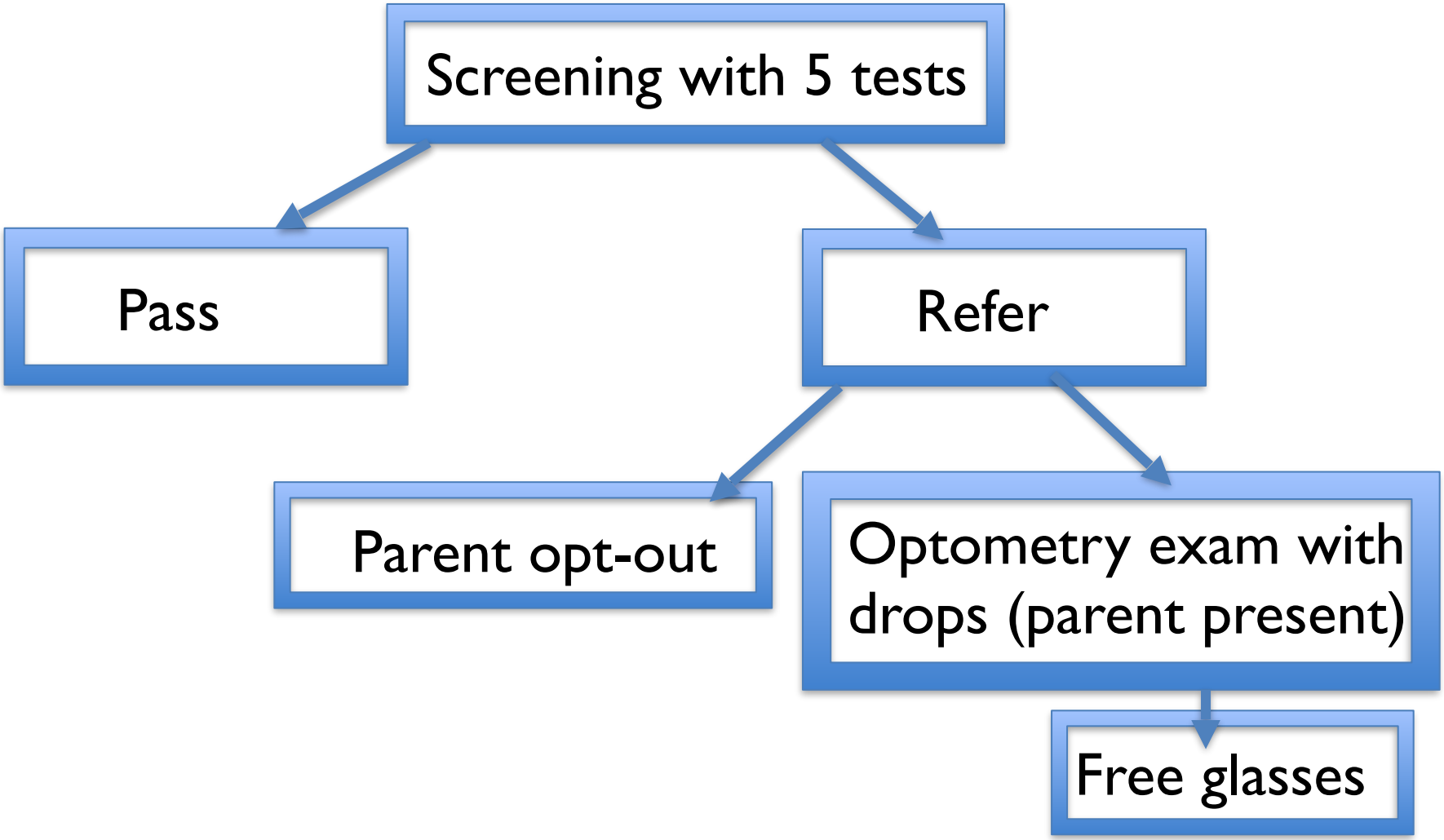
School-Based Vision Screening in Ontario

2015-17



1. **LAC SEUL FIRST NATIONS** (872)
2. **WELLESLEY** (10,713)
3. **GUELPH** (121,688)
4. **KIRKLAND LAKE** (8,493)
5. **TORONTO** (6,054,191)
6. **ERAMOSA** (8,511)
7. **ROCKWOOD** (3,869)
8. **CAMBRIDGE** (126,748)
9. **NORWICH** (10,721)
10. **OTTAWA** (883,391)
11. **WOODSTOCK** (37,754)
12. **SARNIA** (89,555)
13. **HAMILTON** (519,950)
14. **FERGUS** (19,126)
15. **KITCHENER** (219,153)

(Population)



43 schools, 4811 children

90%

7%

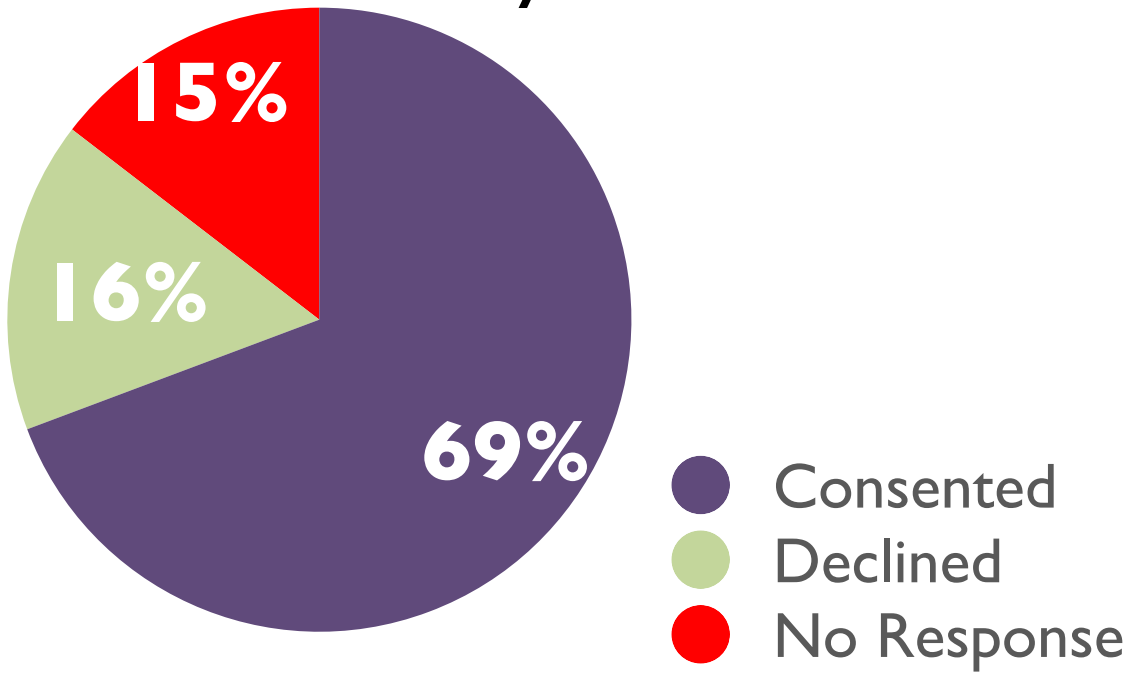
2%

What did you think?

N = 322

Real-World Effectiveness

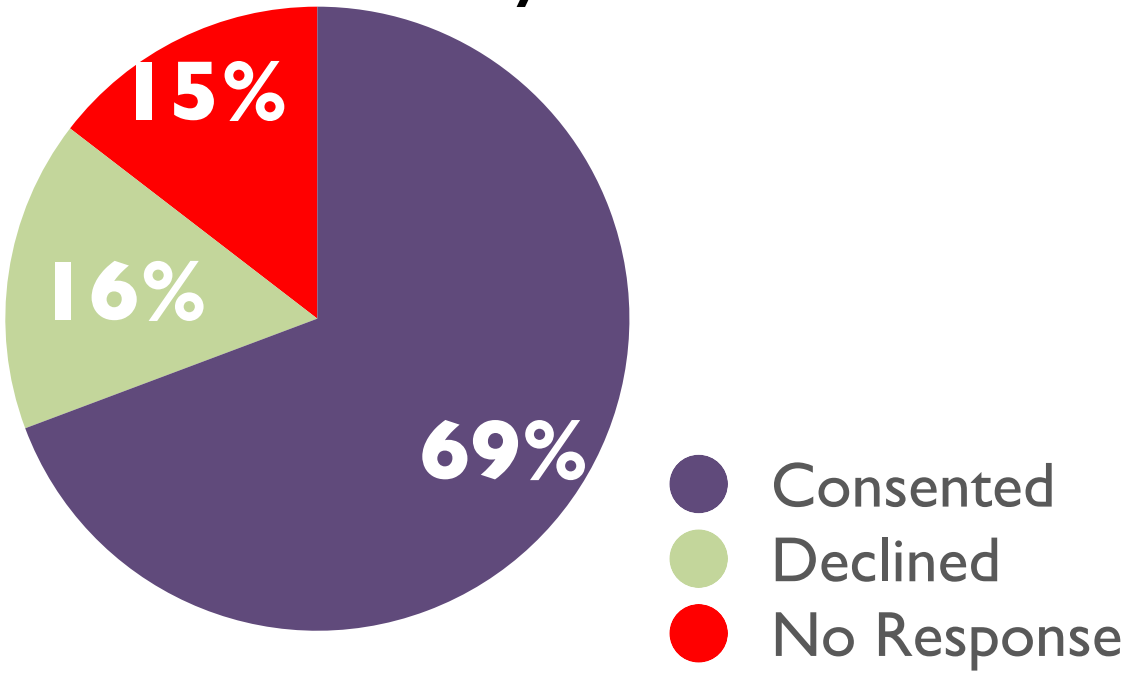
- 55% referred for eye exam



- #1 reason for opting out "already under care"
- For 67%, first eye exam

Real-World Effectiveness

- 55% referred for eye exam



- 11% of screened children discovered to have visual problem

Does screening make a difference?

	Children Enrolled	September Glasses	June Glasses
Our Program	**661**	**14 (2%)**	**56 (10%)**
No Program	**581**	**15 (2%)**	**20 (3%)**

More children wearing glasses in June where program was offered.

No Program schools received the program the following year

Screening can make a difference.

Optimal Screening Program

- Training
- Effective tools: visual acuity, stereoacuity, autorefractor
- Treatment: access to optometry care and glasses at no cost to parents
- Follow-up: integration with schools

Acknowledgements

Funding:

- Canadian Institutes of Health Research
- Natural Science and Engineering Research Council
- Prevent Blindness Foundation
- McMaster University's Arts Research Board
- Private donors

Unpaid collaborators:

- Ontario Association of Optometrists
- Gift of Sight and Sound of the Toronto Foundation for Student Success
- Public Health Units in Sarnia, Oxford County, and Timiskaming
- Many Lions Clubs
- Medical students at the University of Ottawa (iScreen)

Ministry tools

Crowded acuity (HOTV)
Refer if worse than 20/32 in either eye

Randot® Preschool Stereoacuity Test
Refer if worse than 60 arcsec

Autorefractor

Spot (Welch Allyn)

Plusoptix S12