Effectiveness of an Eye Care Provider Led Community-based Screening

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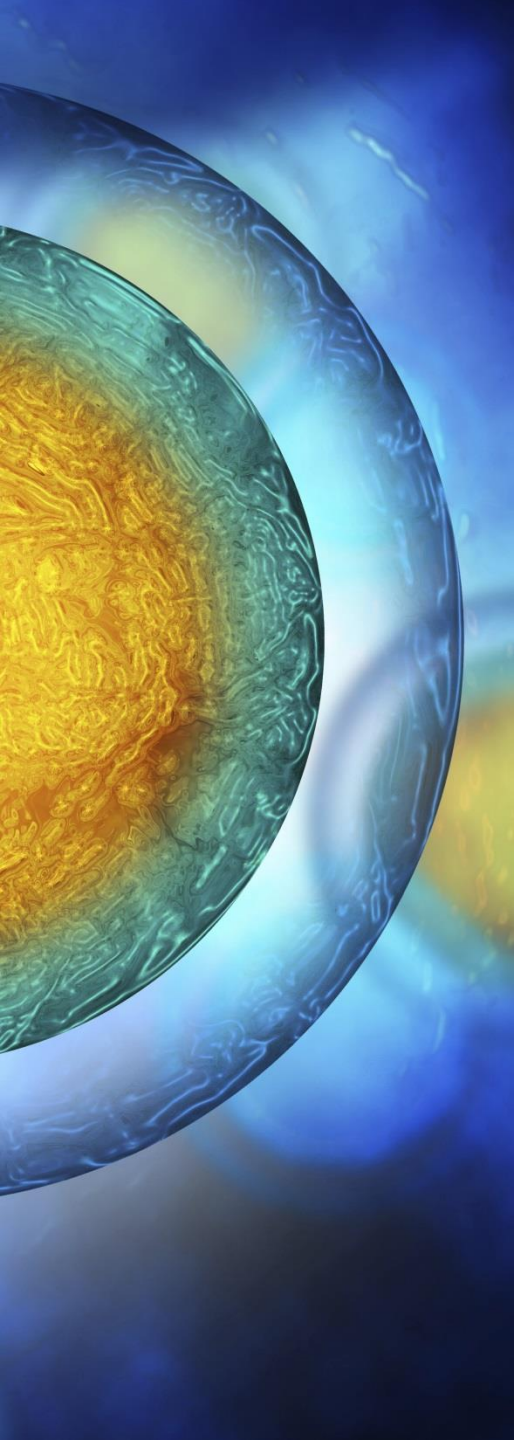
Outline

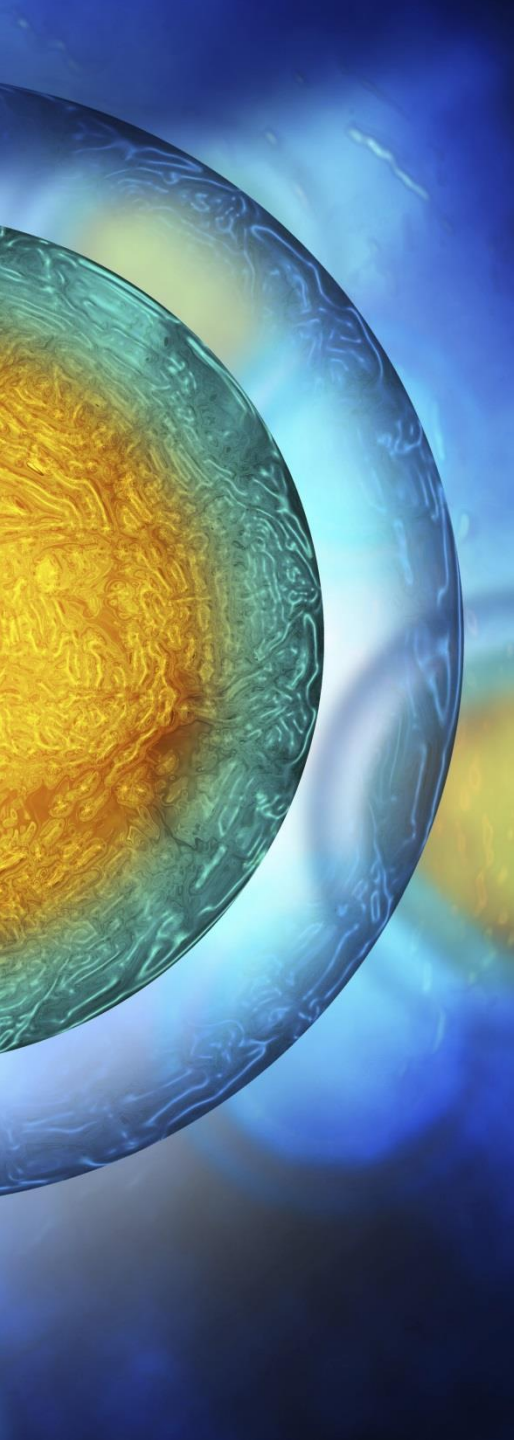
1. What is the health problem?
2. What is the proposed solution?
3. How do we evaluate the proposed solution?



What is the need for vision health (and outreach programs)?

- Vision is fundamental to the human experience and influences every aspect of life
- 20.6 million American adults experience visual loss – which can be treatable or preventable[1]
- Prevalence of blindness is expected to double by 2050[2,3]
- Accessing eye health care is a significant issue in Oregon and nationally

1. Blackwell, D.L., Lucas, J.W., & Clarke, T.C. (2014). Summary health statistics for U.S. adults: National Health Interview Survey, 2012. National Center for Health Statistics. Vital Health Stat 10(260)."
2. Varma R, Vajaranant TS, Burkemper B, et al. Visual Impairment and Blindness in Adults in the United States: Demographic and Geographic Variations From 2015 to 2050. JAMA Ophthalmol. 2016;134(7):802-809.
3. *Vision Problems in the U.S.* Washington D.C.: Prevent Blindness America: Washington DC;2012.



- No vision screening programs being broadly implemented – in spite of data showing 50% of sight threatening eye disease in the U.S. is undiagnosed[3]

- Currently, major federal health reports, USPSTF & NASEM conclude that data is not available to prove the value of vision screening (to improve vision health)[1-3]

1. USPSTF. (2014). Final Recommendation Statement: Impaired Visual Acuity in Older Adults: Screening.
2. USPSTF. (2013). Third Annual Report to Congress on High-Priority Evidence Gaps for Clinical Preventive Services.
3. National Academies of Sciences, E., Medicine, Health, Medicine, D., Board on Population, H., Public Health, P., . . . Promote Eye, H. (2016). The National Academies Collection: Reports funded by National Institutes of Health. In A. Welp, R. B. Woodbury, M. A. McCoy, & S. M. Teutsch (Eds.), *Making Eye Health a Population Health Imperative: Vision for Tomorrow*. Washington (DC): National Academies Press (US) Copyright 2016 by the National Academy of Sciences. All rights reserved.

Vision screening

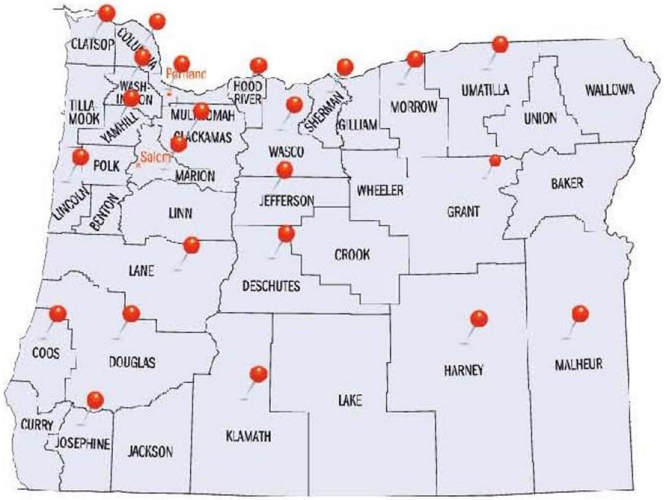
- Most use paraprofessionals and a complex referral algorithm
- Outcome data report[1-4]:
  - Referral rates (40% - 60% of all screened)
  - Of those referred only, 43% -50% completed definitive exams
  - Of those who received exams only 50% had medical findings

1. Friedman, D. S., Cassard, S. D., Williams, S. K., Baldonado, K., O'Brien, R. W., & Gower, E. W. (2013). Outcomes of a vision screening program for underserved populations in the United States. *Ophthalmic Epidemiol, 20*(4), 201-211. doi:10.3109/09286586.2013.789533
2. Kopplin, L. J., & Mansberger, S. L. (2015). Predictive value of screening tests for visually significant eye disease. *Am J Ophthalmol, 160*(3), 538-546.e533. doi:10.1016/j.ajo.2015.05.033
3. Quigley, H. A., Park, C. K., Tracey, P. A., & Pollack, I. P. (2002). Community screening for eye disease by laypersons: the Hoffberger program. *Am J Ophthalmol, 133*(3), 386-392.
4. Zhao, D., Guallar, E., Gajwani, P., Swenor, B., Crews, J., Saaddine, J., . . . Friedman, D. S. (2017). Optimizing Glaucoma Screening in High-Risk Population: Design and 1-Year Findings of the Screening to Prevent (SToP) Glaucoma Study. *Am J Ophthalmol, 180*, 18-28. doi:10.1016/j.ajo.2017.05.017

How do we address in Oregon?

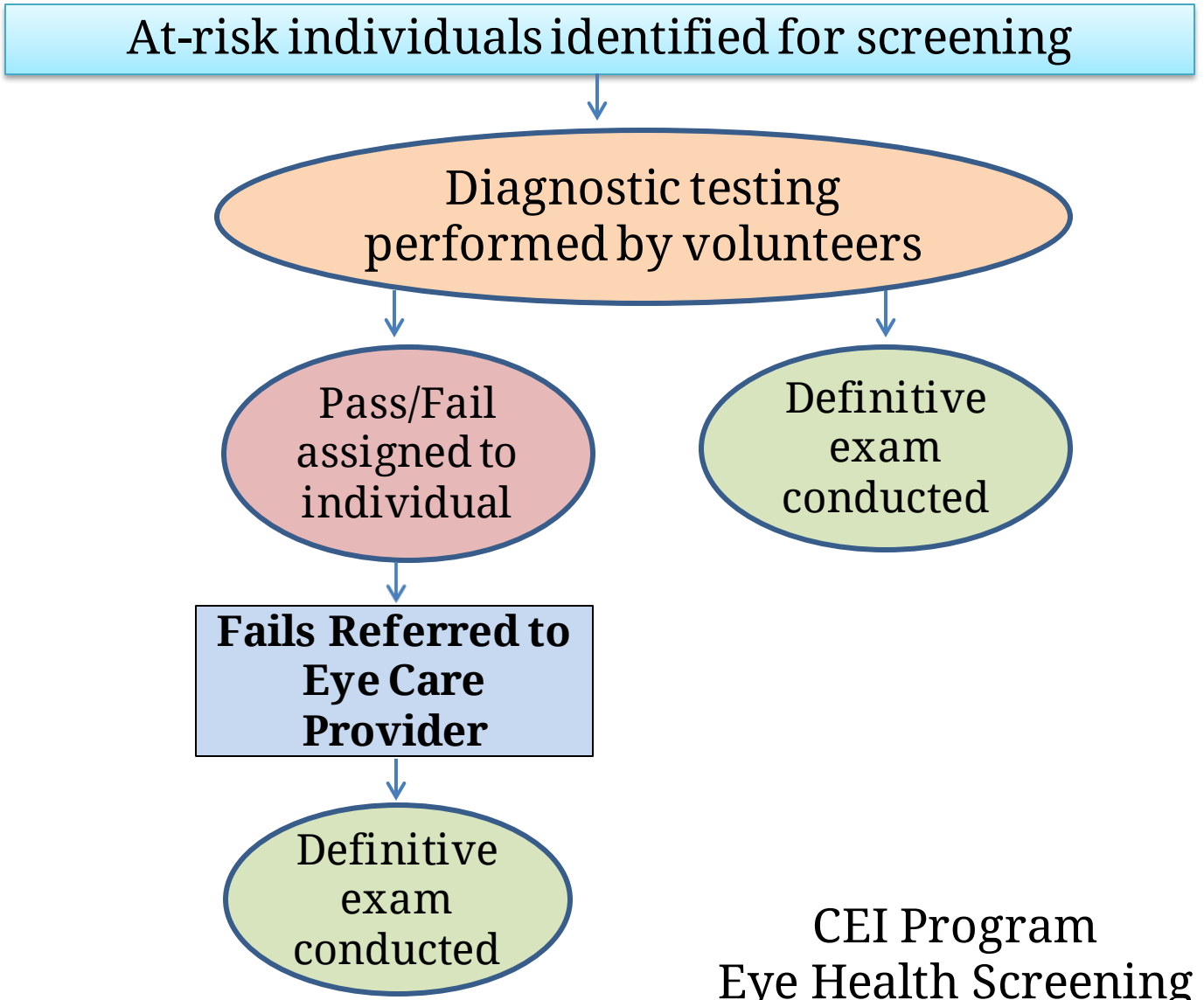
Casey Eye Institute (CEI) Adult Outreach Program

- partners with community organizations
- provide free eye screening for the uninsured and underinsured
- to detect eye disease by utilizing an onsite Eye Care Provider.



CEI Outreach Van Counties Served

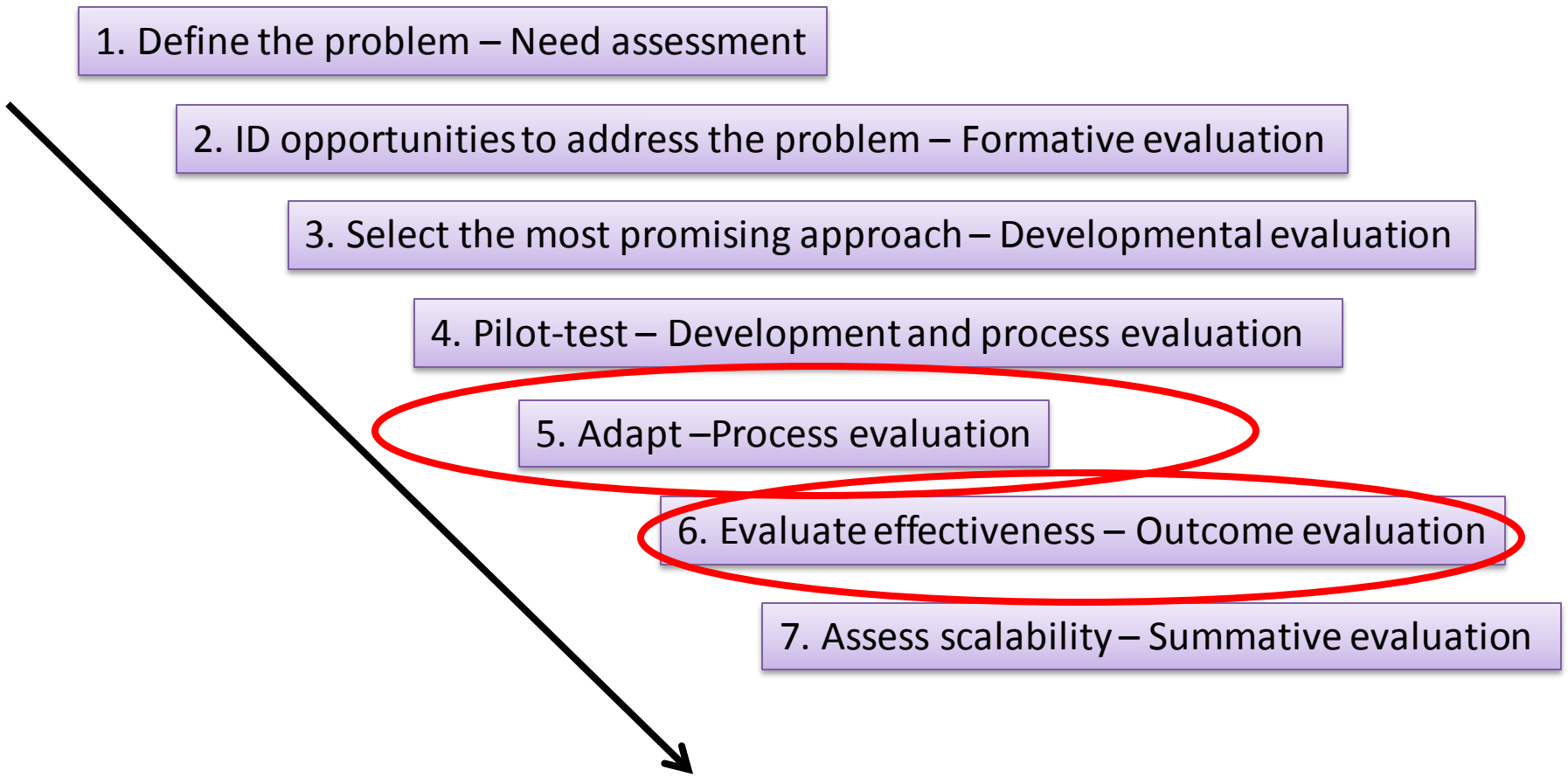
Eye Health Screening Programs



Traditional Eye Health Screening Program

CEI Program
Eye Health Screening Program Utilizing On-site Eye Care Provider

How do we evaluate?



Conduct process evaluation to continually monitor and assess the development and implementation of a program

How can we demonstrate that the program reached its goals and objectives?

1. Demonstrate that we are reaching a **diverse set of participants** in need
2. Identify **eye disease and refractive error**
3. Evaluate the follow-up rate with the **referral process** to eye care providers
4. Identify **access barriers** to act on the referral process

Collect essential demographics

Participants provide consent and key demographic and risk factor data

- Gender, Ethnicity, Household income, Geographic location, Education
- Health history such as diabetes and hypertension
- Time since last exam

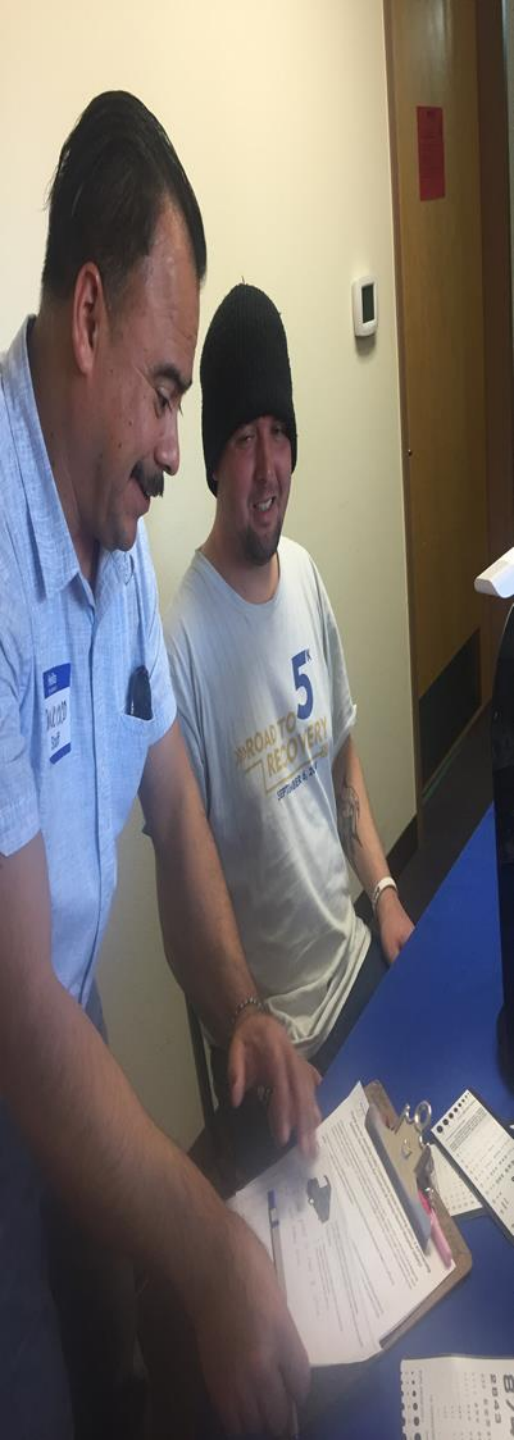
The process is well accepted by participants as part of a health program

Indicator of successful diverse set of participants

Comparison of the racial and ethnic distribution within the population seen by the CEIO program versus the general population of Oregon*

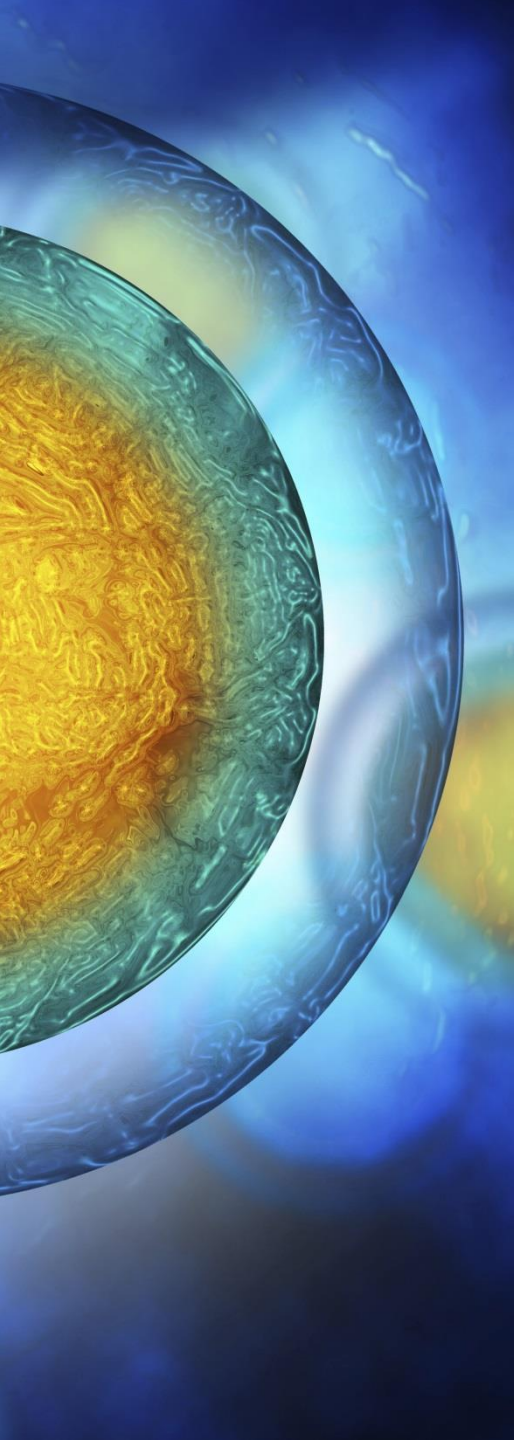
Race/Ethnicity	n	%	General population (%)
Hispanic/Latino	1783	40.9	12.5
White Non-Hispanic	1520	34.9	87.9
American Indian/Alaska Native	431	9.9	1.8
Asian	167	3.8	4.3
Black Non-Hispanic	158	3.6	2.0
Native Hawaiian and other Pacific Islander	35	.8	0.4
Other/Mixed	85	1.9	3.6
Unknown/Not reporting	432	9.9	

*Oregon data accessed from US Census Bureau, 2016

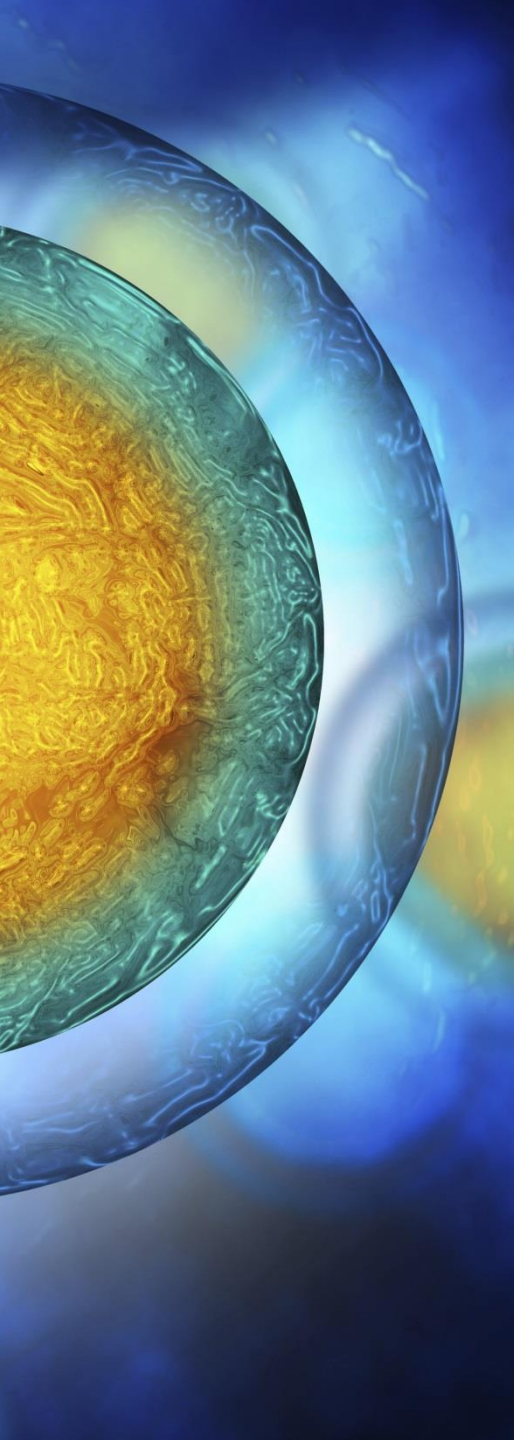


Detection of untreated eye disease and refractions

- Refractive error 50.9%
- Glaucoma 9.0 %
- Dry eye/blepharitis 8 %
- Diabetic retinopathy 5.4%
- Visually significant cataract 4.5%
- Age-related macular degeneration 1.8%



- Most Frequent Referrals
  - Glaucoma (7.2% of total visits)
  - Visually significant cataract (4.1%)
  - Diabetic Retinopathy (2.2%)
  - Macular degeneration (0.3%)
  - CEI Outreach program addressed vision health needs for 78.8% of participants on the day of screening



Key Indicator - referral uptake for further care

- Three to six months after initial screening, telephone interviews are conducted to assess compliance and barriers with referral.
  - Proportion of referred participants that see a clinical provider
  - Proportion of referred participants have an appointment scheduled with an eye care provider
  - Proportion of referred participants that did not follow
  - Identification of barriers to eye care access –

Those referred for further care

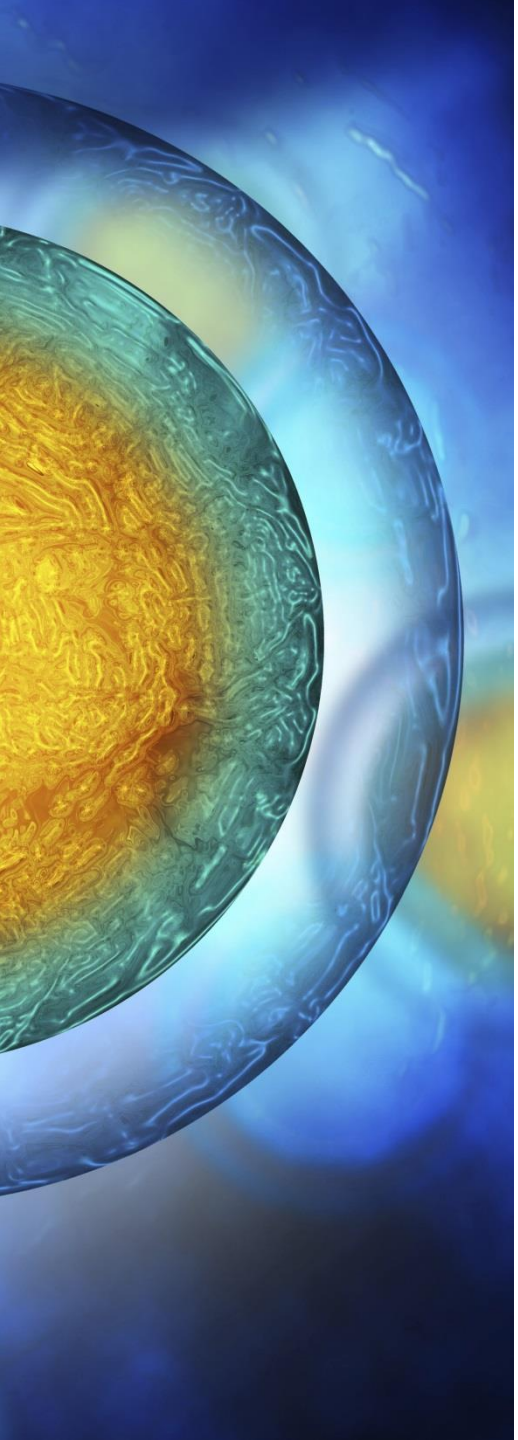
Race/Ethnicity	%
White Non-Hispanic	38
American Indian/Alaska Native	22.8
Hispanic/Latino	20.7
Black Non-Hispanic	9.8
Native Hawaiian/Pacific Islander	8.7
Asian	3.3
Other/Mixed	1.1
Decline to answer	2.2
Level of education	%
None	2.2
Some grammar school	15.4
High School degree	36.3
Some College	33
Bachelor Degree	7.7
Advanced Degree	5.5

Those referred for further care

Household Income Level	%
< $10,000	32.5
$10,000 - $19,999	28.9
$20,000 - $29,999	14.5
$30,000 - $39,999	10.8
$40,000 - $49,999	4.8
> $50,000	1.2
Urban/Rural	
Urban	57.1
Rural	42.9

Preliminary results

- 150 respondents
- 42% of referred participants followed-up on their referral
- 8% of referred participants have an appointment scheduled with an eye care provider
- 50% of referred participants did not follow through with referral



Identification of most important barriers affecting the referral process

- You couldn't afford it - 27%
- You didn't understand that a referral was recommended – 17%
- The eye doctor is too far away – 13%
- No time – 10%

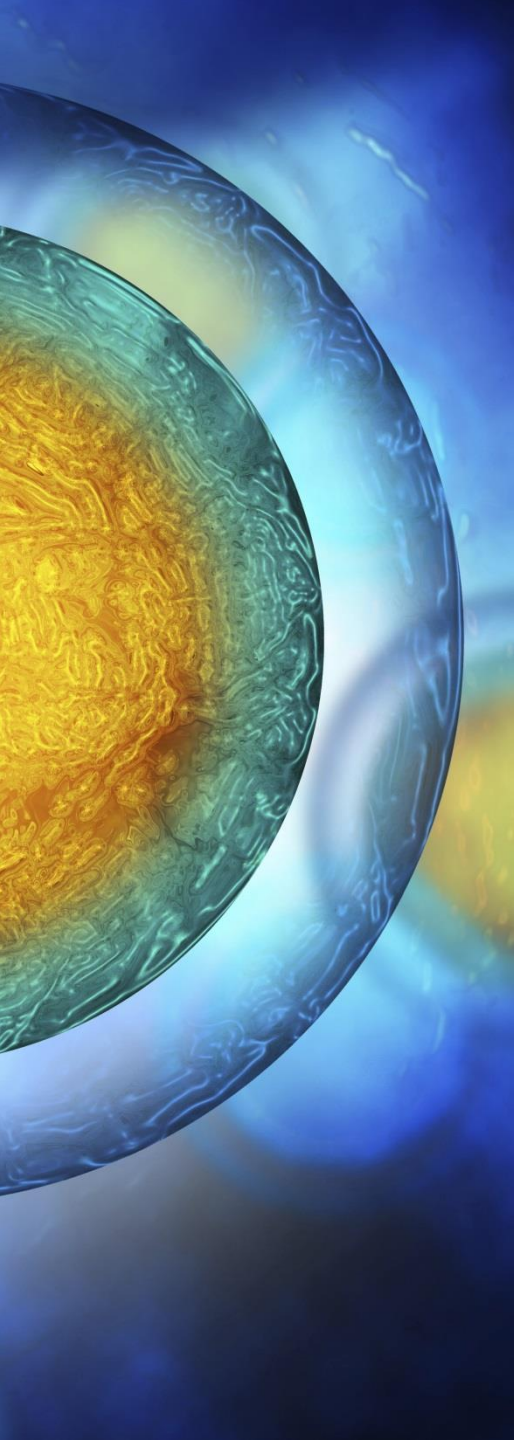
Insurance status of those referred

	General Insurance status	
		%
Medicaid		37.6
Medicare		20.4
I.H.S.		12.9
Private		8.6
VA		1.1
No insurance		18.3
other		1.1

- 43% percent of participants reported that they didn't know their if medical insurance covers eye health exams
- Of those, 95% said they would be more likely to see an eye doctor if their insurance would pay for it

Conclusions:

- CEI is reaching their diverse populations
- CEI is identifying undetected vision threatening eye disease
- CEI is addresses eye health needs for most (78.8%) of its participants day of event
- 99% of participants are completing definitive exams



Conclusions:

- 50% of participants are complying with follow up recommendations
- Opportunities to strengthen participants knowledge of insurance coverage of eye health exams may increase referral uptake (if it is an allowable expense)
- Opportunities to increase participant uptake of follow up needs to be determined with community partner input as many did not understand they were to go for follow up care

Acknowledgements

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