Vision Health Challenges and Access to Resources

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Community Outreach Mission:
• To eliminate preventable blindness in Oregon by providing a bridge between underserved members of the community and vision care.
What is preventable blindness?

- “Blindness which could be either treated or prevented by known, cost-effective means”
  - International Agency for the Prevention of Blindness

- 3 main conditions in United States
  - Diabetic Retinopathy
  - Glaucoma
  - Age-Related Macular Degeneration
Our Efforts Include:

• Casey Eye Institute Mobile Clinic

• Partnering to develop effective programs that address policy and access to eye care

• Training in vision screening among paraprofessionals across the state.
Objectives

• Describe the importance of vision health screening and preventive eye exam recommendations

• Describe barriers to accessing eye care

• Discuss the role of CHW's in addressing vision health
AAO Recommendations on Eye Exams

- Diabetics: Every year
- Patients without signs or risk factors for eye disease
  - Age 40-54: Exam every 2-4 years
  - Age 55-64: Exam every 1-3 years
  - Age 65+: Exam every 1-2 years
Anatomy of the Eye
More Anatomy

- Retina
- Choroid
- Ciliary body
- Cornea
- Iris
- Lens
- Aqueous
- Sclera
- Vitreous body
- Optic nerve
- Optic disc
Diabetic Retinopathy
Diabetic Retinopathy

- 28.5% Diabetic adults over age 40 in US, or 5.39% of population overall (7.6 million adults)

- Oregon: 5.2% prevalence, (95,203 adults over 40)

- Diabetic Retinopathy is the leading cause of new blindness in 20-74 year olds.

- Early detection and treatment can reduce the development of vision loss by 90%, yet less than 50% of diabetic patients receive annual diabetic retinopathy screening exams.

1. CDC. National diabetes fact sheet: national estimates and general information on diabetes and prediabetes in the United States  
2. AAO. Diabetic Retinopathy Preferred Practice Pattern Guidelines  
4.
Diabetic Retinopathy – A Closer Look

Normal Retina

Diabetic Retinopathy
Diabetic Retinopathy Management

- Glycemic control (Hb A1c)
- Diet/Exercise/Pharmacologic rx
- Diabetic macular edema/Proliferative retinopathy treatments:
  - VEGF injections (anti vascular endothelial growth factor.)
  - Laser treatment
- Vitrectomy for severe bleeding into the vitreous
Diabetic Retinopathy: PRP Treatment
When Do Diabetics Need an Eye Exam?

- Recent diabetes diagnosis
- Yearly Eye Exam
- Blurry Vision
- Difficulty controlling Blood Sugar
- High Blood Pressure
- Family Hx of Diabetes
Glaucoma

- Variant: Normal-tension glaucoma, high prevalence in Native American/Alaska Native population (2.6-7.8%)

- Risk Factors: Age, IOP (intraocular pressure), CCT (central corneal thickness), myopia, family history, diabetes

- Primary Open Angle Glaucoma (POAG), 2% US population over 40 (2.7 million adults).

- Many forms: generally divided: Open vs Closed-Angle

- Symptoms: typically asymptomatic, insidious onset
Diagnosis of Glaucoma

Normal optic nerve head

Glaucomatous cupping
Visual Fields

Normal Right Eye

Right Eye with Glaucoma
Glaucoma

Images from "Eye disease simulation, age related macular degeneration"
by National Eye Institute, National Institutes of Health
Age-Related Macular Degeneration (ARMD)

- Prevalence of 1.5-2.1% over age 52 in US (2 million adults)
- Oregon: 2.3% prevalence (29,932 adults over 50)
- Risk factors: Age, Cardiovascular disease, hypertension, dyslipidemia, obesity, Family history, hyperopia, smoking
ARMD Symptoms

Image courtesy of Nat. Eye Institute, Nat. Institutes of Health
Macular Degeneration

Images from "Eye disease simulation, age related macular degeneration"
by National Eye Institute, National Institutes of Health
Causes of blindness per ethnicity over 40 years old. (2007-2016)
Casey Mobile Outreach Impact

• 38% rural communities
• 40.9% Hispanic
• 34.9% Non-Hispanic White
• 9.9% American Indian/Alaska Native
• 3.8% Asian
• 3.6% Black
• 6.9% Unknown
Common Findings

- Refractive error 50.9%
- Normal exams 34.0%
- Glaucoma suspect 9.0%
- Dry eye/blepharitis 8%
- Diabetic retinopathy 5.4%

Most Frequent Referrals

- Glaucoma suspect 7.2%
- Visually significant cataract 4.1%
- Diabetic Retinopathy 2.2%
Preliminary results

• 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%
Conclusions:

• CEI is reaching their target population
• CEI is identifying undetected vision threatening eye disease
• CEI is addresses eye health needs for most (80%) of its participants day of event
• 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
• Opportunities to increase participant education on the importance of follow up need to be determined with community partner input.
• How big of a problem has lack of program evaluation been for vision health in the U.S.?

• Population vision health is left off of key health priorities (40 major goals by CDC), organized federal funding, etc. – in spite of very high priority by individuals (greatest fear, enormous impact on quality of life)

• Currently, major federal health reports, USPSTF & NASEM conclude no data to show value of vision screening to improve vision health\textsuperscript{1-3}

• No vision screening programs being broadly implemented – in spite of data showing 50% of sight threatening eye disease in the U.S. is undiagnosed\textsuperscript{3}

Recent programs, in spite of pedigree and federal funding, have been stymied because of earlier inadequate program evaluation re: referrals for definitive exams (and later clinical care) Case study: Stop glaucoma study – Johns Hopkins and CDC backed - took many years of lobbying to get funding

Evaluated: Visual acuity (VA), fundus imaging, visual field, and intraocular pressure.

Complex referral algorithm, a lot of investment

Yet, over referral rates (40% of all screened)  
Only 43% completed definitive exams

? How many made it to clinical care

? How much vision was saved in the long run


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Casey Outreach
-A Vision for the Community
Community Health Worker Training!

• Objectives:
  1. To better understand the prevalence and causes of preventable blindness and the social and environmental factors that increase the risk of blindness for Oregonians.
  2. Identify local, state and national resources that can provide assistance for under-insured individuals needing eye care.
  3. How to perform basic vision screenings to identify individuals who may benefit from seeing an eye care professional, including:
      – Distance vision testing
      – Near vision testing
      – Amsler Grid testing
      – Vision screening assessment form, educational handouts, and resources brochure
What do you think?
Thank You!

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