Expanding Diabetic Retinopathy Screening in Primary Care Clinics:

Program Introduction and Application Process

Presenters:
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Chief Medical Officer, PHC
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Clinic Outreach Director, UC Berkeley Digital Health
Anne Gulley, MPH
Project Coordinator
Webinar Instructions

To avoid echoes and feedback, we request that you use the telephone instead of your computer microphone for listening/talking during the webinar.
Webinar Instructions

- All participants have been muted to eliminate any possible noise interference/distraction.

- If you have a question or would like to share your comments during the webinar, please type your question in the “question” box or click on the “raised hand” icon.
Objectives

- Diabetic Retinopathy Screening *(Dr. Robert Moore)*
- About EyePACS *(Presented by Dr. Harry Green)*
- Program Overview
- Application Process
- Resources
- Q&A
Diabetic Retinopathy Screening

Why is Screening important?

• DR is the leading cause of blindness among working-age adults in the United States

• In 2008, 28.5% US adults age 40+ had DR (Zhang, et al., 2010)

• Up to 21% of people with Type 2 DM have retinopathy when they are first diagnosed with diabetes (Fong, et al., 2007)

• Early stages of the disease lack symptoms – when symptoms occur the disease already requires treatment
Early detection of Diabetic Retinopathy can significantly limit disease progression

Screening Options:

• Optometrist/Ophthalmologist (in-person visit)
• Telehealth exam using retinal camera and “store and forward” technology
Diabetic Retinopathy Treatment

Referral to Optometrist/Ophthalmologist

Role of the Provider

<table>
<thead>
<tr>
<th>Ophthalmologist</th>
<th>PCP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definitive Diagnosis</td>
<td>Patient Education</td>
</tr>
<tr>
<td>Dilated eye exam</td>
<td>Glycemic Control</td>
</tr>
<tr>
<td>Laser treatment</td>
<td>Control of Blood Pressure</td>
</tr>
<tr>
<td>Surgery</td>
<td>Medication Management</td>
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</table>
## Diabetic Eye Exam: 2015 HEDIS Performance

### PHC Regional Performance

<table>
<thead>
<tr>
<th>Region</th>
<th>Northeast</th>
<th>Northwest</th>
<th>Southeast</th>
<th>Southwest</th>
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<tbody>
<tr>
<td></td>
<td>34.79%</td>
<td>39.17%</td>
<td>54.15%</td>
<td>49.15%</td>
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</tbody>
</table>

### 2015 National NCQA Benchmarks

<table>
<thead>
<tr>
<th>Percentile</th>
<th>25th (MPL)</th>
<th>50th</th>
<th>75th</th>
<th>90th (HPL)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>46.25%</td>
<td>54.18%</td>
<td>63.14%</td>
<td>68.04%</td>
</tr>
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</table>

### CDC Eye Exam

<table>
<thead>
<tr>
<th>Source</th>
<th>Rate (%)</th>
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</thead>
<tbody>
<tr>
<td>COHS (2014)</td>
<td>61.40%</td>
</tr>
<tr>
<td>MANAGED MEDI-CAL (2014)</td>
<td>50.69%</td>
</tr>
<tr>
<td>PHC (2015)</td>
<td>44.32%</td>
</tr>
</tbody>
</table>
Annual Diabetic Eye Examinations in a Managed Medicaid Population (Hatef, et al., 2015)

- Diabetic eye exam compliance increased from 46% to 64% between 2010 - 2012

Factors that increased likelihood of compliance:
- Access to a non-mydriatic fundus camera in the primary care clinic
- Patient compliance with A1C testing
- Pay for performance incentives for providers
Diabetic Retinopathy Screening via Telemedicine

- Enables detection of early stages of Diabetic Retinopathy
- Education about diabetic blindness prevention and glycemic control
- Ability to streamline referrals to specialist
- Overcome access barriers
Preventing Diabetic Blindness: Telemedicine-based Diabetic Retinopathy Evaluation

Harry M. Green OD, PhD, FAAO
Director of Clinic Outreach
UC Berkeley Digital Health

optometry.berkeley.edu/digitalhealth.html
www.eyepacs.com
The Why

• Diabetic Retinopathy is the greatest cause of permanent blindness among working age adults in the US

• Compliance rates with annual retinal exam (from HEDIS measures) falls between 50-60%
  • Minimum for Medi-Cal managed care is around 43%

• Approximately 8% of diabetic patients in community and safety net clinics have sight-threatening retinopathy
  • Most are visually asymptomatic

• 90% preventable with timely detection and treatment
EyePACS Retinal Grading System

- Web-based telemedicine platform
- Lesion grading (pattern recognition) instead of full diagnosis
- Based on ETDRS and International Retinopathy Grading System

George Bresnick MD MPA in Guanajuato, Mexico
Retinopathy Screening with EyePACS

- Does **not** replace a full eye exam
- Improves Rate of Retinal Exams for Diabetic Patients
- Detects Sight-Threatening Conditions Before It’s Too Late
- Improves Patient Education About Diabetic Blindness Prevention and About Glycemic Control
Elements of Telemedicine-based DRS

Get Images/Data → Transmit → Store → Consult → Report → Refer

Color Key:
PC Clinic: DRS System Consultant
<table>
<thead>
<tr>
<th>EyePACS GRADING GUIDELINES</th>
<th>RIGHT EYE:</th>
<th></th>
<th></th>
<th></th>
<th>LEFT EYE:</th>
<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>No apparent diabetic retinopathy</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Microaneurysms ONLY (MA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Cotton wool spots (CW)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Hemorrhages with or without MA (HMA) 2a</td>
<td></td>
<td></td>
<td>&lt;2a</td>
<td>&gt;2a</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Definite Venous Beading 6a</td>
<td></td>
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<tr>
<td>Intraretinal microvascular abnormalities (IRMA) 8a</td>
<td></td>
<td></td>
<td>&lt;8a</td>
<td>&gt;8a</td>
<td></td>
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<td>New vessels (NV) or Fibrous Proliferation (FP)</td>
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<tr>
<td>Preretinal (PRH) or vitreous (VH) hemorrhage</td>
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<td></td>
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<tr>
<td>Panretinal laser scars present</td>
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<td></td>
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<td></td>
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<tr>
<td>Focal laser scars present</td>
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<td></td>
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<tr>
<td>Hard exudates (HE) present anywhere</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>HE close to center of macula</td>
<td></td>
<td></td>
<td>&lt;2DD</td>
<td>&lt;1DD</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Other referrable conditions in either eye:</td>
<td>Cataract</td>
<td></td>
<td></td>
<td></td>
<td>Glaucoma</td>
<td></td>
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<tr>
<td></td>
<td>Occlusion</td>
<td></td>
<td></td>
<td></td>
<td>Maculopathy</td>
<td></td>
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<tr>
<td>COMMENTS:</td>
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<td></td>
<td></td>
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<td>Hide</td>
<td>Submit</td>
<td>Reset</td>
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</table>
## RETINOPATHY SEVERITY COMPUTATION

EyePACS Computer algorithm calculates two summary grades

<table>
<thead>
<tr>
<th>OVERALL RETINOPATHY (DR) SEVERITY LEVEL</th>
<th>MACULAR EDEMA (ME) SEVERITY LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>No DR</td>
<td>No ME</td>
</tr>
<tr>
<td>Mild NPDR</td>
<td>ME not clinically significant</td>
</tr>
<tr>
<td>Mod. NPDR</td>
<td></td>
</tr>
<tr>
<td>Severe NPDR*</td>
<td>ME clinically significant*</td>
</tr>
<tr>
<td>PDR*</td>
<td></td>
</tr>
</tbody>
</table>
Severe Nonproliferative Retinopathy (NPDR)
37 year old Asian female hair stylist

Type II Diabetes x 10 years
Poorly controlled blood sugar
Screened on 5/9/2008
Reviewed on 5/11/2008
Referred for clinically significant macular edema
Appt. made with Dr. Shirin Barez, MD (retinal specialist) at UCB on 5/13/2008
37 year old female hair stylist

Treated at UCB on 5/13/2008

Follow up 6/3/2008: vision is 20/50 in treated eye

Follow up 5/12/2009: vision is 20/20 in both eyes
Newly Diagnosed 32 yr old Diabetic – Never Had Eye Exam

I didn't know I could lose my vision until I went with my doctor...
Other Conditions
Retinal Detachment
Swollen Optic Nerves

Right Eye

Left Eye
Vascular Occlusion
Glaucoma

Right Eye

Left Eye
Cardiovascular Disease
Retinal Emboli
“Closing the Loop” in Diabetic Retinopathy Detection

Unpublished study: 50% of referrals from an urban clinic showed no evidence of specialist visit following referral.
UC Berkeley Digital Health

• Provide necessary
  • Logistical Support
  • Technical Support and Training
  • Utilize the EyePACS platform and methodology
  • Provider Meetings
  • Expert Consultation Services
Timeline

• Contracting with UCB (1 week – X months)
  • Pre-approved contract with reverse BAA (1-2 weeks)
  • Campus legal has final say
  • Minimum monthly fee (with 30 day grace-period)

• Administrative preparation by PC Clinic
  • Typically 2-4 weeks (can be done during contract process)
  • Establish workflow
    • Photographer identification (gamers welcome!)
    • Establish standing order for screening
    • How will patients who need screening be identified?
Timeline

• Administrative preparation by PC Clinic (cont’d)
  • Appointments? Walk-ins? **Both** is best
  • How will information flow back to PCP when report comes back

• REFERRAL PROCESS
  • Referral coordination
  • Local referral sources

• Photographer Training and Certification
  • 3 days – 2 weeks
  • 3-4 hours initial training
  • **4-6 hours admin time needed to finalize certification**

START SEEING PATIENTS!
Secrets to Success

- Administrative Support and Oversight**
- Establish a planned workflow prior to starting screening
  - Identify good potential photographers
  - Appointments **AND** Walk-ins
  - Alerts through EHR/Chronic Disease Registry
  - Identify patients that need to be screened at the beginning of each clinic day
- Standing Orders for Annual Screening
- Referral Resources and Coordination
- Pupil Dilation
- Communication with UC Berkeley
Thank You!

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(510) 642-5456
• Enable primary care providers to perform diabetic eye exams in the primary care setting

• 5 retinal screening cameras to be placed in selected primary care provider sites

• Clinic staff are trained to capture retinal images

• Images are uploaded for interpretation at distant site (UC Berkeley Optometric Eye Center)

• Interpretations are returned to PCPs with diagnosis, recommendations for treatment
To reduce diabetes-associated vision loss, four out of five selected primary care sites will achieve or exceed a screening rate of 68.04% (NCQA 2015 National Benchmark for the 90th percentile), by January 31st, 2017.
Criteria for Program Success

- Large diabetic patient population
- Meet minimum technical requirements
- Ability to track and report program data
- Identify a clear plan for program implementation
- Motivation and leadership buy-in
Minimum Technical Requirements

Must have adequate space:

- 5’ x 5’ minimum area
- Ability to completely darken room
- 4 electrical outlets
- High-speed internet
- Ensure security of room
Participation Criteria

- 200+ diabetic patients active in past 1 year
- Ability to track and report program data*
- Detailed plan for program implementation

*PHC will request periodic reports and qualitative feedback from clinic point contacts
Program Terms

• BAA and Service Agreement with UC Berkeley Optometry
  • $340 monthly interpretation fee for up to 20 retinal screens

• Terms of Use for equipment and Performance Agreement with PHC
Billing Guidelines

Diabetic Retinopathy Screening is a Medi-Cal Benefit

When billing Partnership for this service must follow billing procedure:

<table>
<thead>
<tr>
<th>Code</th>
<th>Amount</th>
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<tbody>
<tr>
<td>92250 (no modifier)</td>
<td>$42.13</td>
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<td>Q3014</td>
<td>$22.94</td>
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<tr>
<td>T1014</td>
<td>$0.24</td>
</tr>
<tr>
<td>Total</td>
<td>$65.31</td>
</tr>
</tbody>
</table>

Providers selected for participation must attend training on billing practices for Telehealth Diabetic Retinopathy Screening.
Open Application Period:
November 16th, 2015- December 1st, 2015

Applications and supporting documentation must be submitted to:
QualityInitiatives@partnershiphp.org

(Questions welcomed to the above email address)

Expanding DRS in Primary Care Clinics Program Application
Visit our Web Page:

http://partnershiphp.org/Providers/Quality/Pages/DiabeticRetinopathy.aspx

Our partners:

EyePACS

www.eyepacs.org

UC Berkeley Optometry

http://www.caleyecare.org/digital-health-clinic-telemedicine
References


Questions/Answers