Telemedicine-Based Diabetic Retinopathy Screening (TMDRS) Program

Building a Strong North Country Healthcare System

Presented by: Robert Hunt

Fort Drum Regional Health Planning Organization

Diabetic Retinopathy (DR) is the leading cause of blindness among adults 20-to-74 years of age[1]

30 Million Americans Have Diabetes,
414 Million Worldwide.

- As the number of people living with diabetes increases, so does the number of people with impaired vision[2,3]
- 30.2M (12%) Americans have diabetes, 1.7M new cases per year[2]
- 80% eventually develop diabetic retinopathy[3]
- If not diagnosed early, diabetic retinopathy can lead to macular edema and blindness[4]

References: 1. Centers for Disease Control and Prevention. VHI. 2015. https://www.cdc.gov/visionhealth/basics/ced/. Accessed March 1, 2017. **2.** Centers for Disease Control and Prevention. 2014. https://www.cdc.gov/diabetes/pubs/statsreport14/national-diabetes-report-web.pdf. Accessed March 9, 2017. **3.** American Academy of Ophthalmology. 2016. https://www.aao.org/Assets/dba38b76-3095-4360-8cb600adab3aad68/635919125497230000/diabetic-retinopathy-ppp-pdf. Accessed March 9, 2016. **4.** National Eye Institute. 2016. https://nei.nih.gov/health/diabetic/retinopathy. Accessed March 9, 2017.

The best weapon against DR is early detection, but compliance is low[1,2]

With early detection, up to **95% of vision loss** cases are preventable.

- The American Academy of Ophthalmology, NCQA, and NQF recommend annual retinal exams for patients with diabetes
- 95% of vision loss can be prevented if caught and treated early[1]
- But only 20-50% of patients comply[2-5]
- Factors influencing compliance include:
  - Lack of insurance and health care access
  - Health literacy, cultural and language barriers
  - Patient logistics, time, and cost for specialist visit

References: 1. National Eye Institute. 2016. https://nei.nih.gov/health/diabetic/retinopathy. Accessed March 9, 2017. **2.** Sloan FA, Brown DS, Carlisle ES, et al. *Health Serv Res.* 2004; 39(5):1429–1448. **3.** Lehigh Valley Health Network. http://scholarlyworks.lvhn.org/cgi/viewcontent.cgi?article=1036&context=select-program. Accessed March 1, 2016. **4.** Lee DJ, Kumar N, Feuer WJ, et al. *BMJ Open Diabetes Res Care*. 2014;2(1):e000031. **5.** Rajput Y, Fisher M, Gu T, et al. *IOVS*. 2015; 56(7):1440.

Due to poor compliance, the Diabetic Retinal Exam is one of the lowest-performing quality metrics[1]

- Annual retinal examinations are included in the NCQA HEDIS®, CMS Medicare Star Ratings, and CMS ACO metrics for diabetes management[1-3]
- For ACOs beginning in 2017, CMS bundled the A1C and DRE metrics as a composite measure[3]
- Increasing DRE compliance can boost quality ratings and may qualify for incentives under HEDIS/Star Ratings[4]

References: 1. National Committee for Quality Assurance. 2017. http://www.ncqa.org/report-cards/health-plans/state-of-health-care-quality/2016-table-of-contents/diabetes-care. Accessed March 9, 2017. **2.** Center for Medicare and Medicaid Services. 2017. https://www.cms.gov/Medicare/Prescription-Drug-Coverage/PrescriptionDrugCovGenIn/Downloads/2017-Part-C-and-D-Medicare-Star-Ratings-Data-v11-02-2016-.zip. Accessed March 9, 2017. **3.** Center for Medicare and Medicaid Services. 2017. https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Downloads/MSSP-QM-Benchmarks-2016.pdf. Accessed March 9, 2017. **4.** Kaiser Family Foundation. 2016. http://kff.org/medicare/factsheet/medicare-advantage/. Accessed May 11, 2017.

Poor compliance may put patients with diabetes at risk for costly eye conditions[1,2]

- Retinal disorders among persons with or without diabetes are the second most costly eye conditions per person, at $3,640 and $3,740, respectively[2]
- The total economic burden of retinal disorders is estimated to be $8.7 billion[2]
- If identified early, DR can be treated for as little as $500
- If identified at a late stage, DR treatment may cost a minimum of $15,000[3]

References: 1. National Eye Institute. 2016. https://nei.nih.gov/health/diabetic/retinopathy. Accessed March 9, 2017. **2.** National Opinion Research Center. 2013. http://costofvision.preventblindness.org/costs/direct-costs/medical-costs-by-disorder/. Accessed April 11, 2017. **3.** Data on file. Welch Allyn; 2017.

The FDRHPO Target Population

- Diabetes is one of the most pervasive chronic diseases afflicting North Country communities.
- Within upstate New York, 76.5% with diagnosed diabetes (275,000 adults) reported having a dilated eye exam within the previous year.
  - Higher percentage than counterparts statewide (74.5%)
  - Higher percentage than nationally (68.7%)
- Within the tri-county target region (Jefferson, Lewis, St. Lawrence):
  - 11% of adults (ages 18 and over) are diagnosed with diabetes
  - Approximately 19,800 attributed diabetic cases in the tri-county region
  - Only 52% receive screening in the tri-county region

The Need

- Target population residing in some rural areas live 15 to 20 miles from the nearest source of care.
- 95% of the region's population live in a Health Profession Shortage Area (HPSA).
- Some of the regional social determinants:
  - Socioeconomic status
  - Insurance coverage
  - Education
  - Travel distance and transportation obstacles

The Consequences

- Approximately 20% of upstate NY adults who reported having diabetes (72k adults) reported having been told that the disease had affected their eyes or they had retinopathy (damage to the retina, the inner lining of the back of the eye).
- The significantly lower DR screening rates in the target area are impacting the NYS population area least able to afford expensive treatment options once they've been diagnosed with diabetic retinopathy.

The Plan

Triple Aim for Diabetic Teleretinopathy

Improved patient-centric care

Improved patient compliance

Reduced patient costs

The Landscape without Teleretinopathy

1. Patient visits PCP and receives a referral for a specialist.
2. Patient encounters barriers that prevents them from keeping the appointment: travel, cost, etc.
3. Patient gives up or forgets to keep appointment.
4. A health-conscious patient may still experience delays while waiting for a specialist.
5. Even if the visit to the specialist is successful, feedback is often not returned to the PCP, leaving the care loop open.

The Landscape with Teleretinopathy

1. Patient visits PCP and has retina photographed during that appointment.
2. Retina image is sent securely to specialist and patient can return home.
3. Specialist can view retina image and send PCP back a diagnostic report (usually within 24-48 hours).
4. PCP follows up with patient to discuss results and develop an individualized care plan, closing the care loop.

The Solution

- Worked with local ophthalmologist and optometrists to review various solutions and decided on the Welch Allyn RetinaVue 100 solution. Approached local PCPs to gauge interest.
- Applied for grant with Excellus and funding from NYS Senator Ritchie.
- Participating PCPs have the option of using a local specialist or a Welch Allyn specialist.
- Patients due for an annual diabetic retinal exam will be referred for a screening by the PCP or by self-referral.
- Reading, interpretation and assessment of the digital retinal images will be provided by the local specialist or the Welch Allyn specialist.
- The PCP will follow up with their patient to discuss screening results and develop an individualized care plan.

PCP Workflow

The PCP will run a report every "x" months pulling all Diabetic Patients that have not had a diabetic retinal exam (DRE) in the last 12 months. Their staff will go through the list and add the DRE to any upcoming appointments.

- The Provider's Nurse will do a "huddle" with the provider that morning of all the patients on their schedule for the day and will alert them if this test will be performed.
- In preparation for the screening, the patient must sit in a room with the lights dimmed, for at least five (5) minutes. This will allow their pupils to fully dilate.

PCP Workflow – Cont..

- Contact lenses may remain in place. Eyeglasses must be removed.
- Direct the patient to:
  - Sit up straight
  - Keep their head still
  - Focus on the green light inside the RV100
  - Both eyes should remain open
  - Patient should cover the unexamined eye with their hand
  - They will see a brief flash of light once the RV100 captures the image
- RV100 provides a quality score (red/yellow/green) that determines if the captured image is acceptable for review by the specialist.

PCP Workflow – Cont..

- Once both fundus images have been captured, they are transferred over the Welch Allyn RetinaVue Network (HIPAA compliant).
- Images are then analyzed by the local specialist or by the Welch Allyn ophthalmologists (state-licensed, board-certified).
- Readers create a diagnostic report which includes the fundus image, ICD 10 codes, and a referral/care plan.
- Diagnostic report sent to the PCP registered Welch Allyn RetinaVue portal, usually within 24-48 hours.
- PCP follows up with patient and develops an individualized care plan.

The RetinaVue® care delivery model enables diabetic retinal exams in primary care settings

Includes cameras (lease or purchase), HIPAA-compliant RetinaVue Network software, and professional medical services. A fast, four-step process ensures seamless workflow integration:

Order/Acquire

Place/send order in EMR. Medical assistant quickly captures images with non-mydriatic camera. Images are validated by quality assurance algorithms.

Transfer

Send encrypted images through an award-winning, HIPAA-compliant software platform. Subscription priced per camera, per month.

Analyze

Images can be analyzed by the state-licensed, board-certified ophthalmologists at RetinaVue, P.C. or by your preferred eye specialists.

Report

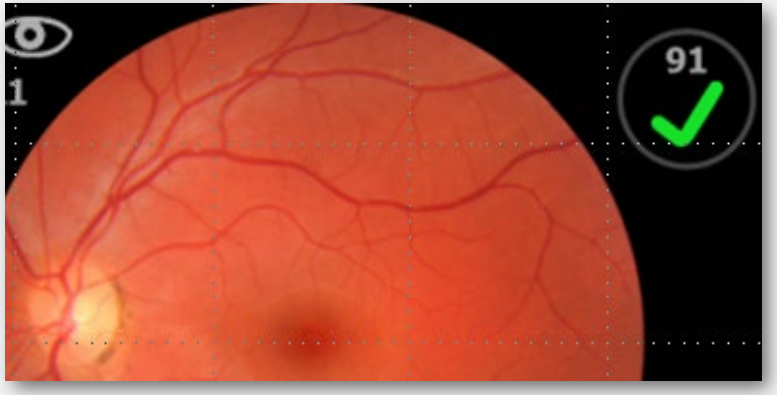
Receive a complete diagnostic report including fundus images, ICD 10 codes and a referral/care plan, generally in one business day. Priced per exam.

RetinaVue 100 Imager: the world's most advanced handheld retinal camera

PATENTED ENABLING TECHNOLOGY

- **Auto Illumination:** Adjusts for dark/light retina pigments
- **Auto Focus:** Takes five images in less than one second and selects best image
- **Auto Capture:** No button to push
- **Image Quality Assessment:** Immediate feedback on image quality to eliminate call-backs for re-imaging

Proprietary image-quality evaluation software eliminates callbacks for re-imaging



Images with a score of 40 or more (green check) are interpreted by the ophthalmologist 99.5% of the time.

- Immediate feedback on image quality
- Simple 1-to-100 scale (red, yellow, green)

  GREEN = 40+ is certainly a good image

  YELLOW = 20-39 is most likely okay

  RED = Below 20, re-take the image
- Eliminates call-backs for re-imaging

RetinaVue Network: Trusted HIPAA-compliant software platform for secure image transfer

SECURE TRANSFER PROCESS

- Encrypted images are sent through an award-winning, HIPAA-compliant platform
- Uses private cloud infrastructure
- Uses dedicated servers that undergo independent annual security audits
- Security standards have been assessed and approved in more than 2,000 facilities

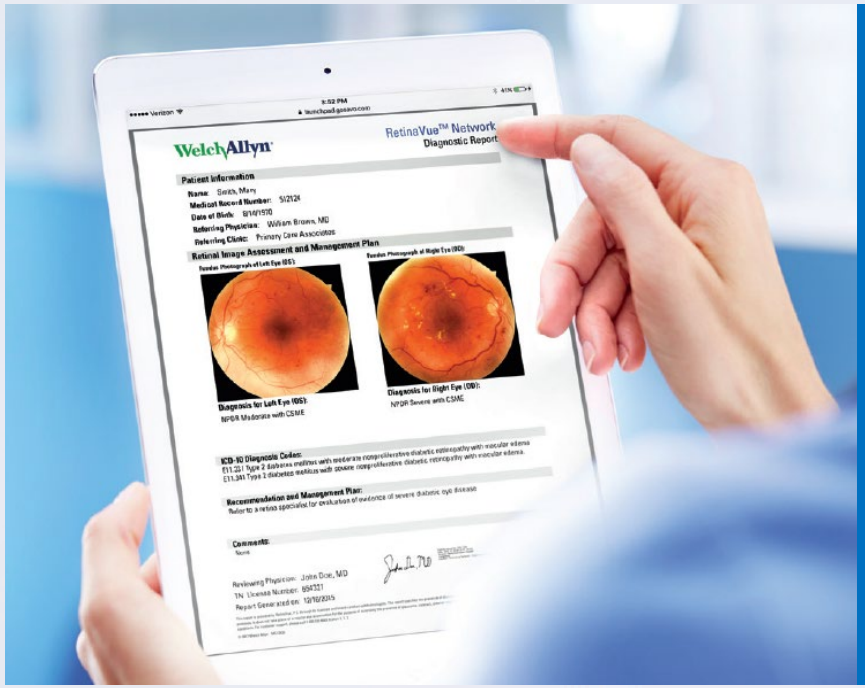
Flexible options for interpretation, including the only national tele-ophthalmology provider group

RetinaVue, P.C. is the first and only tele-ophthalmology provider to earn
The Joint Commission Accreditation

RETINAVUE, P.C.

- The largest dedicated tele-ophthalmology service provider in the U.S.
- A national network of board-certified, state-licensed ophthalmologists and retina specialists
- The first and only tele-ophthalmology provider to receive The Joint Commission's Gold Seal of Approval®, a symbol of quality and commitment to safe and effective patient care

Receive a comprehensive diagnostic report, generally in one business day



ONE-DAY GUARANTEE

- Report returned electronically, generally within one business day
- **Includes:**
  - Retinal images
  - Diagnosis and relevant ICD codes
  - Care management plan and recommended next steps
  - Comments, signature and license number from board-certified ophthalmologist performing the interpretation

Diagnostic Report - SAMPLE

WelchAllyn

RetinaVue™ Network
Diagnostic Report

Patient Information

Name: Smith, Mary
Medical Record Number: 512124
Date of Birth: 8/14/1970
Referring Physician: William Brown, MD
Referring Clinic: Primary Care Associates

Retinal Image Assessment and Management Plan

Fundus Photograph of Left Eye (OS):

Fundus Photograph of Right Eye (OD):

Diagnosis for Left Eye (OS):
NPDR Moderate with CSME

Diagnosis for Right Eye (OD):
NPDR Severe with CSME

ICD-10 Diagnosis Codes:
E11.331 Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema
E11.341 Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema

Recommendation and Management Plan:
Refer to a retina specialist for evaluation of evidence of severe diabetic eye disease.

Comments:
None

Reviewing Physician: John Doe, MD
TN License Number: 654321
Report Generated on: 12/16/2015

Digitally signed by John Doe
Date: 2015.12.17 07:09:30-05'00'
Reason: Recommendation Report
Location: RetinaVue Network - Diagnostic Portal

This report is provided by RetinaVue, P.C. through its licensed and board-certified retinal specialists. The report specifies the presence of disease in the posterior pole of the retina for diagnostic, management and referral purposes. It does not take place of a regular eye examination for the purpose of assessing the presence of glaucoma, cataract, anterior segment diseases, peripheral retina disease or other possible vision threatening conditions. For customer support, please call 1.800.535.6663; Option 2, 1, 3.

Reimbursement

- Difficult to address what specific insurance companies/programs are reimbursing because of the different contracts and products in the marketplace.
- Every PCP needs to verify Current Procedural Terminology (CPT) reimbursement because each practice has their own contracts and they vary from practice to practice.
  - Contact your provider representative for the insurance company
  - Explain that your are providing a solution for diabetic eye exams
  - Run a phantom claim to see the potential reimbursement
  - If claim is denied, reach out to your insurance provider and get details on why, explain the solution via the Welch Allyn coding verification letter.

Reimbursement, Cont..

- When using Welch Allyn RetinaVue P.C. reader:
  - They relinquish all billing rights (flat fee, 25pr/188.00 unlimited)
  - Submit the global CPT code of 92250
- When using a local reader:
  - Decide who will bill.
    - If contracting for a flat fee and the local reader is relinquishing all billing rights, then submit as above.
    - If the local reader will bill their professional component, then the PCP will only bill the technical component.
- Fixed contract with flat fee is recommended (less confusion on who is billing for what service)

Reimbursement, Cont..

Diabetic Retinal Exams are one of the quality metrics for the Healthcare Effectiveness Data and Information Set (HEDIS) and the Medicare STARS programs.

- CPT 92250* (Fundus photography with interpretation and report)
  - 92250 TC (Technical Component; for diagnostic tests, the portion of a procedure that does not include a physician's participation).
  - 92250 26 (Professional Component; the portion of a diagnostic test that involves a physician's work and allocation of the practice expense).
- CPT II 2022F (dilated retinal eye exam with interpretation by an ophthalmologist or optometrist documented and reviewed).

*non-revenue codes from NCQA HEDIS data set submitted in addition to the primary CPT code

Excellus

Using the Welch Allyn RetinaVue (RV) Program and RV Retina Specialist Network	Using the Welch Allyn RV Program without the RV Retina Specialist Network	Using another vendor program or purchasing cameras directly
PCP group bills the global code 92250 and 2022F; OR	PCP group bills the global code 92250 and 2022F. Specialist bills PCP group for agreed upon payment; OR	PCP group bills the global code 92250 and 2022F or 2024F accordingly. Specialist bills PCP group for agreed upon payment; OR
PCP group bills the global 92250, but with the specialist as rendering provider. Specialist must be linked to the PCP group's taxpayer ID number.	PCP group bills for the technical component (92250 TC) and specialist bills separately for the professional component (92250 26)	PCP group bills for the technical component (92250 TC) and specialist bills separately for the professional component (92250 26)

2022F: dilated retinal eye exam with interpretation by an ophthalmologist or optometrist documented and reviewed.
2024F: 7 standard field stereoscopic photos with interpretation by an ophthalmologist or optometrist documented and reviewed.

Questions???

The Fort Drum Regional Health Planning Organization:

Identifying Gaps, Working Together, Finding Solutions