

REAL-TIME ULTRA-WIDE FIELD IMAGE EVALUATION OF RETINOPATHY IN A DIABETES TELEMEDICINE PROGRAM

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→ Purpose

Globally, the need for eye exams for patients with diabetes is over one million per day. An ideal way to help meet this demand, is retinal imaging in primary care and endocrinology clinics. This study was undertaken to evaluate the effectiveness of point-of-care Diabetic Retinopathy (DR) evaluation with trained, non-physician retinal imagers using **optomap**[®] ultra-widefield (UWF[™]) imaging.

→ Methods

Trained imagers performed an assessment of clinic patients. Images were classified initially as ATA Category 1: minimal/no DR or Category 2: more severe DR (ETDRS <20). Next the Category 2 images were further assessed to identify eyes with referable DR. The images were independently graded by certified graders at the Joslin Vision Network reading center. Results of the two independent assessments were compared.

→ Discussion

- UWF imaging compares favorably with dilated retinal examination by a retina specialist and ETDRS photography for determining DR severity
- UWF imaging reduces the ungradable rate by 71% vs traditional nonmydriatic fundus photography
- UWF imaging reduces image evaluation time for DR by 28% vs traditional fundus photography
- Imager grading at the point of care can identify at risk eyes with a sensitivity that approaches 100%
- The Joslin Diabetes Center transitioned all telemedicine retinal photography to UWF in 2012

→ Conclusion

This study demonstrates that appropriately trained and certified imagers following a defined protocol can accurately and effectively evaluate images for the presence of referable DR at the time of UWF retinal imaging. Furthermore, accurate identification of referable DR allows prompt referral to eye care and reduces the burden on eye care of false positive results.



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