



Impact of the IRIS-EHR Integration on Engagement and Efficiency in a Teleretinal Examination Program for Diabetic Retinopathy

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Purpose

Diabetic retinopathy is the leading cause of vision impairment/blindness in adults and the most common cause of blindness in patients with diabetes¹. Chronic high blood glucose is associated with damage to the blood vessels that nourish the retina, causing micro-aneurysms, leakage, and ischemia. Ultimately, new, fragile blood vessels prone to hemorrhage form which can lead to vision impairment. Macular edema, glaucoma, and retinal detachment are all potentially blinding conditions that may result from this disease.



Fortunately, early detection and intervention can prevent disease progression and vision loss by 95%¹. Key to early detection and intervention is the ability to screen and diagnose a large population of diabetic patients. Telemedicine solutions for eye exams have become increasingly prevalent in the management of the diabetic patient population. The IRIS teleretinal exam platform is composed of a non-dilated fundus camera, cloud-based reading center, and secure internet-based transfer portal used to screen patients for retinal abnormalities. Integration of, and ease of access to, the data obtained from these screenings into the Electronic Health Records (EHR) system is imperative to the health care practitioner's ability to diagnose and follow up with the patient.

The present study surveyed primary care providers and technicians following the integration of the IRIS teleretinal platform into the EHR used by the Harris Health System (HHS, Houston, Texas).

¹ National Eye Institute

Methods

EPIC integration at Harris Health (Houston, Texas) included an “orders and results” interface. Briefly, a PCP orders an IRIS exam as a standard orderable, resulting in patient information being directly populated to the IRIS camera platform from the EMR. The patient care technician operating the IRIS platform can then search by patient name and perform the exam. Images from the exam are automatically exported and attached to the order and sent for review by the ophthalmologist. Once the result is ready, the IRIS platform automatically downloads, formats, and sends it to the EMR. The provider then receives a notification in their inbox and can review the result in the patient EMR.

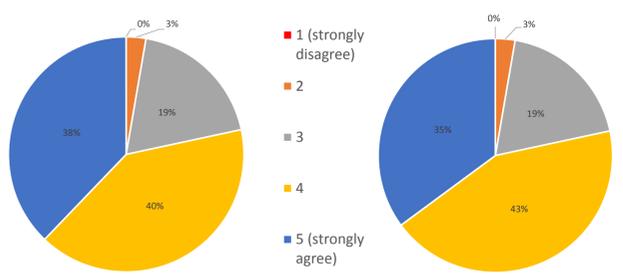
37 Primary Care Physicians and 7 Primary Care Technicians were surveyed following the implementation and use of the IRIS teleretinal exam platform with their EHR system, Epic. The purpose of the survey was to identify and evaluate perception in terms of efficiency, engagement, and patient access compared to that prior to integration.

Results

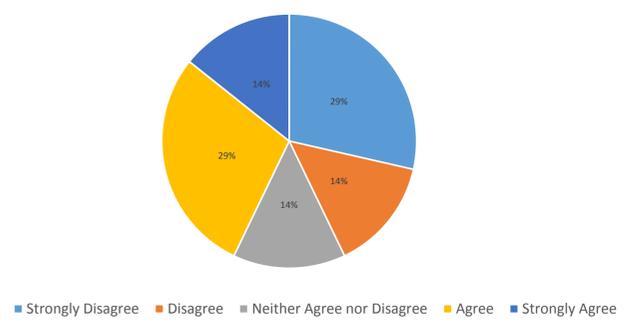
Survey Responses

Do you think that implementing the IRIS program in Harris Health clinics has increased the access to your patients to receive diabetic retinal exams?

Is the data that you're receiving back on the IRIS reports helpful for the management of your patients with diabetes?

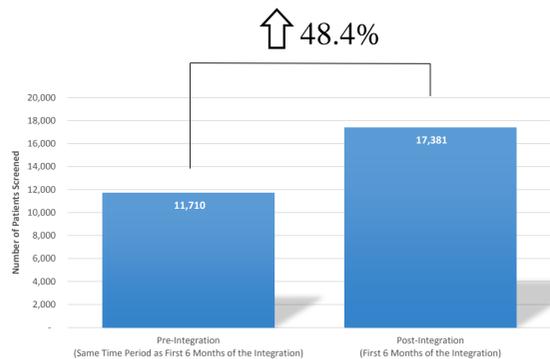


Do you think that integrating the IRIS program with the Epic EMR has reduced the amount of errors received back from incorrect patient data entry?



EHR Integration Effect on Volume and Disease Prevalence

The number of patients screened increased by 48.4% in the first six month of IRIS-Epic integration compared to the same time period in the previous year.



Retinal Pathology Diagnoses Before and After IRIS-Epic Integration

Pathology	Prior To Integration	Post Integration	Change
Diabetic Retinopathy			
None	46.60%	73.70%	27.10%
Mild	40.70%	18.40%	-22.30%
Moderate	8.30%	4.90%	-3.40%
Severe	2.60%	1.10%	-1.50%
Proliferative	1.80%	2.00%	0.20%
Macular Edema			
All	6.25%	6.58%	0.33%
Suspected Conditions			
Glaucoma	6.93%	7.19%	0.26%
Cataract	1.34%	8.66%	7.32%
Dry AMD	1.17%	0.01%	-1.16%
Wet AMD	0.06%	0.02%	-0.04%

Ocular diagnoses were compared in the same 6 month time period before and after IRIS-EPIC integration.

Conclusions

The integration of the IRIS teleretinal examination program with the EHR system led to:

- Higher physician engagement
- User reported decrease in operational time and effort
- 100% of PCT survey respondents report that, after IRIS-Epic integration, it takes less than 5 minutes to upload patient data and to obtain results from a patient scan.
- A nearly 50% increase in the number of diabetic patients screened

The integration of the IRIS Teleretinal Exam Platform with the EHR allows improved access to a test consistent with the standards of care and quick, easy uploading and retrieval of results from the system. Increased patient access to retinal screenings led to the nearly 50% increase in the number of patients screened – leading to a decrease in disease prevalence as early detection and intervention prevents disease progression. The marked increase in volume of diabetic patients screened will increase practice HEDIS numbers and lead to early intervention in patients with undiagnosed diabetic retinopathy and, therefore, better patient outcome and more sight saved.

How it Works:

