
Abstract

Improving Patient Access to Diabetic Retinopathy Screening Through Telemedicine

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Abstract

Background: The LifeBridge Health (LBH) Accountable Care Organization (ACO) serves approximately 20,000 Medicare beneficiaries, many of whom have type I or type II diabetes. Diabetic retinopathy (DR) screening is extremely important in helping to preserve patient's eyesight and overall functional status. However, like many other organizations, LBH has struggled with low compliance rates for DR screening. As result, LBH searched for a solution to improve DR screening care and improve ACO quality and financial performance.

Objective: LifeBridge sought a telemedicine diagnostic solution that was easy for our physicians and clinic teams to use that would enable improved management of patients with diabetes. A pilot was initiated at three large primary care practice locations in the last quarter of 2017. Two of the locations received table top cameras, while the other location received a more mobile, hand held unit. Working with a dedicated LBH IRIS team, the practices created and implemented workflows, documented processes, and instilled best practices.

Methods: We used a pre-post test design to measure whether implementation of this tool enabled providers to better meet the diabetic retinopathy screening measure. We included the final months of 2017 in the preperiod to account for any operational changes required to implement the new workflow. Manual chart abstraction of patients seen in the previous 4/6 weeks who were eligible to determine the proportion of patients who met the measure. This was done quarterly in every primary care practice throughout the organization. One of the three practice sites was changed halfway through 2018 and switched to another; however, both practices were included in the analysis. We also compared the number of diabetes patients in the populations of each of the four practices. A two sample z test with a *P* value of .05 was used to test for statistical significance.

Results: As of April 2019, 810 patients were screened for diabetic retinopathy. Of these, 33.1% (282 patients) were diagnosed with pathology. Approximately 15.6% (n=133) were diagnosed with DR. We also identified 87 patients who are considered "IRIS saves" patients who had pathology identified that was serious enough to put them at imminent risk of losing their sight. For all patients requiring follow up, direct referrals were made to our in-network ophthalmologists at Krieger Eye Institute for treatment that these patients would not have otherwise received. Statistical comparison of DR screening performance of practices pre and post implementation showed mean screening rates of 38.5% and 47.2%, respectively, with *P*=.01.

Conclusions: IRIS screenings allowed our primary care providers to provide more comprehensive care to patients with diabetes, eliminating the need for additional office visits. Having IRIS available in the practice was able to demonstrably improve performance in the diabetic retinopathy screening measure. As a result, primary care providers with IRIS helped facilitate access to care, thus making it easier for patients make better choices related to their health outcomes. We hope to further use the data to study HbA_{1c} control, medication adherence, and cost/utilization in those diagnosed with retinopathy compared to those with a negative screening.

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