



# Enabling diabetic retinal exams at the point of care:

## A strategy that works for patients and providers



### Overview

#### Customer

Summit Medical Group

#### Location

Knoxville, TN

#### Customer Profile

Summit Medical Group is the largest organization in the provision of primary care in the East Tennessee region with over 300 physicians in 55 office locations and 2 hospitals serving patients in 14 counties in the East Tennessee region. Summit Strategic Solutions is a business partner of Summit Medical Group providing a full range of management and value based care services.



#### Key Business Outcomes

Faced with low diabetic retinal exam compliance rates and associated quality metrics Summit needed to select a scalable and trusted solution and partner who could work with them to improve compliance and associated quality metrics for the practice—ultimately helping them improve outcomes for their patients with diabetes.

### Introduction

Diabetes is an epidemic affecting nearly 10% of the US population with 1.5 million new diagnoses each year.<sup>1</sup> It is associated with several complications including diabetic retinopathy (DR) occurring when the small blood vessels in the back of the eye become damaged from high blood glucose levels, resulting in leaking and overgrowth of new vessels. DR is the leading cause of blindness among working-age adults (ages 20 to 74) in the United States,<sup>2</sup> yet it's one of the most preventable blinding diseases in the world. Unfortunately, due to the lack of warning signs and symptoms, diabetic retinopathy is often not detected until the late stages of the disease—when vision loss can be irreversible. Therefore, early detection of DR is critical for patients living with diabetes.

### Previous State

Patients with diabetes are typically referred to an ophthalmologist for their annual eye exam, though on average about 50% of these patients either fail to schedule or fail to attend their appointment.<sup>3</sup> This is the problem Summit Medical Group was experiencing in 2015 when their estimated patient compliance rate with DR exam referrals was about 20%. Furthermore; when patients did receive their exam, Summit had difficulty obtaining medical records to verify the appointment and any retinal diagnosis. Summit needed a better solution to ensure that patients received an annual diabetic eye exam, enabling the diagnosis of pathology in its early stages, when treatment options are more effective and affordable.

### Developing a Strategy

In 2015, Summit evaluated teleretinal screening as a solution to close the diabetic retinal exam (DR exam) compliance gap. Teleretinal screening solutions combine fundus imaging with remote interpretation to reach diabetic patients at the point of care. After a thorough investigation, Summit chose to standardize on the Welch Allyn RetinaVue™ Network within their clinics.

## Developing a Strategy (continued)

To ensure the best overall access to care, Summit provided two different screening options to their practices:

- Many sites purchased their own RetinaVue cameras, received training, and provided DR exams to diabetic patients during their routine appointments. By intercepting patients in primary care and providing quick and comfortable exams, Summit hoped to increase compliance dramatically.
- In smaller or more remote clinics, Summit provided mobile screening aiming to increase access to DR exams for patients who may otherwise not receive them by providing pre-scheduled, on-site screening events.

With RetinaVue Network, images were quickly and easily captured by medical assistants using high-quality, non-mydratic cameras. A proprietary algorithm in the RetinaVue Network software performed a quality assurance (QA) check to ensure readability of images by a remote specialist. A simple green check mark or red "X" removed the guesswork and improved the first patient encounter capture rate. All tests were then interpreted by RetinaVue Network board-certified ophthalmologists and electronically deposited automatically, directly into Summit's electronic medical record.

## Enduring Success

This collaborative approach utilizing the Welch Allyn RetinaVue Network has resulted in a significant improvement in the early diagnosis and treatment of these diabetic patients; thus preventing diabetic-related disability and blindness. To date, Summit has 23 active camera sites and 13 mobile sites in their network. Welch Allyn also provides comprehensive population health management tools and quality reporting within their robust customer portal which helps Summit manage their clinics and patient population more effectively.

Summit saw rapid improvement in diabetic eye examination rates after the implementation of RetinaVue Network. Most notably, the ACO moved from a **one-star quality rating to a four-star rating** in the category of Medicare diabetes retinal exams by one of their major insurance providers within the first year of the program, increasing access to quality revenue. The total number of patients who received DR exams has dramatically increased as a result of implementing the RetinaVue Network as well. Summit had 933 patients examined in 2015, when they adopted RetinaVue Network technology midway through the year. DR exam rates have continued to **approximately double each year** with 2,211 exams provided in 2016 and 2,117 provided in the first half of 2017. On average, approximately 10% of patients examined were diagnosed with DR. Without the RetinaVue Network program implementation, **pathology could have been missed in more than 500 patients** resulting in increased risk for severe vision loss. From these results, the effect of reducing patient barriers to receiving diabetic retinal exams is evident. The mobile program has a **76% compliance rate**, which is far more than the estimated 20% compliance rate of patients receiving their diabetic retinal exam prior to Summit's implementation of RetinaVue Network.

Summit Strategic Solutions worked with Welch Allyn to implement RetinaVue and the outcomes were significant in terms of patient care and quality management. In the category of Medicare diabetes retinal screenings, **Summit Medical Group moved within one year from a one-star quality rating to a four-star rating** by one of its major insurance provider partners. We plan on expanding this successful and meaningful program.

- Jack Kam, Executive Leader and Chief Science & Innovation Officer, Summit Strategic Solutions

1 Statistics About Diabetes. (2017, July 19). Retrieved August 30, 2017, from <http://www.diabetes.org/diabetes-basics/statistics/>

2 CDC Vision Health Initiative (VHI), Common Eye Disorders. [www.cdc.gov/visionhealth/basics/ced/index.html](http://www.cdc.gov/visionhealth/basics/ced/index.html)

3 Monitoring Visual Status: Why Patients Do or Do Not Comply with Practice Guidelines; Frank A. Sloan, Derek S. Brown, Emily Streyer Carlisle, Gabriel A. Picone, and Paul P. Lee; HSR: Health Services Research 39:5 (October 2004)