

# AUTONOMOUS AI AT POINT-OF-CARE IMPROVES EYE EXAM TESTING RATES FOR PATIENTS WITH DIABETES

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## BACKGROUND

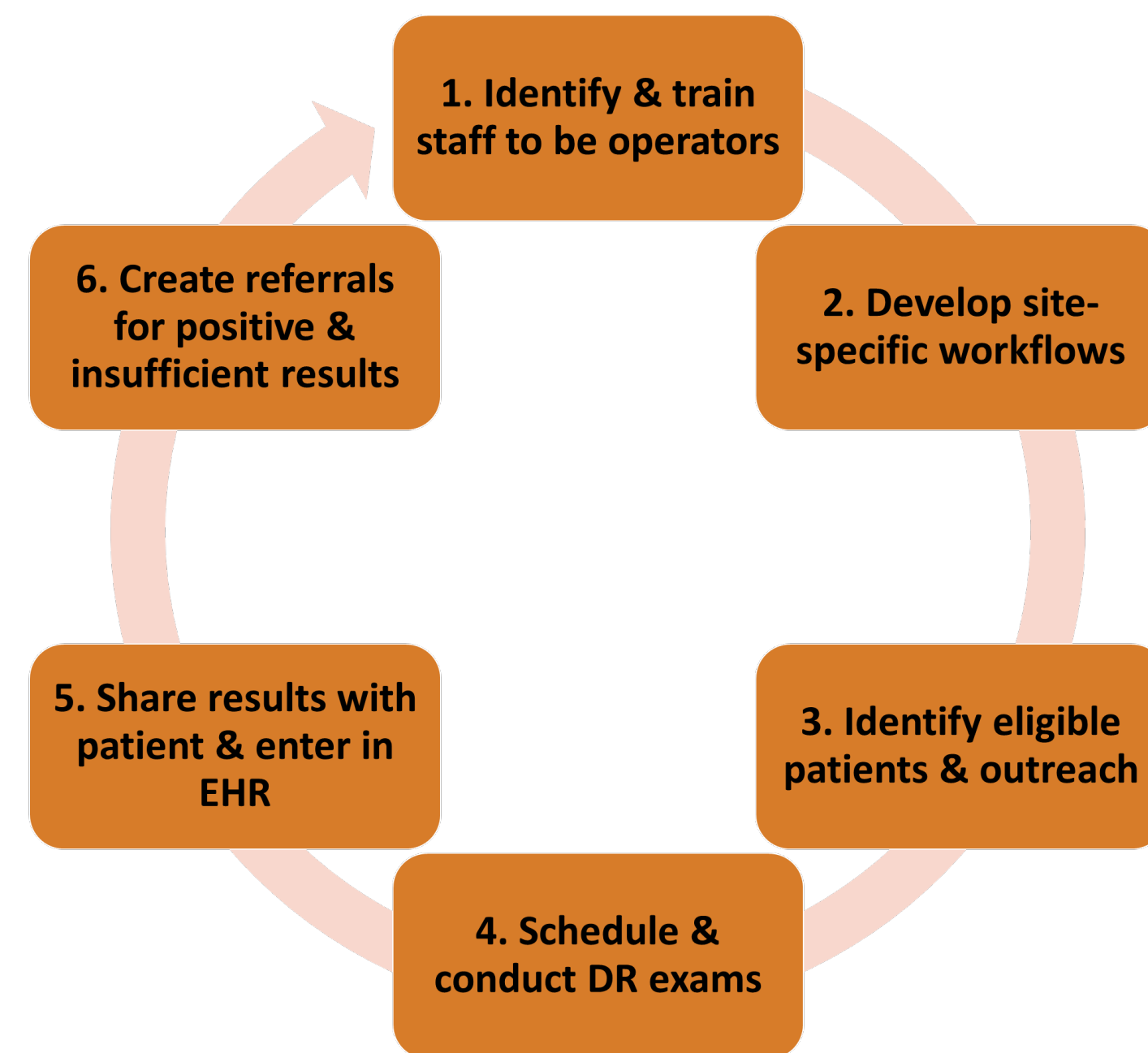
- Current guidelines recommend annual diabetic retinopathy (DR) testing.
- At Zufall, testing rates averaged 16% (based on EHR data) compared to national average in 2020 of 58% (according to NHIS data).
- LumineticsCore™ is the first FDA-cleared autonomous AI technology for use in healthcare and validated to diagnose DR at point-of-care.
- In April 2021, Zufall received two LumineticsCore™ devices and placed them at two sites with the goal of increasing DR testing rates.
- In November 2022, Zufall expanded testing to four sites.

## METHODS

- Developed workflows and identified operators to conduct autonomous AI DR tests.
- Trained the trainer and introduced the device to providers.
- AmeriCorps members and other nonclinical team members trained on use of device.
- Standardized documenting DR testing visits in eClinicalWorks.
- Developed a step-by-step guide for nonclinical operators with screenshots on how to document.
- Developed patient scripts in English and Spanish for nonclinical operators to use.

## METHODS

Figure 1: DR Testing Workflow in Ambulatory Care Setting Using Autonomous AI Solutions



- Autonomous AI DR tests are conducted by nonclinical staff or volunteers to assist the clinical team without impacting workflow.
- Autonomous AI DR tests can be scheduled on the same day as a clinical appointment or patients can be scheduled on another day.
- Results are provided to patients and providers at the time of the test without needing a specialist to review.
- Results are uploaded in the patient record and documented using a template.
- Patients with a positive or insufficient test results are referred to an eyecare specialist.
- Patients with a negative result are eligible for a retest in one year.

Figure 2: Negative Test Results of Left & Right Eye



Figure 3: Positive Test Results of Left & Right Eye

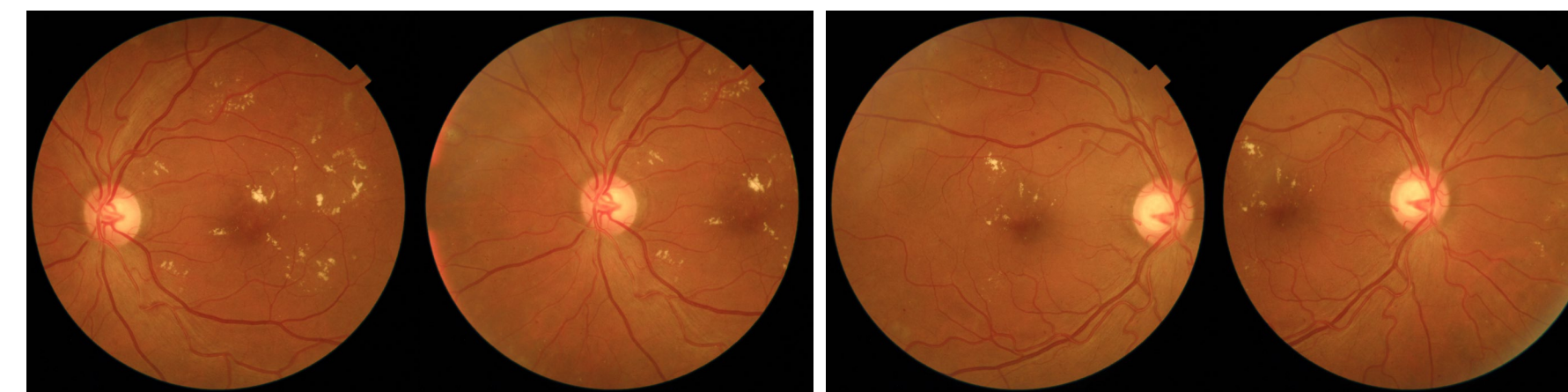
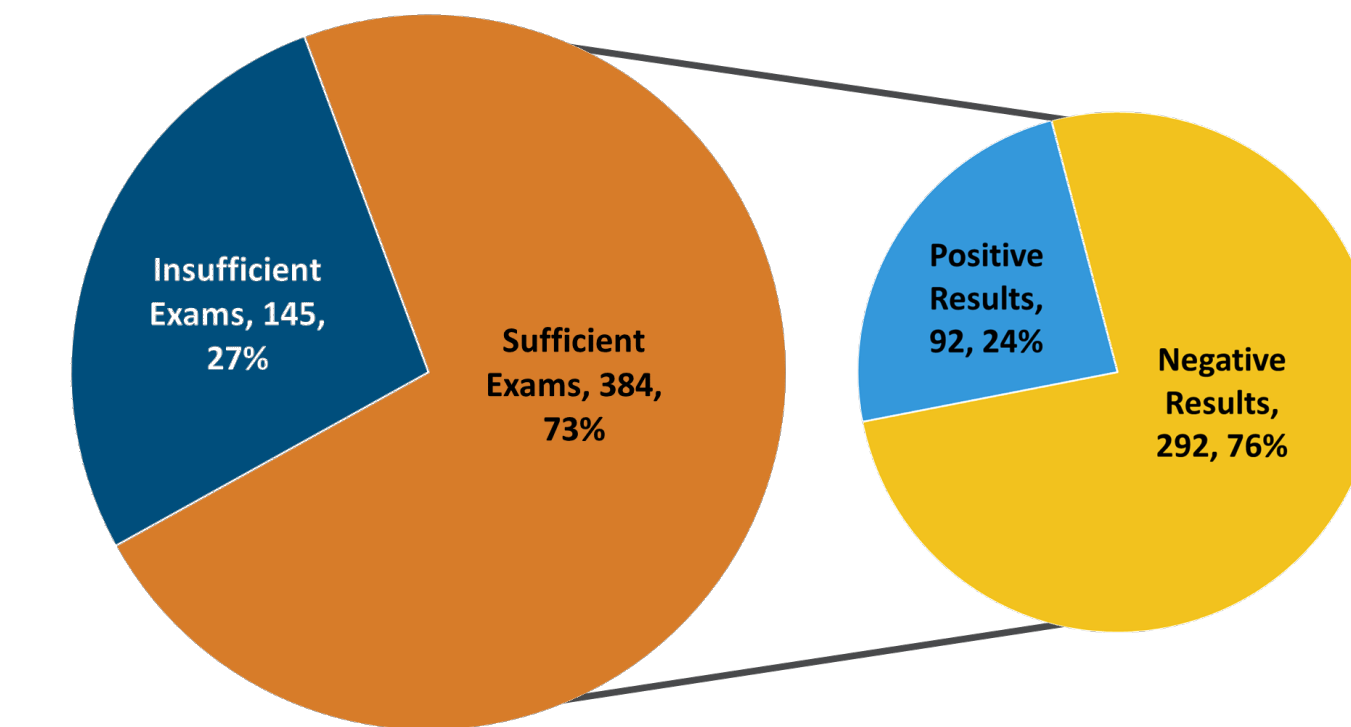


Figure 4: LumineticsCore™ AI Diagnostic System in Clinical Setting

## RESULTS

Chart 1: Autonomous AI DR Exams April 1, 2021 – June 30, 2023  
n = 529



- By June 30, 2023, Zufall's DR completion rate had increased from 16% to 35%.

## DISCUSSION/CONCLUSIONS

- Autonomous AI at point-of-care reduces access barriers and increases rates of DR testing.
- Locating devices at the centers facilitates access to testing and reduces the need to refer to subspecialists.
- Challenges included staffing shortages and turnover resulting in inconsistent scheduling, lack of room for the device at some sites, lack of provider awareness and patient factors.
- LumineticsCore™ is a reliable testing device and point-of-care solution that can be successfully implemented in a primary care practice.