

CASE STUDY

 CANARY SPEECH

Canary Speech's vocal biomarker technology unlocks voice as a vital sign, leading a new era of machine learning in healthcare. Our mission is to replace subjective measurements with objective, actionable data to assess wellness and power more successful patient outcomes.

WHILL
Wyoming Health Innovation Living Lab

Wyoming Health Innovation Living Lab (WHILL) is a global proof of concept hub for disruptive health technology innovation. WHILL's cognitive impairment screening tool allows for the general public to be quickly screened outside of a clinical setting in an effort to identify early signs of dementia, other neurohealth issues, and functional decline.

THE CHALLENGE

Identifying mild cognitive impairment (MCI) and other neurological conditions poses several challenges due to their subtle and often complex nature. These challenges include reliance on subjective measures, comorbidities or overlapping conditions, and the lack of specific biomarkers for cognitive conditions. This hinders early detection, diagnosis, and treatment of MCI, potentially impacting patient outcomes and quality of life.

THE SOLUTION

Canary Speech's patented vocal biomarker technology introduces a solution to these key challenges. Leveraging the power of AI, Canary's models provide a repeatable, objective screening for behavioral and cognitive conditions using a 40 second sample of conversational speech.

In a collaborative effort with Canary Speech, WHILL set out to determine how vocal biomarker technology would benefit their clinicians and patients with the following questions:

- 1 Does deployment of vocal biomarker technology outside a clinical setting increase awareness of functional cognitive decline?
- 2 Does deployment of vocal biomarker technology aid in screening for functional cognitive decline?
- 3 Does deployment of vocal biomarker technology provide additional revenue opportunities while informing increased patient care?

THE IMPACT

Over a six month period, WHILL and Canary Speech studied the benefits of vocal biomarker technology for WHILL patients. Significant positive impact was observed in all three areas of focus for this study.

“ The aging community members (along with family and caregivers) are desperate for fast, objective assessments that provide actionable results regarding cognitive decline. Canary checks all those boxes. Older generations struggle with mobile devices, but often enjoy talking, which is the very biometric Canary utilizes and collects in a passive manner. - Josephine Krause, WHILL Project Manager ”

Deployment of vocal biomarker technology outside a clinical setting increases awareness of functional cognitive decline.

In collaboration with the Wyoming Health Fairs (WHF), a nonprofit organization offering low cost blood draws and screenings in rural communities throughout the state, WHILL deployed Canary Speech as a vital part of a functional cognition screening at no cost to the patient. The goal was to identify participants whose scores indicated they should seek follow up care from a cognitive care specialist or neurologist.

25%

Of participants were strongly advised to make a follow-up appointment with a specialist.

34%

Of participants were advised to re-screen within 3-6 months.

59%

Of total participants received actionable recommendations for follow-up care.

Deployment of vocal biomarker technology aids in screening for functional cognitive decline.

56%

Of patients were identified by Canary as having vocal biometric matching cognitive impairment.

26%

Of those identified with cognitive impairment matched Alzheimer's specifically.

Within the clinical setting, WHILL utilized Canary Speech vocal biomarker technology on 50 patients at Frontier NeuroHealth, a private neurology practice seeing patients throughout Wyoming. These patients expressed cognition concerns to the physician, but had not yet been diagnosed with dementia.

“ In the realm of neurology and cognitive care, there exists a palpable need for rapid, cost-effective biometric solutions that can function as early screening tools for cognitive and mood disorders. Thanks to artificial intelligence, the integration of vocal biomarkers into routine clinical assessments has the potential to become as commonplace as the use of a pulse oximeter or a blood pressure cuff.

- Dr. Allen Gee (MD, PhD, FAAN) owner and neurologist at Frontier NeuroHealth ”

Deployment of vocal biomarker technology provides additional revenue opportunities while informing increased patient care.

Screening for behavioral and cognitive health with an objective biomarker test not only introduces a new billable event for Frontier NeuroHealth, but also marks a significant departure from the time-consuming paper assessments of the past now replaced by an efficient digital alternative. This transition is particularly notable as it integrates with existing CPT codes, enhancing reimbursement potential. With a minimum of \$12 per patient per visit already established, additional CPT codes can be utilized based on the specifics of each patient's treatment plan, further bolstering the potential for reimbursement.