



Supporting the Mental Health of Bronx Students

When a young child is experiencing severe emotional or psychological difficulties in a school setting, professional intervention is essential. Unfortunately, overburdened school psychologists often lack the bandwidth to treat every troubled student they encounter. In nine elementary and middle schools in the Bronx, however, VNS Health's Promise Zone program is helping to fill that gap.

The program places trained social workers onsite at each school for one to two days per week, where they engage in one-on-one sessions with distressed students, some as young as four or five. The weekly counseling sessions, which are free and

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Above: A Promise Zone clinician working with elementary school students. The VNS Health program is active in nine Bronx schools, providing mental health counseling for students and workshops for teachers and parents.

Analyzing Speech Patterns as a Potential Screen for Health Risks

Can detecting changes in speech help identify if someone is at risk for hospitalization? That's the focus of investigations being conducted by VNS Health's Center for Home Care Policy & Research in collaboration with researchers from Columbia University's School of Nursing, Computer Science and Department of Electrical Engineering.

The research, which is supported by a grant from the National Institute on Aging, employs an automated speech-processing tool that the Research Center's team helped develop. The tool analyzes speech samples for their acoustic characteristics, such as voice frequency and intensity—which reflect a person's ability to control their vocal cords—as well as elements like word choice and emotional expression.

"Evidence indicates that certain vocal frequencies and patterns of language usage, taken together, can serve as early predictors for specific health conditions, including Alzheimer's and related dementias, congestive heart failure, and suicide risk," says Maxim Topaz, a VNS Health research scientist and Elizabeth Standish Gill Associate Professor of Nursing at Columbia, who is one of the lead investigators on the project. "These findings could be used by an organization like VNS Health to identify and monitor home care patients whose speech indicates their health is at risk of deteriorating."

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- Behavioral Health Team to Expand Services in South Bronx
- VNS Health Research Center Marks 30-Year Anniversary
- Helping Hospice Patients and Family Members Achieve End-of-Life Goals



Using Data Analytics to Improve Patient and Member Outcomes

An interview with Tim Peng, Executive Vice President, Science and Technology, who oversees VNS Health's IT and Business Analytics and Intelligence operations as well as its Center for Home Care Policy & Research

Predictive analytics plays a key role in how VNS Health cares for its patients and plan members. Can you explain how this works?

The aim of VNS Health's Data Analytics team is always to provide our frontline colleagues with the information they need to deliver the best possible care to patients and members, leading to better outcomes and preventing adverse events like rehospitalizations. This starts with gathering high-quality data in a form our data analysts can use. We then employ

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VNS Health to Expand Substance Use and Mental Health Services in the South Bronx

VNS Health has received a grant of \$4 million from the U.S. Department of Health and Human Services' Substance Abuse and Mental Health Services Administration (SAMHSA) to expand access to integrated substance use and mental health care for residents of the South Bronx. The funding, to be delivered in increments of \$1 million per year over the next four years, will be used to open a Certified Community Behavioral Health Clinic (CCBHC) that provides rapid access to whole-person behavioral health care, regardless of an individual's ability to pay.

The grant is one of 128 awarded nationwide to establish CCBHCs in high-need areas across the country. "The need for this new VNS Health clinic is especially urgent given the growing mental health and

opioid crises in the South Bronx," notes Jessica Fear, VNS Health's Senior Vice President for Behavioral Health. "This area has the highest overdose mortality rate in New York City, 85% of which involve opioids. In addition, one out of six South Bronx residents experience depression, and that rate is even greater for young people."

The new clinic will offer integrated, holistic care for mental illness and substance use disorders, with a range of comprehensive services that includes outreach, screening, assessment, treatment, care coordination, and recovery support. "Our goal is to treat the whole person, and to get clients into treatment as soon as possible," says Fear. "We want to eliminate all the roadblocks that keep people from getting into care quickly—and staying in care."



Tim Peng Q&A

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"VNS Health's Data Analytics team works very closely with our clinical teams" says Tim Peng, Executive Vice President, Science and Technology at VNS Health. "We're constantly asking them, 'What information do you need in order to provide the right care at the right time?'"

sophisticated mathematical models to analyze this data and develop models that can help identify which patients and members are at risk of an adverse event, or could benefit from increased monitoring or a focused intervention.

Do you get input from your clinical colleagues along the way?

All the time. We work very closely with our clinical teams as part of this process. We're constantly asking them, "What information do you need in order to provide the right care at the right time?" and, "Does the information we're supplying make sense to you?"

How are these models impacting patient and member care?

I'll give a few examples. Our care management team currently uses analytics to identify which clients could benefit from targeted outreach

by a nurse practitioner, as well as who may be in need of palliative care services. We're also using predictive analytics with our health plan members to identify potential vulnerabilities. Let's say they have a behavioral health condition like depression—we can determine what other conditions this puts them at risk for. Our clinicians then use this information to guide their interventions. And with our hospice patients, we can analyze their medical history to predict their risk for a crisis that might cause a family caregiver to have them admitted to the hospital—which is something we're trying to avoid when caring for a hospice patient. A high risk score will alert our hospice team to design a plan of care for the patient and their family caregivers that mitigates the elevated risk of hospitalization.

Is this technology changing over time?

Yes—it's evolving rapidly. Our predictive models themselves are continually improving, as they're recalculated based on new information over time. In addition, here at VNS Health we're now taking algorithms that have been used in one business line and applying them more broadly across the organization. We're also looking at more advanced artificial intelligence models that are being developed—around speech recognition and documentation, for example. We're approaching these newer technologies with caution, however. We want to make sure we're comfortable with any new technology and understand its limits before we start using it in a clinical setting.

Does VNS Health utilize data analytics outside clinical care?

Absolutely. In addition to providing clinical decision support, our data analytics team is committed to making sure everyone working in areas that support patient and member care is playing at the top of their game—for example, that we're employing the best logistics in getting services to folks who are potentially at risk, and also providing the information our customer care teams need to support patients and members who call in with questions.

You started out working for VNS Health's Research Center 25 years ago. What have you learned during your VNS Health journey?

I've really come to appreciate what a collaborative organization this is. Everyone's support for each other in service of our mission is very sincere. The other unique thing about VNS Health is that we're willing to invest resources into whatever it takes to provide the best care for the communities we serve. The fact that our Data Analytics team exists is based on a belief by leadership that we can do an even better job of supporting our clinicians by leveraging advanced technology. That's what makes VNS Health the special organization it is—we're always in pursuit of the best possible outcomes for our patients and members.

VNS Health Research Center Marks 30 Years of Shaping Home Care Protocols and Policy

Since its founding in 1993, the Center for Home Care Policy & Research at VNS Health has occupied a unique position as America's only research institution operated by a home health care organization. During this time, the center's investigators have published over 400 peer-reviewed papers and its research has been supported by over \$60 million in government and foundation grants.

Today, three decades after its launch, the center's impact can be seen around the world, from the many strategies VNS Health researchers have developed to prevent rehospitalizations and improve care management quality, to their work with government officials at the state and national level to implement new home care policies—which has included designing Medicare and Medicaid models that directly influenced federal and state payment reforms. (See page 1 for an article on the center's latest innovative research, exploring the use of speech-processing technology for early detection of health conditions.)

"Through our focus on investigating evidence-based practices, we've been able to help home care organizations in the U.S. and across the globe maximize the effectiveness of the care they provide," notes Dr. Kathryn Bowles, Director of the VNS Health Research Center and Professor and van Ameringen Chair in Nursing Excellence at the University of Pennsylvania. "In today's health care landscape, as the industry pivots more and more to home-based care, I believe our work is more essential than ever."

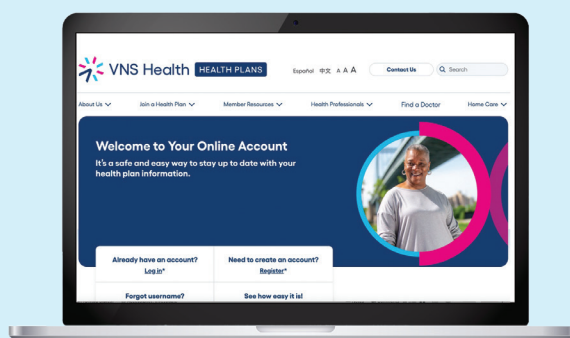


Over the three decades since VNS Health's Research Center was launched, its investigators have conducted research and developed numerous strategies to prevent rehospitalizations and improve care management quality. The center has also worked with government officials to implement important new home care policies.

VNS Health Launches Online Portal for Health Plan Members

Following the launch of a new member portal this summer, individuals enrolled in VNS Health's Medicare and Medicaid plans now have 24/7 online access to important information about their health plans. Health plan members can use the portal to look up their benefits, download and print out a temporary ID card, message their health plan representatives, and more.

The portal is available to members of all five health plans administered by VNS Health: VNS Health Total, an integrated Medicare-Medicaid plan; VNS Health's Medicare Advantage plans, EasyCare and EasyCare Plus; the organization's Medicaid Managed Long Term Care (MLTC) plan; and SelectHealth, a Medicaid special needs plan.



"Our goal is to make it as easy as possible for our plan members to access their health plan information when, where and how they want to," explains Lauren Caralyus, Associate Director, Project Management, Health Plans. Other features and functions will be added to the portal in coming months, adds Caralyus.

The new portal for health plan members complements VNS Health's recently launched portal for its health plan provider networks, which offers providers—including hospitals, physician practices, licensed home care services agencies (LHCSAs) and durable medical equipment suppliers—online access to authorizations, claims, member status and other key information.

Analyzing Speech Patterns

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The Research Center team has shown that when audio recordings of interactions between home care nurses and their patients are analyzed using their tool, it improves the ability to predict which patients are at risk of hospitalizations or emergency department visits. "Our latest pilot study, published in the *Journal of the American Medical Informatics Association*, found that adding speech recognition to risk-prediction models increases their accuracy by 26% in identifying patients who may need hospitalization or emergency care," Topaz notes. "This breakthrough underscores the importance of analyzing verbal communication in assessing patient risk."

The team is now creating a database of 500 such recordings. That database will then be used to refine the speech-processing algorithm



further, by determining exactly which data points are most predictive of hospitalization and emergency department visits in a home care setting.

"This leading-edge artificial intelligence research unlocks a new frontier in personalized health care," adds Topaz. "By understanding these subtle changes in speech, we are moving towards a future where we can identify health risks before they become crises, revolutionizing home care and patient monitoring."

Helping Hospice Patients and Family Members Achieve End-of-Life Goals

Having a clear, shared understanding of a hospice patient's goals is never more important than in the patient's final days, when worsening symptoms can potentially lead a family member to call 911—sending the patient to the hospital in an ambulance when they would prefer to remain at home, and inadvertently leading to the revocation of hospice services.

To help ensure hospice patients, family members and their care team are all aligned on end-of-life goals throughout the patient's time in hospice, VNS Health Hospice Care has begun providing its team members with enhanced training in compassionate conversation and listening skills, and is also coaching them in the use of a detailed guidebook on end-of-life conversations from the Institute for Healthcare Improvement.

The guidebook is now in use by all VNS Health Hospice Care teams, and the information it generates is being integrated into patients' electronic medical records to help guide delivery of care. The booklet, "Your Conversation Starter Guide," asks a series of questions that patients and family members can discuss with the care team. These include, "What does a good day look like for you?" and "What or who supports you during difficult times?"

VNS Health Hospice patients and their family members receive the conversation guide when they are admitted into hospice care, and care team members then use it on an ongoing basis.

"Every team member on every single visit is expected to keep the conversation going," says Noreen Coyne, a registered nurse and Associate Vice President, Hospice Education and Clinical Support at VNS Health, who leads the hospice training.

In addition to being trained in use of the guidebook, hospice team members are also receiving enhanced instruction on overall conversation skills. "The overarching theme of this skills training is the importance of focusing on individuals as a person, not a patient," says



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Joseph Bleiberg, Queens Lead Social Worker for VNS Health, who leads this part of the training.

Such conversations can help clinicians support quality of life at end of life. For example, Joseph says, when the team asked a Queens patient what a good day looked like, he said fishing at the Bayside Marina. That was a goal the VNS Health Hospice care team could—and did—deliver on, mindful at the same time that his "good day" might be different in a few weeks' time. "Our patients set the goals," says Joseph, "and we help meet them."

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usually go on for six to eight weeks, focus on cognitive-behavioral techniques and coping strategies—for example, helping children with anger issues identify what's causing them to act out, and then working with child, teacher and family to neutralize those triggers.

"Students are typically referred to us by one of the school's social workers or guidance counselors, at which point the parents then need to okay the treatment," explains VNS Health's Patricia Payne-Marsky, Associate Director, Behavioral Health. "The goal is always to stabilize the child so they can participate in normal classroom activities." Once the six to eight weeks are over, students and their families are connected with ongoing resources as needed—sometimes a behavioral health provider in the community, and in other cases social support systems.

In practice, Promise Zone clinicians act a lot like behavioral health detectives, seeking out underlying causes. "One child was falling asleep at school," recalls Keshia Lewis, a VNS Health psychiatric social worker who oversees the Promise Zone program. "It turns out his family was living in a shelter and a sibling had autism, all of which was keeping him up at night." In another case, a child's withdrawn behavior was traced to deep-seated—but unexpressed—trauma caused by his sister's death from asthma.

“We’re addressing mental health issues early in life to prevent more serious problems later on.”

While the program centers on child counseling, Promise Zone clinicians also host in-person and virtual workshops for teachers and parents at participating schools, where behavior management and other skills are taught. The program team includes a family advocate as well, who works with children's families to address issues related to their living situation.

Last year, the state-funded program, which is part of VNS Health's Behavioral Health services, worked with 240 youngsters across its nine Bronx schools. While each child and family's case is unique, one common theme linking them is a sense that

the Promise Zone has made a significant and lasting difference in their lives.

"Once children finish the program, our door is still always open," Lewis notes. At its core, she adds, "The Promise Zone is about addressing mental health issues early in life, to prevent more serious problems later on. It's really a wonderful program. I think it should be in every school!"



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