

Vocxi Health

Category:

Best Startup

Company Name:

Vocxi Health

Turnover and/or Funding:

Vocxi Health was founded in September 2022 and has raised over \$9 million in venture capital and over \$10 million in non-dilutive funding to date.

The company's funding strategy emphasizes strategic alignment and sustainability, with early support from Boston Scientific and the University of Minnesota (via spinout IP and licensing), institutional investment from University of Minnesota Discovery Capital, Engage Venture Capital, and deep engagement from a U.S.-based family office with a strong life sciences track record.

Vocxi's non-dilutive support includes a \$5 million Congressional appropriation for FY2026 from the U.S. Department of Defense, specifically targeted toward threat detection applications of its MyBreathPrint® platform. Additional research funding has been awarded through grants and clinical collaborations with MD Anderson Cancer Center, University of Minnesota, and the University of Colorado Center for Combat Research. The company also participates in the Blue Knight accelerator, a joint initiative by BARDA and Johnson & Johnson Innovation, positioning Vocxi within a global network of companies tackling health security, pandemic response, and bio-threat preparedness.

While Vocxi is pre-revenue, the company is advancing a multi-indication clinical validation strategy that includes lung cancer, sepsis, ovarian cancer, and advanced adenomas in human studies, as well as splenic tumor triage and canine heart failure in veterinary applications. The modularity of the MyBreathPrint® system—designed to detect diverse physiological states via a common sensing and AI architecture—supports a streamlined regulatory and commercial strategy. This allows for targeted indication launches while enabling rapid expansion into adjacent markets through data and algorithmic retraining rather than hardware modification.

Vocxi is currently preparing for its next fundraising round, aiming to expand its clinical sites and initiate regulatory engagement with the FDA and Center for Veterinary Biologics, while evaluating strategic pathways for commercial launch.

The company's long-term vision is to enable decentralized, non-invasive diagnostics at global scale-serving patients in hospitals, rural clinics, military units, and even veterinary settings. With rising demand for fast, infrastructure-independent diagnostic tools --fueled by public health threats, chronic disease burden, and global instability -- Vocxi's funding and development model is designed to deliver mission-ready innovation that improves the human (and animal) condition worldwide.

Sub-Category:

Medical Technology / Digital Health

Corporate history (creation, key milestones, main funding,...)Information on Condition / Disease and need for solution / product (prevalence, existing treatments / solutions):

Vocxi Health was founded on September 12, 2022, to solve one of medicine's oldest challenges: detecting disease early, accurately, and non-invasively - at scale. Born out of the University of Minnesota and Boston Scientific's innovation program, Vocxi's founding team recognized the untapped potential of exhaled breath. What began as a research collaboration evolved into a breakthrough: digitizing breath chemistry using quantum-powered sensors to unlock diagnostic insights through AI/ML. With foundational patents from Boston Scientific and the University of Minnesota, Vocxi launched as an independent company to bring this paradigm-shifting technology to the world.

At the core of Vocxi's innovation is MyBreathPrint® - a handheld, cloud-connected diagnostic platform that analyzes exhaled breath in 60 seconds. It uses a cross-reactive array of quantum varactor sensors, functionalized with custom chemistries, to measure thousands of volatile organic compounds (VOCs). Machine learning models then classify the resulting \"breathprint®\" to detect early signs of disease or toxic exposure - no lab processing, blood draws, or infrastructure.

Vocxi's leadership team bring expertise from diagnostics, medtech, and products deployment at global scale. CEO Ping Yeh is a serial entrepreneur and cancer survivor, who has developed and commercialized many new innovative technologies. Randy Schiestl, COO, formerly served as Global VP of R&D at Boston Scientific, where he led concept-to-launch programs. Greg Sherwood, CTO and founding scientist, is a former Senior Fellow at Boston Scientific with deep expertise in breath-based sensing systems and over 80 granted patents in medical technologies. Raia Finc, Chief Product Officer, previously was a Principal Lead Scientist at Boston Scientific. Collectively, the team has brought over 30 FDA-cleared products to market - spanning diagnostics and devices - and their experience in high-complexity, regulated environments ensures Vocxi is built for real-world impact.

Vocxi is focused on urgent diagnostic challenges:

- Lung cancer claims over 1.8 million lives annually worldwide. In the U.S., less than 6% of eligible individuals receive low-dose CT scans due to cost and access.
- Ovarian cancer, one of the deadliest cancers in women, has no simple screening method.
- Advanced adenomas (precancerous colorectal polyps) are a planned indication with Dr. Goffredo (University of Minnesota).
- Sepsis - remains a top cause of in-hospital mortality.
- Toxic exposures - fentanyl, cyanide, and xylazine - are rising threats in both civilian and military settings.
- In veterinary medicine, dogs with splenic tumors face \$14K emergency surgeries despite a 50% benign rate.

Vocxi addresses these needs through a single, flexible platform. More than a device, it is a universal diagnostic architecture - versatile, host-based, and rapidly deployable across species and use cases.

Vocxi has raised \$9M in venture capital and \$10M in non-dilutive funding. In 2025, the company gained support from Rep. McCollum in a \$5M in Congressional appropriation (FY26 DoD budget) and was selected to join Blue Knight - a global health security accelerator backed by BARDA and Johnson & Johnson Innovation.

Vocxi exists to transform diagnostics - not by changing a disease, but by changing when it's found, who can access it, and the positive options created through early detection.

History of the development of the solution/product (Intellectual Property, preclinical and clinical datas, development collaborations):

MyBreathPrint® was developed as a new diagnostic framework -- not just a new test. The platform integrates quantum-powered, chemically functionalized sensors, chemical informatics, and machine learning to detect diseases and exposures through exhaled breath. Designed to be analyte-agnostic and rapidly adaptable, the system is built for field deployment, point-of-care use, and scalable global rollout.

The technology originated within Boston Scientific's advanced R&D program and was spun out to Vocxi Health in 2022 via exclusive licensing agreements with Boston Scientific and the University of Minnesota. These rights include foundational IP for sensor design, chemical functionalization, and breathprint classification. Vocxi now holds 40 granted patents and 29 pending applications, with more than 15 years of patent life on core filings.

Clinical and Preclinical Highlights:

Lung Cancer (University of Minnesota - Cobalt2 Study)

In a study of 100 patients, MyBreathPrint® achieved 88% accuracy, 91.9% sensitivity, and 76.9% specificity in detecting lung cancer versus healthy controls using LDA classifiers. The study showed strong statistical significance ($p \ll 0.05$), validating the breath-based approach for early lung cancer detection.

Lung Cancer (MD Anderson Pilot Study)

The ongoing pilot study at MD Anderson Cancer Center aims to enroll 200 patients to assess the concordance between MyBreathPrint® device results and tissue biopsy findings in individuals with suspected lung cancer. As of now, 60 patients have been enrolled. Preliminary analyses are underway to evaluate the breathprint model's ability to detect clustering of breath signatures in cancer-positive patients, with full statistical validation pending as the study progresses.

Sepsis (Pneumonia-Induced, University of Minnesota)

Using PLS-DA modeling, the breathprint system separated sepsis-positive patients from healthy controls. A validated threshold at Component 1 = 0.5 demonstrated statistically significant separation ($p \ll 0.05$), suggesting potential for early host-based triage in acute care settings.

Heart Failure (Canine Model, University of Minnesota)

MyBreathPrint® distinguished dogs with active heart failure, those approaching failure, and healthy controls using PCA and LDA classifiers. Group separation showed strong statistical significance ($p \ll 0.05$), confirming value in veterinary cardiology monitoring.

Toxic Exposures -- Fentanyl & Cyanide (Porcine Models, University of Colorado & Center for Combat Research)

MyBreathPrint® detected toxic exposures within 10 seconds, identifying distinct VOC signatures for each agent. This outpaces traditional blood assays and positions the platform for rapid use in military and emergency scenarios.

All studies rely on cloud-connected AI models trained on raw sensor data. The platform's design enables new disease models to be added through supervised or unsupervised learning -- making MyBreathPrint® a continuously evolving diagnostic engine.

Vocxi's development strategy includes collaborations with MD Anderson, University of Minnesota, Ethos Discovery, and University of Colorado, plus inclusion in the Blue Knight accelerator (BARDA & Johnson & Johnson Innovation). Support from the U.S. Representative McCollum (Ranking member of the Defense Appropriations Committee) and major family offices continues to accelerate deployment across clinical, veterinary, and national security domains.

Why this drug or device is innovative, the broad implications for future research, and/or how it will improve the human condition:

MyBreathPrint® defines a new category in medical diagnostics -- a non-invasive, analyte-agnostic, multi-disease breath analysis platform. It fuses quantum electronics, advanced sensor chemistry, and machine learning to extract diagnostic insights from exhaled breath in real time.

Unlike traditional diagnostics, which rely on lab-based workflows, analyte-specific reagents, or centralized infrastructure, MyBreathPrint® digitizes the chemical composition of breath to produce a unique \"breathprint®\" signal. That signal reflects complex physiological changes -- enabling multi-disease detection without the need for sample prep, blood draws, or lab processing.

What Makes It Innovative:

Cross-Selective Sensor Array

MyBreathPrint® uses a 60-sensor array functionalized with diverse chemistries, each tuned to chemical families. Together, they generate a high-dimensional response surface that captures subtle differences between disease states -- a foundational departure from single-analyte tests.

Cloud-based Machine Learning

AI models trained on raw sensor data enable supervised and unsupervised learning across disease types. New conditions can be added through data and model updates -- not hardware redesigns -- turning diagnostics into a living, evolving platform.

Host-Based Detection

Instead of identifying a specific pathogen or chemical, MyBreathPrint® measures how the host(individual) is responding. This makes it powerful in early-stage or ambiguous presentations -- ideal for triage, emerging diseases, and scenarios where causative agents are unknown or evolving.

Truly Portable and Infrastructure-Free

The device is handheld, battery-powered, and delivers results in 60 seconds. No consumables. No calibration cartridges. It works just as well in a hospital as in an ambulance, rural clinic, veterinary office, or field tent.

Impact on Human and Animal Health:

For cancer screening, it can bring early detection to underserved and hard-to-reach populations.

For infectious diseases, it offers a host-based triage tool to manage surges and improve response time.

For veterinary care, it may reduce unnecessary surgeries and improve outcomes for companion animals.

For toxic exposures, it enables first responders and military personnel to detect chemical threats instantly.

This innovation doesn't aim to replace existing diagnostics -- it redefines the diagnostic framework itself. Breath becomes a digital fingerprint of health -- interpretable by AI, deployable anywhere, and continuously improvable as datasets grow.

Relevance to Today's Global Health Security:

With escalating geopolitical conflict and increased concern over chemical, biological, radiological, and nuclear (CBRN) threats -- including dirty bombs and synthetic opioids -- the need for fast, portable, host-based diagnostics is urgent. As war intensifies in parts of the Middle East and public health agencies remain on alert across the U.S. and Europe, MyBreathPrint® offers a frontline tool for national readiness -- capable of identifying exposures even before symptoms emerge or lab tests are available.

Vocxi's platform represents not just healthcare innovation, but a new layer of global health and defense infrastructure. It is built not just for hospitals -- but for the world we live in now.

As more indications are validated, MyBreathPrint® could become the stethoscope of molecular diagnostics -- simple, fast, and globally deployable. It improves the human condition not by changing what we know -- but by changing how quickly we act.

Please provide appropriate references (PubMed, Abstract, Website):

Website: <https://vocxihealth.com>

Scientific Studies and Abstracts (PPT Attachment)

1. Vocxi Health - ACS Nano Paper on Sensor Platform Capman, N. S. S., Zhen, X. V., Nelson, J. T., Chaganti, V. R. S. K., Finc, R. C., Lyden, M. J., Williams, T. L., Freking, M., Sherwood, G. J., Bühlmann, P., Hogan, C. J., & Koester, S. J. (2022). Machine learning-based rapid detection of volatile organic compounds in a graphene electronic nose. ACS Nano. Advance online publication. <https://doi.org/10.1021/acsnano.2c10240>
2. Univ. of Minnesota Poster on Vocxi Health Evaluation of High-Risk Nodules Cho, R. J., Peterson, G., Zhen, X., Nelson, J., Sherwood, G., Finc, R., Lyden, M., Hogan, C., Williams, T., Bühlmann, P., & Koester, S. J. (2024). To evaluate a proprietary breath analyzer in the evaluation of high-risk lung nodules for non-small cell lung cancer: Single-center feasibility study [Abstract]. American Journal of Respiratory and Critical Care Medicine, 209, A6874. <https://www.atsjournals.org>
3. Lung Cancer Pilot (MD Anderson Cancer Center) - In process
Ongoing 200-subject study using MyBreathPrint® for early detection. Interim results show promising unsupervised clustering of cancer-positive subjects.

4. Sepsis Detection (University of Minnesota & Vocxi Health)

In a human study conducted with the University of Minnesota, MyBreathPrint® successfully differentiated pneumonia-induced sepsis patients from healthy controls using breath-based VOC analysis, achieving statistically significant separation ($p < 0.05$) via PLS-DA modeling.

- Vocxi Health Inc. & University of Minnesota. (2025, June 26). Early detection of volatile compounds for rapid detection of sepsis from pneumonia: Exploratory data analysis summary.

5. Heart Failure in Canines (University of Minnesota)

Canine model study stratifying heart failure progression via breath signatures, with validated statistical separability. ($p < 0.05$).

- Vocxi Health & University of Minnesota. (2023, November). MyBreathPrint® heart failure in canine model: Technical review and analysis summary [Internal report]

6. Toxic Exposure Detection - Cyanide (University of Colorado Anschutz Medical Campus & Center for Combat Research)

In collaboration with the University of Colorado Center for Combat Research, MyBreathPrint® successfully identified unique and statistically significant VOC breathprint changes in porcine models within seconds of cyanide administration, demonstrating the device's potential for rapid detection of toxic exposures

Preclinical porcine models showing rapid detection of toxic exposure within 10 seconds post-inhalation.

- Vocxi Health & University of Colorado Center for Combat Research. (2024, April 8). Exhaled breath analysis of porcine during cyanide exposure using MyBreathPrint® prototype system [Technical report]. Internal study.

7. Toxic Exposure Detection - Fentanyl (University of Colorado Anschutz Medical Campus & Center for Combat Research)

In collaboration with the University of Colorado Center for Combat Research, MyBreathPrint® detected distinct and time-sensitive changes in porcine breath VOC profiles following fentanyl administration, with sensor-specific responses confirmed via heatmaps and principal component analysis (PCA)

- Sherwood, G. (2024, August 6). Exhaled breath analysis of porcine during fentanyl exposure using Vocxi Health MyBreathPrint® prototype system [Technical report]. Vocxi Health, in collaboration with the University of Colorado Center for Combat Research.

References File Document upload:

[Vocxi Health Deck_2025Q2_Clinical_results_PrixGalien.pdf](#)
[0_VocxiHealth_VOCDetectionMLGraphene2022.pdf](#)

VocxiHealth_Porcine Cyanide Exposure White Paper.pdf
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