

Canary Medical

Category:

Best Startup

Company Name:

Canary Medical

Turnover and/or Funding:

NA

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):

Founded in 2012 by medical doctor and entrepreneur Dr. William Hunter (the co-inventor of the TAXUS® Drug-Eluting Coronary Stent) and a team of medical engineers and data scientists, Canary Medical developed and commercialized the world's first smart implantable sensor in partnership with global orthopedics leader, Zimmer Biomet. Persona IQ The Smart Knee, was first used in surgery in October 2021 at the Hospital for Special Surgery in New York City. Knee and hip replacement are the most common procedures performed annually in the United States. In addition, total knee replacement procedures are growing rapidly and are estimated to surpass 1.38M annually by 2030. While a common procedure, studies have shown that 1-in-5 knee replacement patients are dissatisfied with the outcome of their surgery. To address this issue, Persona IQ provides consistent day-to-day, month-to-month and year-to-year observations on every patient's post-surgical progress autonomously for up to 20 years. There's nothing for the patient to wear, charge or remember.

Kinematic and activity data is collected each day from patients post-surgery and is aggregated across the patient population. Clinicians can access and use this information to view their patients' recovery - a contextualization of a single patient's journey against benchmarks. Subsequently, Persona IQ can be used to identify at-risk patients for complications before they become more difficult to treat. Canary Medical believes that the days of the clinician losing sight of their patient's recovery and health status after their last in-person visit will soon be a thing of the past. Our products offer

the ability to effectively monitor patients remotely and, in the future, that will be the standard of care, supporting both clinicians and patients in their treatment and recovery.

The need to address patient satisfaction, improve patient outcomes and reduce the overall cost of care is not confined to knee replacement. Canary's smart implants have received Breakthrough Designation by FDA (knee, hip, shoulder and spine), the first company to receive four of these novel grants. Smart implants are in development for cardiology (Canary Medical's cardiac physiological monitor completed first-in-human trials in December 2023), trauma and aesthetics applications, with many others to follow. Canary Medical's proprietary data and analytics ecosystem supports all of the Company's smart implants, bringing raw data to life for clinicians and patients.

Canary Medical's main source of funding has been private investors and corporate partners.

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

Canary's IP strategy is based on pursuing IP protection for all its inventions; and retaining ownership and control of the assets. This allows Canary to capture the upside of its technological and business model advances.

Canary Medical holds hundreds of issued and pending patents for our sensor technology and proprietary data algorithms. The company has IP assets in chip and sensor architecture, implant design, battery and power consumption, antenna design, methods for transmitting data from the implant to an external source and to the cloud, data algorithms, user interfaces to access the data and methods of monetization.

From a clinical perspective, for Persona IQ The Smart Knee, recently in full launch, Canary Medical partners with Zimmer Biomet and leading orthopedic surgeons to publish clinical data supporting the effectiveness and utilization of the smart implant. This clinical data has been presented at key orthopedic conferences and papers have been published in respected outlets such as the Journal of Arthroplasty. In 2025, Canary submitted 11 abstracts to both AAOS and AAHKS, the most prestigious Academies in orthopedics. These abstracts prove out the promise of the technology, focusing on the prediction and diagnosis of some of the most expensive complications of TKA, including DVT, periprosthetic joint infection, implant loosening, knee stiffness, rehospitalization and emergency room use. The data will be released in late October of 2025. In addition, Canary Medical's Chief Surgical Officer Dr. Fred Cushner is a practicing orthopedic surgeon at the Hospital for Special Surgery in New York City. He leads a group surgeon

advisors to support and inform the clinical work of the organization.

Our cardiovascular monitoring device successfully completed first-in-human trials with measures of mitral regurgitation in patients that have subsequently been bolstered with pulmonary artery pressure and respiratory signals in preclinical models. Each of these measures is derived from a single subcutaneous, non-invasive and non-blood contacting device that is inserted in a doctor's office (not a cath lab) and requires no compliance from the patient.

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

Canary Medical's smart knee implant is first-to-world technology. Future applications such as smart hip, shoulder and spine implants are likely to be so as well. Canary Medical's innovation has been recognized by FDA, with four of the Company's smart implants granted Breakthrough Designation (knee, hip, shoulder and spine). The FDA Breakthrough Devices Program is a voluntary program for certain medical devices that provide for more effective treatment or diagnosis of life-threatening or irreversibly debilitating diseases or conditions. The Breakthrough Devices Program is intended to provide patients and clinicians with timely access to medical devices by speeding up development, assessment and review for premarket approval, 510(k) clearance and De Novo marketing authorization.

In addition to the innovation of smart implants, the data that is being gathered today by Canary Medical (more than 6B unique patient datapoints already) is unprecedented and will continue to grow. Today, doctors diagnose and treat symptomatic patients using imaging and subjective reporting. Canary's asymptomatic, objective remote monitoring enables predictive analytics and care optimization. This allows earlier, less invasive, less expensive and more effective treatment, improving outcomes and reducing overall costs.

The future application opportunities for data analysis are immense. With the use of Canary's technology, complications such as DVT, periprosthetic joint infection, implant loosening, hospital readmission and emergency room use can be predicted or identified early, forgoing costly medical intervention and provide savings the healthcare system overall. Also, for patients recovering as expected, imaging and in-person visits may be unnecessary for post-surgical follow up. In addition, for years clinicians have known that many illnesses and conditions can be diagnosed just by analyzing a person's gait. Canary Medical envisions a future where a patient can receive a smart implant and their clinician will have the ability to understand their overall health and identify disease or illness remotely by reviewing their personalized gait analytics. By intervening early, a patient has the potential to experience better outcomes and at a lower cost of care.

Another component of Canary's standout technology is the potential to reduce healthcare costs and provide access for patients in remote locations. Canary's technology facilitates remote monitoring of post-surgical recovery progress, enabling clinicians to address adverse events and complications earlier, thereby avoiding expensive medical intervention. For remote patients recovering smoothly, Canary's data may help patients avoid unnecessary long-distance travel.

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

<https://journaloei.scholasticahq.com/article/126156-integration-of-data-across-the-episode-of-care-via-a-robotic-knee-system-implanted-tibial-sensor-and-smartphone-based-care-management-platform-a-case-report>

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<https://mail.beckersspine.com/featured-insights/59781-orthopedic-smart-implants-can-reestablish-normals-in-care-disc-surgeon-says.html>

<https://bonezonepub.com/2024/05/07/data-analysis-leads-to-cost-effective-knee-replacements/>

<https://jocr.co.in/wp/2023/08/10/manipulation-under-anesthesia-following-tka-with-persona-iq-a-case-series/>

<https://journaloei.scholasticahq.com/article/35270-the-talking-knee-is-a-reality-what-your-knee-can-tell-you-after-total-knee-arthroplasty>

<https://canarymedical.com/>

<https://www.linkedin.com/company/canary-medical-inc.>

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