

## Needle free injection system technology by IntegriMedical- Building the Future of Medicine

January 2, 2025 | Analysis

**IntegriMedical's needle free injection system stands out as the only device of its kind**



Founded in 2020, IntegriMedical embarked on a mission to revolutionise healthcare by tackling one of the most persistent challenges- the fear of needles and the discomfort of traditional injections. Guided by a shared vision, Scott McFarland, Ankur Naik, Sarvesh Mutha, and Mark Timm combined over two decades of unparalleled expertise in medical device innovation to pioneer the revolutionary Needle-Free Injection System (N-FIS).

At the forefront of innovation, the ergonomically designed N-FIS leverages cutting-edge jet-injection technology to eliminate needles, delivering medications with precision while drastically reducing pain and discomfort. This breakthrough innovation underscores IntegriMedical's steadfast commitment to patient-centric care and transformative healthcare solutions.

*Sarvesh Mutha, Managing Director, IntegriMedical highlights, "Every challenge presents an opportunity for innovation. At IntegriMedical, we've embraced these obstacles to create a technology that not only addresses pain points but transforms how injections are perceived and delivered."*

With state-of-the-art research and manufacturing facilities across USA, India, Hong Kong, and Hungary, IntegriMedical seamlessly integrates global expertise with in-house operations to uphold the highest standards of quality, regulatory and adaptability. As a trailblazer in drug- delivery innovation, the company continues to redefine patient care, driving exceptional outcomes and shaping the future of healthcare on a global scale.

### Tackling Key Challenges

Needle phobia, or trypanophobia, is a pervasive issue affecting nearly 20-50 per cent of children and 20-30 per cent of adults globally. Beyond the psychological barriers, traditional needles present significant physical risks, including needle-stick injuries and cross-contamination, compromising both caregiver safety and patient care efficiency. IntegriMedical's N-FIS provides a transformative solution, effectively addressing these challenges with precision, safety, and innovation.

IntegriMedical's N-FIS stands out as the only device of its kind featuring a robust stainless-steel body, designed for durability and reliability. Its ergonomic design ensures superior comfort and precision, catering to both patients and caregivers. Utilising a high-pressure, spring-driven stainless-steel piston, N-FIS delivers medication uniformly in a consistent and predictable pattern.

During injection, a fine jet stream passes through a micro-orifice in the skin, ensuring precise medication delivery while minimising pain, discomfort, hazards of needles, and tissue damage, a significant improvement over traditional injection methods. N-FIS is a versatile innovation, with applications spanning vaccinations, pain management, growth hormone therapy, and in-vitro fertilization (IVF), offering a revolutionary solution that ensures precise, safe, and painless medication delivery across diverse medical needs.

*Mark Timm, Chief Operating Officer, IntegriMedical emphasises, "What makes N-FIS truly remarkable is its adaptability across multiple medical applications. Whether it's a rural immunisation camp or a sophisticated urban healthcare facility, N-FIS delivers unmatched reliability and ease of use."*

Healthcare faces significant challenges such as needle-stick injuries and needle phobia, affecting both patients and caregivers. Traditional needle-based injections, though widely used, often exacerbate these issues. N-FIS provides a revolutionary solution for patients with needle phobia and children requiring frequent immunisations, eliminating the fear and discomfort associated with traditional injections. Its compact, portable, and versatile design ensures its suitability across diverse healthcare settings.

Backed by a US patent and regulatory approvals such as CDSCO, CE, MDSAP, and ISO 13485, N-FIS meets the highest global standards for safety and effectiveness. By addressing critical aspects like pain management, accessibility, and patient compliance, N-FIS redefines injection delivery, offering a seamless and patient-friendly experience.

*According to Ankur Naik, Co-founder, IntegriMedical, "We believe the future of healthcare lies in blending innovation with empathy, delivering solutions that enhance patient experiences without compromising safety or efficiency."*

## **Growth, Milestones, Present Status, Strategy, Future Plans**

IntegriMedical has achieved noteworthy milestones, with its patented technology earning widespread recognition and trust from paediatricians, general physicians, and healthcare providers in diverse settings, from bustling metropolitan hubs to remote rural areas. The growing adoption of N-FIS, fuelled by positive feedback from doctors, has facilitated its integration into leading corporate hospital chains and clinics across tier-1 and tier-2 cities.

Globally, the N-FIS technology has witnessed remarkable success, achieving over 45,000 needle-free injection administrations in a short span signalling a promising trajectory of rapid growth and transformative impact in healthcare.

Recently, Hungary's Heim Pál National Paediatric Institute embraced N-FIS, revolutionising care for over 4,000 haematology-oncology patients by dramatically reducing pain and anxiety associated with traditional injections. Aligned with the World Health Organization's (WHO) recommendation for safe injection technologies and its call for governments to adopt such advancements, N-FIS holds immense potential to transform healthcare practices worldwide, setting a new benchmark for patient comfort and safety.

Looking ahead, IntegriMedical is on track for rapid growth, fuelled by its most significant milestone, a strategic partnership with 'Serum Institute of India', world's largest vaccine manufacturer. This collaboration will play a key role in expanding the reach of N-FIS, especially in vaccine delivery.

The company is also focused on broadening its portfolio of regulatory approvals to enter international markets and collaborate with global foundations to integrate needle-free systems into national immunisation programmes. IntegriMedical will continue to push the boundaries of innovation, ensuring that its technology evolves to meet the ever-changing demands of healthcare providers and patients, shaping the future of patient care on a global scale, further solidifying its commitment to advancing healthcare accessibility.

The global needle-free injection system market is on a remarkable growth trajectory, projected to expand at an impressive CAGR of 14.16 per cent and soar to an astonishing \$27.65 billion by 2028. The rising prevalence of chronic diseases, the lasting impact of global pandemics, the increasing demand for self-injection devices, and rapid advancements in medical technology are driving unprecedented growth in this market. With its cutting-edge innovations, IntegriMedical is uniquely positioned to lead and excel in this dynamic and rapidly evolving landscape.

IntegriMedical's N-FIS is transforming healthcare by eliminating the risks and inefficiencies associated with traditional needles. Fast, safe, and efficient, N-FIS is setting new standards in patient care, revolutionising medication delivery, and enhancing accessibility across the globe.

# Product Needle-Free Technology

