

# Wound care, pressure ulcers and my journey with IGNAZ Technology

This is the first part of a series looking at the work carried out by individuals working in specialised areas of wound care in the UK. Frank Davis is a resident doctor and the co-founder of IGNAZ Technology. Here, he explains his journey.

## Frank Davis

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**W**ound care is an area of medicine that combines clinical expertise, patient management, and, increasingly, technological innovation. Among the most challenging wounds encountered in clinical practice are pressure ulcers — chronic wounds that cause significant morbidity, increase healthcare costs and demand extensive multidisciplinary care.

My work with IGNAZ Technology, a medical imaging company I co-founded during medical school, has been deeply tied to tackling these very challenges. Through IGNAZ Technology, we have sought to develop cutting-edge imaging solutions to revolutionise the early detection and monitoring of pressure ulcers. The journey of building this company — from an idea born out of frustration with current clinical limitations to securing over £75,000 in grant funding — has reinforced my passion for integrating technology into healthcare and, more specifically, wound care.

## My passion for wound care and innovation

My passion for medical innovation and technology was ignited during my time in medical school. I became acutely aware of the limitations in wound assessment, particularly in pressure ulcer management. Visual inspection and subjective scoring systems often led to inconsistencies, and many pressure ulcers were diagnosed too late — when significant damage had already occurred.

This gap in early detection was something I found unacceptable. In an era of artificial intelligence (AI) and high-resolution imaging, why were we still relying on rudimentary assessment techniques? This question drove me to explore how technology could provide a more objective and precise approach to wound care. That curiosity and determination eventually led to the founding of IGNAZ Technology.

## The birth of IGNAZ Technology

IGNAZ Technology started as an ambitious project at medical school, where we aimed to apply advanced imaging techniques to improve wound assessment. Our vision was to use high-

resolution imaging to detect pressure ulcers to aid with earlier intervention and improved patient outcomes.

However, turning this vision into reality was no easy feat. Securing funding was a crucial hurdle. Applying for grants, pitching to investors, and proving the feasibility of our technology took immense effort. Despite these challenges, we successfully raised over £75,000 in grant funding, allowing us to develop prototype imaging tools that could be tested in real-world clinical environments.

One of the biggest lessons I learned during this process was how important it is to bridge the gap between technology and practical application. It wasn't enough to build an impressive imaging tool — it had to integrate seamlessly into existing hospital workflows, be cost-effective, and offer tangible benefits over traditional methods.

Developing IGNAZ Technology also meant engaging in constant refinement. We sought feedback from wound care specialists, hospital administrators and patients to ensure our system addressed real clinical needs. We worked closely with data scientists and engineers to optimise our algorithms.

## The role of technology in pressure ulcer management

Pressure ulcers are largely preventable, yet they remain a significant burden in healthcare settings. They develop due to prolonged pressure on the skin, leading to reduced blood flow, tissue ischaemia and, eventually, necrosis. Early detection is critical because once deeper tissue layers are affected, treatment becomes increasingly complex and resource-intensive.

Interesting goals lay ahead not only for IGNAZ Technology but for the wider wound care community, which include:

- **AI-driven imaging:** Advanced algorithms to analyse skin integrity and detect early-stage pressure ulcers before they are visible to the human eye.
- **3D wound mapping:** By creating detailed 3D models of wounds, clinicians can track ulcer progression with greater accuracy.

## Key words

- Innovation
- Pressure Ulcers
- Entrepreneurship

## Declarations

The author is the co-Founder of IGNAZ Technology

- **Thermal imaging:** Changes in skin temperature often precede ulcer formation. Thermal imaging system helps identify high-risk areas before visible breakdown occurs.
- **Remote monitoring solutions:** Allowing clinicians to assess wounds remotely, improving access to specialised care and reducing unnecessary hospital visits.

### The impact of our work

Through IGNAZ Technology, we have collaborated with hospitals to trial our imaging solutions, refining our models based on real-world clinical feedback. One of our most promising pilot studies, we hope, will be launching in Wales this year and I hope to be writing about its findings very soon.

Beyond the technical developments, this journey has been personally fulfilling. I have had the opportunity to work with experts in AI, wound care specialists and fellow innovators who share a common goal: improving patient outcomes through technology. Securing funding, building a team and navigating the start-up landscape have been incredibly challenging, but they have reinforced my belief in the power of innovation to drive meaningful change in healthcare.

Raising funds for a medical technology startup is never straightforward. We had to demonstrate to investors and grant committees that our approach was both clinically valuable and financially viable. Writing grant proposals, networking with industry leaders, and competing for funding against other promising innovations required perseverance. Yet, through these experiences, I developed critical entrepreneurial skills that have proven invaluable not just for IGNAZ Technology but also for my broader career in surgical research and innovation.

### Challenges and lessons learned

The development of IGNAZ Technology has not been without challenges. One of the most significant barriers we faced was demonstrating clinical utility to hospital decision-makers. Healthcare institutions are often slow to adopt new technology. Convincing clinicians to trust an algorithm for wound assessment required extensive validation studies, user-friendly software design, and clear demonstrations of how our imaging techniques could seamlessly integrate into existing workflows.

Another challenge was balancing technological innovation with cost-effectiveness. Many hospitals operate on tight budgets, meaning any new tool must prove itself both clinically and financially. We had to work closely with healthcare economists to model the cost savings associated with early ulcer detection – demonstrating that by preventing

severe pressure ulcers, hospitals could reduce treatment expenses and shorten patient stays.

Additionally, navigating regulatory hurdles was an essential but complex part of our journey. Medical imaging technology is subject to strict approval processes, and ensuring compliance with regulations requires working with legal experts to guide our clinical trials and data privacy protocols.

Despite these challenges, the experience of building IGNAZ Technology has been transformative. It has given me a deeper understanding of the intersection between medicine, business and technology. It has also reinforced my commitment to finding innovative solutions for real-world healthcare problems, particularly in surgical and orthopaedic settings where wound management plays a crucial role in patient outcomes.

### Looking ahead

Despite our progress, there is still much work to be done. The widespread adoption of imaging technology in wound care faces barriers, including cost, clinician training and integration with existing hospital systems. However, I am confident that with continued research, collaboration and investment, we can make advanced wound assessment tools an integral part of routine clinical practice.

Looking to the future, I see IGNAZ Technology evolving beyond pressure ulcer detection. The technology we have developed has broader applications in wound assessment, from post-surgical wound monitoring to diabetic foot ulcers. As we continue to refine our algorithms and expand our partnerships, my hope is that IGNAZ Technology can contribute to a paradigm shift in wound care – one that prioritises early detection, personalised treatment plans, and better patient outcomes.

For me, IGNAZ Technology represents more than just a company – it embodies my passion for bridging the gap between medicine and technology. As I continue my career in surgery and research, I remain committed to advancing the role of AI and imaging in improving patient care. Pressure ulcers are just one aspect of wound care, but they exemplify a broader challenge in medicine: the need for better diagnostic tools, earlier interventions, and more personalised patient management.

By combining clinical insight with technological innovation, we have the potential to transform how we approach wound care – and that is a mission I am deeply passionate about. ●

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