



Harnessing technology for better wound care in the community

Pioneering wound care technology is transforming patient experience across Swansea Bay, allowing patients to have wounds assessed and monitored from the comfort of their own home.

- Over 1,800 patients have already benefited from this new digital approach to wound management, which prompts early detection of slow healing wounds and engages patients in their own care.
- Life Science Hub Wales supported an initial roll out of Healthy.io's technology within Swansea Bay's district nursing team, which has now been extended to other teams across the health board.
- The technology allows for expert input on wound care at the touch of a button. It's streamlining handover of information within the multidisciplinary team, and saving time and paperwork.
- This project has prompted work to develop a more consistent approach to wound care management across Wales.



Wound care services account for a significant amount (6%) of NHS Wales' budget, with an annual cost of around £330m.

Some wounds take a long time to heal and need careful management. Caring for wounds in the community often requires multidisciplinary working between different healthcare professionals to monitor for and prevent infection and encourage timely healing.

Improper assessment of wounds can lead to unnecessary suffering for patients and/or unnecessary follow up visits and outpatient appointments, causing capacity issues and delays for patients accessing services.

About the project

Swansea Bay University Health Board (SBUHB) were keen to explore how adopting a digital approach to monitoring and assessing chronic wounds could drive better patient outcomes and lead to health system efficiencies.

Healthy.io's **Minuteful for Wound** was already being used within similar settings in England with good results. The technology helps clinicians make better care decisions by using a smartphone camera to accurately capture wounds and analyse their progress, recording the healing progress digitally and enabling it to be shared with the wider care team.

The project to test the technology within Swansea Bay's district nursing team began in summer 2021. It was funded by a grant from the Welsh Government's Digital Solutions Fund, with ongoing project management support from Life Sciences Hub Wales.

Due to the success of the initial project the evaluation has since been extended, with a wider roll out now taking place for all district nursing teams and wound clinics across the health board.

Partners and funding

Partners

- Swansea Bay University Health Board
- Healthy.io
- Life Sciences Hub Wales

Funders

Initial funding from the Digital Solutions Fund and then further investment from SBUHB to extend the roll out to other teams.



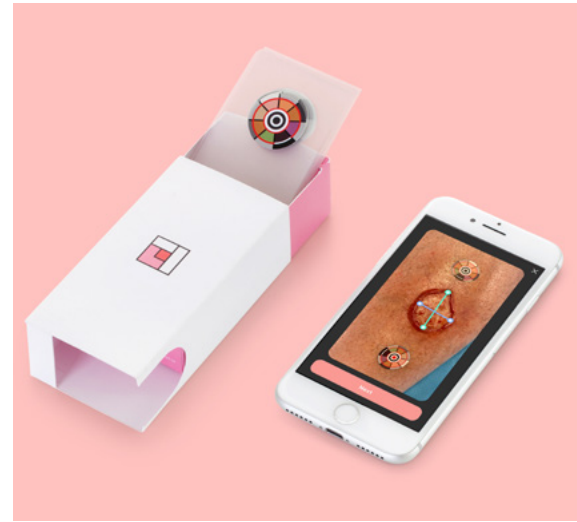
How does digital wound management work?

Healthy.io's digital solution allows district nurses to travel to patients as part of regular check-ups and scan wounds with an app. This app effectively transforms the camera of a smartphone or tablet into a lab-grade diagnostic scanner.

Previously nurses would have carried out a manual measurement of a wound and filled out a paper assessment. If they felt input was needed from a tissue viability nurse or another professional, a further appointment would be made for the patient so that the wound could be assessed.

Instead, nurses use Minuteful for Wound to scan the wound. The app uses artificial intelligence to detect the edges of the wound, calculate the area, and detect the tissue distribution within the wound. This data is then compared to previous scans, giving information on how the wound is progressing over time.

Clinicians also complete an assessment within the app and everything is stored within the portal, allowing other members of the wider multidisciplinary team to oversee and input into care.



Benefits of this new approach

Using the technology is leading to:

- ▶ **Better wound management:** using the tool prompts early detection of wounds that are slow to heal, allowing for earlier intervention and a reduction in unnecessary suffering for the patient.
- ▶ **Patient activation and wellbeing:** clinicians are able to involve patients more in their own wound healing journey, enabling them to see progress and encouraging them to engage in self care.
- ▶ **Time and cost savings:** digitising and sharing records reduces the administrative burden on district nurses and streamlines work through a simplified and consistent recording and assessment process.

Support from Life Sciences Hub Wales

- Coordinating the Digital Solutions Fund and bringing suitable partners together.
- Project management and logistics support to get the project up and running.
- Convening partners across Wales to look at developing a national pathway for wound management, and to explore country-wide adoption of digital wound management.



Engaging patients in their own care

Feedback from patients shows that using Minuteful for Wound helps them to feel more positive about their healing progress, and clinicians say they often use the wound images and data to engage people in their own treatment.

100% of patients surveyed by the Swansea Bay district nursing team said using the tool helped them feel more involved in their care, more motivated to embrace their treatment plan and to improve their overall health to aid healing.

Richard Harris, Head of Wound Services at Healthy.io, agrees that having access to the time series of photos within the app is a real benefit.

“When they're with the clinician they can see exactly how their wound is progressing and we found this to have a really positive impact on how motivated patients are to take control of their own wound and their own care.”

“I've got venous ulcers on my legs... I can see [how they're healing] for myself. They tell you the measurements, you know, [it's] coming in, coming in, and [that] makes you feel better then.”

Susan, Patient



Streamlining clinical input and communication

Catherine Davies, Lead Nurse for District Nursing and Wound Clinic, has been part of the team leading the roll out within the health board since the beginning. She says that using the app has provided "more consistency and better communication between staff" and has improved handovers.

Team leaders and tissue viability nurses (the experts on wound care) can oversee wound management remotely, and if wounds are not healing well, they can review scans on the portal and offer specialist input to improve healing and optimise patients' care plans.

Her counterpart in leading the project, Catrin Codd, also stresses how the new technology has helped to relieve work pressures on tissue viability nurses, leading to a 30% reduction in the need for face to face appointments.

Expert input can also be sought from other teams, including microbiology or the pressure ulcer prevention intervention service (PUPIS), all without the need for additional patient appointments.



“ There aren't many tissue viability nurses within district nursing so obviously their time is of the essence. Instead of having to make an appointment and meet [...] at the patients' home, they are able to access the portal and all the information and the pictures and are able to offer specialist advice at that point. ”

Catrin Codd, Interim Lead Nurse District Nursing, SBUHB



Time and efficiency savings for the health system

The new digitised record keeping reduces the administrative burden for staff and has speeded up the time taken to gather and report data, with an immediate transfer to the online reporting system (for example where serious incident forms are completed for pressure ulcers).

Complex wounds can now be cared for by less qualified members of the multidisciplinary team, changing the skills mix needed in teams. While initial assessments are still conducted in person by the tissue viability nurse, follow-up care can be provided by district nurses, with the tissue viability nurse reviewing care via the portal.

Changes have also been made to the staffing of the wound clinic, which was traditionally run by a band 5 registered nurse. The new process has meant the wound clinic can now be run by a band 3 nurse. Redistributing the available staffing budget has enabled the wound clinic to offer an extra 1,872 appointments per year.



Cost and efficiency savings



2,083 hours saved

per year in senior nurse travelling time



36 extra appointments per week

created in the wound clinic



30% less time

for tissue viability nurses on face-to-face reviews



447k sheets of paper

saved per year



£13k per year

saved on staff travel costs and paper use

Achievements overall

Trialling the wound management technology across the district nursing teams has improved communication and multidisciplinary working around wound management, reduced unnecessary clinic appointments, and improved patient engagement with their own care and recovery.

As of March 2023:

- over **1,800 patients** had benefited from the new technology across the health board
- with a total of **3,499 wounds scanned**
- over **21,507 assessments** by district nurses or at the wound clinic.

As with any major change project, getting strong buy-in from staff was vital. Establishing a group of 'super users' and using training sessions as a way to engage with staff and help them understand the benefits really helped with the roll out. **173 clinicians** are now using the app, with new staff being trained all the time.

“ Digital transformation within the NHS is challenging and we recognise that this is asking people to work in a totally new way. We're lucky to have had really good support from Life Sciences Hub Wales to get the project off the ground, and from the project leads in Swansea, who have been excellent at engaging the wider team and making the case for why we are making this change. ”

Jack Tozer, Partnerships Manager, Healthy.io



How Life Sciences Hub Wales supported the project

This work was prompted by funding that Healthy.io received from the Welsh Government's Digital Solutions Fund, an initiative set up during the initial stages of the pandemic to help deliver digital solutions at speed.

Digital Health Ecosystem Wales (a collaboration between Life Sciences Hub Wales and Digital Health and Care Wales) coordinated the application and selection process for the fund. This involved us helping to connect up successful innovations with parts of the Welsh health service that could benefit from them.

We then provided project management and logistics support to get projects off the ground. In Swansea Bay this involved leading weekly meetings to support delivery of the project and troubleshoot any challenges the team faced, and coordinating reporting and communication with the Welsh Government.



A wider legacy across Wales

What started as a small evaluation project has now led to much larger scale work to look at how AI technology can support wound management across Wales, with engagement from Welsh Government, the Welsh Wound Innovation Centre and other Welsh health boards.

In the process of supporting the initial project, Life Sciences Hub Wales brought together a range of individuals and organisations with an interest in wound management. This developed into a management group who are now looking more widely at developing a Welsh pathway for wound management, as well as training needs and technology.

Work is also ongoing to look at the best options for wound management tools to adopt country-wide. The outcomes of this project will feed into that, alongside further work on market analysis (looking at wound management products used across the UK and internationally), evaluating alternative tools and comparing outcomes and cost-benefit analyses.

As a side-result of the project, a previously inactive network for tissue viability nurses and others working with wound management is also being reinvigorated with regular virtual meetings planned. We will continue to offer ongoing support and resources to support this in the future.




“ We are delighted to have facilitated the trial of this pioneering digital tool within Swansea Bay. The long-term legacy from this project is the bigger conversations that are now happening across Wales about better wound care management and how national adoption of this kind of technology could help. ”

Kate Coombs, Head of Programme Delivery at Life Sciences Hub Wales

What next?

Swansea Bay University Health Board is developing a proposal to secure funding for the permanent integration of the wound app within District Nursing and Community Wound Clinic. The District Nursing team are also collaborating with Microbiology, granting them read-only access to the wound app to help decrease antibiotic prescriptions. Additionally, the Pressure Ulcer Prevention and Intervention Service have read-only access, allowing them to offer timely specialist advice to minimise wound healing time.

Submit your enquiry today via our website: lshubwales.com/innovation-enquiry-form

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