



Wounds and Wales: Creating a National Center – Challenges and Opportunities

Prof. Keith Harding,

Dean of Clinical Innovation at Cardiff University, UK

Professor Harding has been working on this for 30 years.

Wales is a poor country. One of the main industries is coal mining.

There are more sheep than people in Wales.

Problem he's trying to address -- the public view of wounds is a small cut that can be treated with a simple Band-Aid.

But REAL wounds are REAL – the reality of diabetic foot disease – it gets SERIOUS, even today.

Wounds have consequences and these consequences contribute to mortality rates.

For 5-year mortality rates, the breast and prostate cancer is considerably lower than the amputation and ischemic ulcers. WOUNDS MATTER. They kill. Why aren't we taking the high mortality rates in instances such as diabetic food disease more seriously? The problem is that people don't prioritize this. They're deforming and disfiguring.

The 5-year mortality rate for a neuropathic ulcer is 45%, for amputation is 47% and for ischemic ulcer... 55%.

How do we guarantee that any patient with a wound will see a clinician that's knowledgeable about wounds and wound healing and will be able to provide good care?

THAT is the challenge when we address wounds and wound healing.

ACCESS. KNOWLEDGE.



How it started:

In 1975, L. E. Hughes published a paper on the topic of “Silicone foam sponge for pilonidal sinus: a new technique for dressing open granulating wounds” in the British Medical Journal. This led to the foundation of WHRU – (wound healing research unit).

The first work on Cardiff wound healing was published in the 1970’s and followed healing, granulation and phases of wound healing.

History, Academic Outputs and Self Sufficiency in Cardiff 1975-2013:

- 1574 Publications 1975-2013
- WHRU in place since 1991
- First Masters course on Wound Healing
- 45 Grants & £15 million funding obtained
- 198 Clinical Studies Undertaken
- 56 Companies linked & £30 million obtained
- 45 MDs/PhDs
- National, European and International Societies
- CITER, EWMA, EPUAP, ETRS, WUWHS

Now, we link academic activity with clinical and commercial – all focused on wounds.

Our current concept for healthy acute wound healing mechanisms (published by Nunan, Harding and Martin) as of 2015 stands at an analysis of the following:

1. Immune system
2. Re-epithelialization
3. Fibroblasts
4. Angiogenesis
5. Innervation

Currently seen as chronic wound abnormalities are:

- Infection/biofilm
- Hyperproliferative epidermis/stalled re-epithelialization
- Persistent inflammation
- Fibroblast senescence
- Impaired angiogenesis



- Fibrin cuffs
- Elevated MMPs

Underlying defects involved in wound healing include:

- Damaged matrix
- Senescent cells
- Non migratory, hyperproliferative edge epithelium
- Inflammatory environment
- Biofilms
- Growth factors deficient
- High proteases
- Infection
- Oxygen deficiency
- Growth factor receptors

In one year, 78,000 people saw their GP for a wound that cost 6% of all Wales health care spending. Wound care including GP visits, dressings, district nurse attendances, out-patient attendances and in-patient episodes totaled, in Wales alone, over the period of this study, GBP 328, 839,408.

A national wound audit from September 28, 2015 – October 2, 2015 followed 8,365 patients, 748 (8.9%) of whom had pressure ulcers with a 95% confidence interval of 8.29% - 9.51%. This was done as a strong collaborative effort between the NHS, the industry and WWIC.

8.9% of these patients had pressure ulcers of varying degrees

30% of all inpatients in Wales had a PI

30% of inpatients in Wales, of the course of this audit, had some type of wound:

- Closed surgical wound
- Other surgical wound
- Infected surgical wound
- Dehisced surgical wound
- Skin tear
- Leg ulcer
- Diabetic foot ulcer



- Traumatic wound
- Lymphoedema
- Wound diagnosis or location unknown

Why is this important?

Deaths in nursing homes due to pressure injuries, as documented in the report, “In Search of Accountability,” classifies the high incidence of PIs in elder care facilities as NEGLECT.

We now have Welsh govt support for this, documented through the report titled “Operation Jasmine”.

What does Operation Jasmine recommend?

The Welsh Government in association with Public Health Wales ensure:

1. Significance of deep pressure ulcers is elevated to that of a notifiable condition
2. Senior clinicians including registrars, GPs and TVNs assume a lead role in preventing avoidable pressure ulcers.
3. Develop a National Wound Registry in association with WWIC
4. Senior clinicians are responsible for notifying Public Health Wales of deep pressure ulcers
5. Where Public Health Wales is informed, there is communication to Health Inspectorate Wales and people’s families

Academic activity in Wales over the years 2015-2016 included:

- Translational funding from MRC/ Wellcome trust
- Links with others in University to build program grant submissions
- 3 MD/PhD degrees awarded
- 25 students enrolled on MSc course
- SSM students from 3 years of U/G MEDIC course
- 32 Posters and Presentations at International meetings
- 18 papers published
- Clinical Innovation in Cardiff University
- Living lab of Clinical Innovation
- Model for other subjects
- First Cardiff University presence in ERDF area



- Building EU bid led by Swansea University
- Additional universities and NHS bodies joined WWIC
- Links with Initiatives in Australia/ Canada/ Singapore who are looking at setting up national centres

We now know that we can improve healing rates by educating nurses. NHS activity for the years 2015-2016 included:

- 60% of Community nurse time spent on wounds
- Community nurse project improved outcomes by 45%
- Practice nurse project improved outcomes by 85%
- First National Wound Audit 8500 patients and 400 staff over a week
- Piloting of Wound Registry with 20,000 patient contacts
- Links with Charities in Wales including Changing Faces and Leg Clubs
- Flynn report- PU's Notifiable disease
- Build of National Wound Registry supported by CMO/CNO/CEO NHS Wales
- Prudent Healthcare
- MOU with multiple UHB/Trusts
- Exploring National TBM contract
- Compulsory online education for clinical staff being developed

Commercial activity over 2015-2016:

- Interactions with over 200 companies
- 15 signed contracts by Summer 2016
- 5 Welsh-based companies have signed contracts
- Launched first co-developed product with Welsh company sold in 20 countries
- Additional funding from Government for Nursing Home project
- 5 inward investments in Wales
- Created 52 new jobs in companies
- First device evaluation for NICE now awarded second grant
- Promoted WWIC at UK/European/USA meetings
- UKTI have focus on wound industry
- First Annual Report published



Lessons learnt through this process and study have included:

- Time scale
- Expected problems
- Unexpected problems

- Impact on staff morale
- Sugar daddy
- Difficult to get early traction so far as Wealth vs. Health is concerned
- Tall poppy syndrome
- Jealousy and envy gene
- Passion
- Pride
- Conviction
- Multiple individuals claiming part parentage now successful
- Sustainability
- Necessity leads to opportunity self-funding

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