

# WELSH WOUND INNOVATION CENTRE



ANNUAL REPORT

November 2015

Leading the Field in  
Wound Prevention & Treatment

## Leading the Field in Wound Prevention & Treatment



### Annual Report

November 2015

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## Message from the Chair



FIONA PEEL

It is my pleasure to introduce the first Annual Report from the Welsh Wound Innovation Centre. This report summarises the key achievements of the organisation over the last year, and also outlines our future plans and aspirations.

The Welsh Wound Innovation Centre (WWIC) was formally launched in September 2014, as a centre of excellence in skin health, wound prevention and treatment. WWIC uniquely brings together the key

voices on wounds in Wales, spanning government, NHS, academia, business and industry and the Third Sector, all of whom play a key role in overcoming the challenges of wound healing and the maintenance of skin health.

This small, in number of staff but large in ambition, company is determined to make a big difference to people who suffer with chronic wound problems and so I am most grateful to all of those who have participated in this journey to date. It has not been an entirely smooth start but we knew that we would have to break new ground along the way. We are a not for profit company that works with Academia, NHS and private companies, and have fertile ground in which to grow.

My thanks primarily go to Professor Keith Harding for his ambition to set up the WWIC; were it not for his vision and persistence we would not be here. My thanks go to all the directors and the team who have been steadfast in their support. We have lost and gained personnel over the year but all have contributed to our anticipated success.





## Message from the Medical Director



**PROFESSOR KEITH HARDING**

The opening of the Welsh Wound Innovation Centre in September 2014 marked the culmination of a long held ambition to create a World First - a Centre of Excellence for patients with wounds. Thanks to the support and belief of Welsh Government and visionary NHS and University leaders our ambition became a reality. WWIC, as a consequence, is a genuine partnership of academic excellence, patient focused clinical care and innovation developed with commercial partners and delivered in local care settings.

It is particularly pleasing that WWIC, which amalgamates the triumvirate of academia/research; NHS/patient care and Industry collaboration – as well as a philanthropy and support for charities - to effect change for the health and wealth of Wales is considered as a new template for Clinical Innovation. Through WWIC's establishment, Wales will become a recognised world-leading nation in this important clinical area, and by establishing an integrated approach to a common and expensive clinical problem, often considered a 'cinderella service' we believe that we will improve the management and delivery of wound prevention and treatment. Importantly, working in collaboration, we can realise our potential to enhance the quality of life for patients through better diagnosis and treatment outcomes, resulting in fewer hospital admissions and

shorter hospital stays, and reduce healthcare costs for the NHS across Wales.

Further in support of Wales' economic strategy, in the first year, we have delivered on the very ambitious economic targets set by Welsh Government. These were to increase new inward investment to Wales, to encourage other business start-ups and relocations to Wales, to develop new products, create new jobs and secure new research funding. Support for all forms of Innovation lies at the heart of everything we do.

The first 12 months, has not been without its challenges, but has been an exciting time of development and growth. Going forward, we are consolidating our position as an organisation. We are developing strong links with our NHS partners across Wales, and providing structured support to assist them in delivering improved care and financial savings in wound healing. We are strengthening our relationship with our commercial partners through a wide range of activities, and rapidly extending our education and training programmes across Wales and internationally. We have increased our international profile, and have welcomed many visitors to WWIC, keen to learn from us and replicate our model world-wide.

WWIC is a not for profit organisation and is here to make a difference. We are committed to working with all of our stakeholders, patients, the public, NHS, Industry, and Academia alike to make that happen. We have set ourselves an ambitious strategy and aspire to challenge ourselves and continuously improve. The team at WWIC are an excellent example of a true Interdisciplinary group focused on an important clinical problem and everyone has contributed a huge amount to our success and profile. This annual report sets the tone for our future delivery and I hope that it encourages you to join us on this exciting new journey in wound prevention and wound healing.

# Mission Statement & Strategic Overview



WWIC is a not for profit company, wholly owned by Cardiff University. It receives funding from the Welsh Government, Health Boards in Wales and a number of commercial concerns operating in the fields of wound prevention and treatment. It is the first national wound healing centre world-wide and is the flagship facility for clinical innovation in Wales. WWIC has a vital role in Wales' economic development, helping to accelerate growth by stimulating and supporting business-led innovation in wound care.

The WWIC vision is to transform the management and delivery of better wound health care (prevention and treatment) via a coordinated, facilitated network approach that meets the needs of our stakeholders and customers.

Our high level objectives are as follows:

- To be recognised as a world leader in wound related health by being professional and passionate about our skills, knowledge and expertise:
- To engage with patients and stakeholders to provide a model that accelerates innovation, translation, improvement and commercialisation in wound prevention, care management and healing.

The overall mission of the Welsh Wound Innovation Centre is to lead the way through partnership with Commercial Companies, the NHS, Higher Education Institutions and Welsh Government to prevent and improve the treatment and care of wounds and thereby

reduce costs and improve the health of those affected and attract new investment into Wales. Or put another way:

‘Collaborating to provide an innovative leadership role to improve lives and well-being through the delivery of cost-effective wound care prevention and treatment services’.

To achieve its objectives, WWIC will:

1. Test new and existing innovations that have the potential to prevent or heal wounds, and where required developing appropriate interventions with commercial partners.
2. Provide high quality education and training for all staff involved in wound healing in Wales/UK and internationally to ensure a competent workforce. This includes the design and delivery of MSc and e-learning modules.



- Collaborate with industry and clinicians to develop and translate new clinical services that improve both patient and staff experience of wound care.
- Design and develop a coherent and flexible business growth and management strategy to develop and exploit Intellectual Property opportunities and inward investment within wound healing in Wales.
- Gather high quality data to show the wound healing process and outcome changes that flow from our activities by developing a National wound registry.
- Secure research funding to Wales to support our improvements for health and well-being.
- Create a culture and mechanisms for assessing current and innovative practice and technologies to benefit the health and wealth of local economies.

- Working with NHS and Procurement to reduce inefficiencies in the wound care expenditure across the Health Service in Wales.
- Act as an exemplar of prudent NHS working.

Our Operational Plan, which can be located at [www.wwic.wales](http://www.wwic.wales) (pictorial representation below), sets out 5 key drivers to ensure delivery of these objectives to include: Sustainable Funding; Appropriate Level of Resources; Research & Development and Innovation, Translation and Commercialisation; Engaged Customers and Education & Training. This plan was developed by all of WWIC's staff and therefore ensures that our interventions as a team are directed towards achieving our high level objectives.

PURPOSE	PRIMARY DRIVERS	INTERVENTIONS	MEASURES
<p>To be recognised as a world leader in wound related health by being professional and passionate about our skills, knowledge and expertise.</p> <p>Engaging with patients and other stakeholders to provide a model that accelerates innovation, translation, commercialisation and improvement in wound prevention, care management &amp; healing.</p>	<p>Sustainable Funding</p> <p>Partnerships &amp; collaborations to drive R&amp;D</p>	<ul style="list-style-type: none"> <li>Identify sources / income streams</li> <li>Sustainable patient recruitment</li> <li>Develop standardised process for service / product evaluations / trials / education &amp; training and engagement activities</li> <li>Development of bespoke efficiency savings plans with each Health Board</li> </ul>	<ol style="list-style-type: none"> <li>No. of bids / grants submitted and achieved</li> <li>No. of successful joint applications</li> <li>Quarterly income vs target</li> <li>Patient numbers match trial / evaluation specification requirements</li> <li>Compliance with process development, sign-off and turnaround times</li> <li>Delivery of financial and efficiency savings plan</li> </ol>
	Appropriate Level of Resources	<ul style="list-style-type: none"> <li>Appropriate skills / number of staff</li> <li>CPD, qualifications</li> <li>Succession planning</li> <li>Procurement of equipment &amp; facilities</li> </ul>	<ol style="list-style-type: none"> <li>Available capacity to meet workflow</li> <li>No. of appraisals and development plans that meet WWIC outcomes/CPD compliance</li> <li>Sustainable infrastructure to support operational requirements</li> <li>Application of procurement process (tender / quotes) and lean ordering &amp; delivery process</li> </ol>
	Research & Development / Clinical Innovation & Translation; Improvement & Commercialisation	<ul style="list-style-type: none"> <li>Develop and roll-out wound registry</li> <li>High impact publications / presentations</li> <li>Adopt a formal assessment process for testing new ideas / service improvement opportunities</li> <li>Governance/insurance/ethics/contracts process in place</li> <li>Horizon scanning / links with established brands</li> <li>Postgraduate opportunities</li> </ul>	<ol style="list-style-type: none"> <li>No. of users &amp; volume of data captured</li> <li>No. of publications / presentations and journal publisher</li> <li>No. of new ideas / patents and pathways developed</li> <li>No. of jobs created</li> <li>Compliance with R&amp;D process</li> <li>No. of new commercial links and sustainability of established contacts</li> <li>No. of joint PhDs with commercial partners</li> </ol>
	Engaged Customers	<ul style="list-style-type: none"> <li>Needs analysis and voice of customer</li> <li>Patient/stakeholder panels/link with third sector</li> <li>Develop WWIC comms &amp; engagement strategies to include web &amp; social media</li> <li>Establish Key Customer contacts</li> </ul>	<ol style="list-style-type: none"> <li>NHS MOU's outputs a</li> <li>Survey of companies and responses made</li> <li>Focus groups and changes made in response</li> <li>No. of contacts</li> <li>No. of website hits</li> </ol>
	Education & Training	<ul style="list-style-type: none"> <li>MSc in wound care</li> <li>Accreditation</li> <li>Development of a framework to deliver composite training packages for NHS staff</li> <li>TVN/forums/WWN/industry courses</li> <li>Knowledge transfer</li> </ul>	<ol style="list-style-type: none"> <li>No. of participants and course costs achieved</li> <li>No. &amp; outcome of applications</li> <li>No. of staff trained/access e-learning (MOUs)</li> <li>No. of certificates / CME points awarded</li> <li>No. of meetings attended/ reports &amp; feedback shared</li> </ol>

# Operations

## The Team

WWIC's management model combines a multidisciplinary mix at both Company, Board and Stakeholder levels. The Company is governed by the Board who, in turn, are responsible for the stewardship of the Company and oversight of the conduct of the business. The Board is supported by an executive management team who are accountable for developing and delivering the Operational plan.

WWIC itself is managed by the Medical Director and Chief Operating Officer who are supported by a strong mix of professionals, to include Independent Consultants, Accountants, Academics and Healthcare Professionals. Up to 20 staff (17 wte) support WWIC.

## Operational Developments

Since April 2015, WWIC has put in place a number of mechanisms to strengthen its resilience such that this unique model of clinical enterprise and innovation is sustainable for the future. Examples include:

- Review process of all projects to ensure that they are consistent with WWIC's objectives;

**WWIC: Project/Programme Request Proforma**

Resource required from WWIC (e.g. Support in recruitment; trial milestones; education & training; presentations; project design; report writing)

Requestor Priority			
Fits with Business Plan	Y	N	N/A
Resource to support project plan development	Y	N	N/A
Funding commitment to support project plan	Y	N	N/A
NDA	Y	N	N/A
Other:	Y	N	N/A

IMPACT	WWIC Priority									
	Easy					Hard				
	10	9	8	7	6	5	4	3	2	1
High										
Medium										
Low										

Sign off: Name: \_\_\_\_\_

**For use by Executive Management Team only**

Date discussed at EMT meeting: \_\_\_\_\_

Added to work programme? Yes/No (delete as appropriate)

Reason for decision: \_\_\_\_\_

- Declaration of Interest Policy for all staff, including Board Directors;
- Pay and non-pay review to ensure that operational costs are lean;
- Demand and capacity review to ensure that we have appropriate staff to undertake our activities.

CONTRACT GUIDANCE PROFORMA			WELSH WOUND INNOVATION
CONTRACT TYPE	KEY DESCRIPTORS	CU INVOLVEMENT	
1 Commercial company as Sponsor of a regulated/non-regulated device. No monies being paid to WWI Ltd.	Contract with commercial company and the Local NHS Body acting as the Research Site i.e. recruiting and consenting participants. Keith appointed as the Chief Investigator (CI) and Nicky as the Principal Investigator (PI).	YES	
2 Cardiff University as sponsor of a Clinical Investigation study (Regulated/Non-regulated device (CE Marked)). Monies paid to CU.	3-way agreement with Cardiff University as the Sponsor, Local NHS Body acting as the Research Site and Commercial Company. Company signing the agreement to confirm that the device is being used as per its CE product registration.	YES	
3 External Academic sponsored study with the External Institute acting as CI and Keith Harding as local PI. No monies being paid to WWI Ltd.	Contract between academic sponsor and local NHS body.	NO	
4 Commercial Sponsor (clinical samples/photographs and clinical data for transfer within EU and Switzerland). Appointment of a UK led Sponsor. Monies being paid to WWI Ltd.	4-way agreement with Commercial Sponsor, Cardiff University, WWI Ltd and local NHS Body as Research Site.	YES	
5 Commercially sponsored Regulated/Non-regulated device study. Monies being paid to WWI Ltd (to include material and data transfers). Keith Harding appointed as CI and Nicky Jones as PI.	The study uses a CE Marked Product and the Product is being used within its licensed indication (Regulated). Indemnity by the company as set out in Appendix 3 and 4. 4-way agreement with Commercial Sponsor, Cardiff University, WWI Ltd and local NHS Body as Research Site. NHS receiving R&D funding as running trial through 3 <sup>rd</sup> party funder (Funding incorporated into the contract template)	YES	

Significantly for WWIC however has been the resolution of Indemnity which enables clinical trials to be performed at the centre itself. Further, the development of a suite of model contracts to cover a broad range of scenarios to include education and training, clinical trials and product evaluations will significantly accelerate our ability to secure appropriate and financial recompense for our commercial activities.

## Relationships with the NHS

WWIC's development is inextricably linked to the NHS and in particular its fulfilment to achieving Prudent Healthcare. Recognising this important strategic driver and more critically the need to demonstrate value to the NHS, WWIC has set about formal agreements with our NHS stakeholders in the form of Memorandum of Understandings (MOU's).

It is clear that each Health Board (HB) has its own unique challenges and the purpose of the MOU is to enable a meaningful dialogue between the leadership team of the

HB and WWIC such that there is a realistic delivery plan that meets the organisation's needs. The delivery plan is further set against the 5 key drivers in WWIC's operational plan to include:

- Education & Training
- Appropriate use of resources to include product advice;
- Research & Development opportunities.

An example of an area that brings these 3 key elements together is a project that has been devised by the team at WWIC and an Industry partner, Direct Healthcare Services to test a hybrid mattress in Nursing Home settings. The Nursing Homes are based in 3 Health Board catchment areas: Cwm Taf; Aneurin Bevan and Cardiff & Vale.

The aim of this project is to reduce the number of pressure ulcers in care homes.

This project is predicated on data from various sources which indicates that pressure ulcers occur across all care settings including in nursing homes. Once a patient develops a pressure ulcer the costs of their care increases dramatically with the most significant cost being during any period of hospital admission (irrespective of if admission is for care of the pressure ulcer or any other reason). Additionally, the cost to the patient themselves in terms of pain, discomfort and feeling unwell cannot be underestimated. One has only to read the Flynn Report (2015) which reviewed Operation Jasmine, a major Gwent Police investigation which started in November

1. The significance of deep pressure ulcers is elevated to that of a notifiable condition.
2. Senior clinicians, including Registrars, General Practitioners and Tissue Viability Nurses, assume a lead role in preventing avoidable pressure ulcers and in developing a National Wound Registry, assisted by the Welsh Wound Innovation Centre.

2005 and concerned 63 deaths in care homes and nursing homes for older people in south east Wales to understand the significance of poor care and pressure sore development.

It is suggested that by preventing any new damage occurring in the homes and putting in place structures and processes to heal existing damage more quickly, fewer patients would be admitted to acute care with pressure ulcers. Therefore the benefits of this project are perceived as follows:

#### Patient Story Board

We currently have a young girl with a complex lower leg wound which has had a huge impact on her and her family's lives. She has become wheel chair dependent and has a life which revolves around her wound. At her first appointment she presented with a heavily infected large oedematous lower leg and appeared very low in mood. The community team were having difficulty allocating the appropriate time to care for her wound and as a result her Mum was re-dressing her wound 3 times a day and one was overwhelmed by the extent of her daughter's problems.

A plan of care was established including the community team with the aim of initially eliminating the odour and infection.

After 6 weeks of attending WWIC of weekly treatments and continued care by the community team the odour from her wound has improved, and appears to be more positive in mood. At her last visit she had been to her first party.

Planning a pathway of care with a rationale for treatment, two way communications between the clinicians providing the care and the family unit reassurance and support has led to an improvement in this patient's well-being and her wound in a relatively short period of time. A true example of collaborative working for real patient benefit.



**Patients:** no pressure ulcer results in no pain and no negative impact on quality of life.

**The Care Home:** no wasted resource in providing care for a preventable problem, cost savings by not using dressing products and more sophisticated bed/mattress/ cushions. Releasing time to care for staff.

**The Acute Sector:** no wasted resource in providing care for a preventable problem, cost savings by not using dressing products and more sophisticated bed/mattress/ cushions. Reduced length of stay associated with the care of pressure ulcers. Releasing time to care.

As well as the provision of a hybrid mattress, staff are being supported with education and training and audits are being undertaken both pre-peri and post project completion to determine the efficacy, value and cost efficiencies. The project is due to complete in summer 2016 and given the findings and recommendations of the Flynn Report. WWIC and PH Health Wales would wish to seize the opportunity to develop a National Wound Registry as we believe that this would transform care standards across the Principality. Please see the Wound Registry section for further information.

### Social Media

WWIC has a social media presence across all the main platforms. Following a successful first year, WWIC staff are developing a revamped website which will be launched early in 2016. This will reflect the vision of WWIC as the World's first centre of excellence for wound

prevention and wound healing. The website will provide more detailed content demonstrating the breadth and depth of WWIC business, and will provide more patient centred resources to support our service users. The ambition is for the revised website to become the 'go to' website in the UK for skin health, wound prevention and treatment.



Twitter is another important social media platform for business. In the last year, WWIC has almost doubled the number of followers, and plans are in place to develop this further with a targeted campaign underway in late 2015. In addition, WWIC will be developing its LinkedIn presence, and will be using this process to develop links with professionals and other business organisations.

### Our links are shown below.

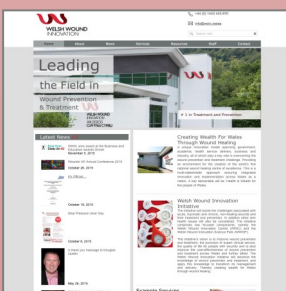
Website: [www.wwic.wales](http://www.wwic.wales)

Facebook: [www.facebook.com/WWIC.Wales](http://www.facebook.com/WWIC.Wales)

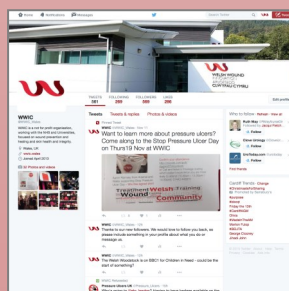
Twitter: [@WWIC\\_Wales](https://twitter.com/WWIC_Wales)

LinkedIn: [www.linkedin.com/WWIC](http://www.linkedin.com/WWIC)

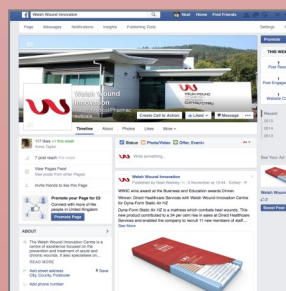
### Website



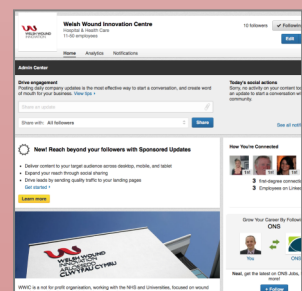
### Facebook



### Twitter



### LinkedIn



## Key Achievements



### Industry Links & Inward Investment

#### Headlines

WWIC currently interacts with a number of indigenous Welsh-based companies as well as companies who have relocated or intend to relocate to Wales.

We hold contracts with 5 companies:

Frontier Medical, Medstrom, Direct Healthcare Services, Hospital Innovations and Biomonde and we are working with; Huntleigh Diagnostics, Convatec, WhatAdata and Rociale to name but a few.

Significantly for WWIC has been the achievement of our economic markers of success as represented in the table.

Further we are in exciting discussions with a number of international and large Pharma companies which, if realized, will

yield significant benefits to wound health in NHS Wales and the Welsh economy more generally.

The best examples of working between Welsh business and education have been highlighted at the 2015 Business and Education Partnerships Awards. The event, held at the Marriott Hotel, Cardiff, attracted hundreds of representatives from industry and academia to celebrate the highlights of the last 12 months. Insider editor Douglas Friedli, compère for the evening, praised the "brilliant ways that companies, universities and colleges work together" in Wales. He said: "Universities and their students alone generated about £4.6bn of output in Wales in the year to 2014. Add in the colleges too, and you have a large and growing part of the economy. That economic impact is magnified when universities and colleges work with companies to create great products, boost productivity and develop the skills of the future."

### New Product Award

**Winner:** Direct Healthcare Services with Welsh Wound Innovation Centre for Dyna-Form Static Air HZ  
Dyna-Form Static Air HZ is a mattress which combats heel wounds. This new product contributed to a 34 per cent rise in sales at Direct Healthcare Services and enabled the company to recruit 11 new members of staff.

	2014/15 Predicted	2014/15 Actual	2015/16 Predicted
New Inward Investments (facilitated / supported)	3	3	1
Business Re/Co-Locations to Wales (including satellite offices)	4	4	2
New Business Starts	2	2	1
Products/Services Registered (Related to commercialisation of wound prevention & treatment products)	1	1 + 2	1
Jobs Created	10-20	11	4-7
Innovation (Academic) research funding (number of research grants value £3500k +)	1	0.5	2

Inward Projections and Actual Achievements 2014/15

#1 in Treatment & Prevention

# Research & Development

## Governance and Contracts

The first year of WWIC's life witnessed challenges with regard to the governance and contractual position of studies undertaken by the new enterprise. Positively however, the position changed with the support of our neighbouring University Health Board, Cwm Taf, who supported our application for WWIC to be covered by NHS Indemnity, governed by the Welsh Risk Pool.

In the period since May, our legal team at Cardiff University have developed a schedule of contract templates which will provide a framework for future clinical evaluations and studies. Importantly such a development enables WWIC to rapidly respond to requests for clinically based projects.

Service evaluation projects will be agreed directly with Health Board R&D departments while research studies will be organised under the model Clinical Trial Agreement (mCTA) with contracts processed through Cardiff University. In the past month alone we have been able to issue contracts for a commercially sponsored regulated device study as a 4-way agreement with the commercial sponsor, Cardiff University, WWII Ltd and Aneurin Bevan and Cwm Taf University Health Boards.

## Clinical Evaluation and Research

Over the period covered by this report the WWIC staff complement able to participate in clinical evaluations and research studies has doubled from 3 to 6 allowing WWIC to undertake more clinical studies. Our new staff members have been seconded from both Cardiff and Vale UHB and Aneurin Bevan UHB and we are grateful to the UHB's for enabling this arrangement. As well as increasing WWIC's capacity there are opportunities for the UHB's in terms of professional development and, where appropriate, the institution of Pathway to Portfolio Studies which attracts income from Health & Care Research Wales as well as supporting local R&D recruitment targets.

During the secondees' time at WWIC they learn about the research process, recruitment of patients into clinical trials and importantly gain knowledge in Wound Healing.

Closer integration of the clinical studies undertaken by WWIC with NHS Wales has begun for example working with Aneurin Bevan UHB (ABUHB). WWIC has been allocated space within a new Clinical Trials Unit enabling an integrated approach. In September WWIC and Cardiff & Vale UHB collaborated on a study, heralding new ground for both organisations. Furthermore, discussions are well underway for partnership between WWIC and Cwm Taf UHB assisting collaborative work with the anticipation that the first clinical study executed within WWIC's facilities in Llantrisant will begin in late 2015 / early 2016.

There has been great interest in working with WWIC among commercial organisations involved in wound healing and skin health. Over 80 companies have visited WWIC and discussions regarding clinical evaluations and studies are advancing with many of these. The companies who have approached WWIC range from very small SME's through to global companies in wound healing, while the majority are medical device manufacturers.

WWIC has also engaged with pharmaceutical organisations with on-going work developing a long-term relationship between WWIC and a very large international pharmaceutical company. Such a development is novel and signals a more mature relationship between Industry, Academia, Government and the NHS. Moreover, the partnership with pharmaceutical companies is very rare in wound healing and this relationship marks a significant development for WWIC's future commercial interactions which should benefit the health and wealth of Wales.

As demonstrated in the Industry links and Inward Investment section of this report, WWIC has been



strongly supportive of Welsh based wound healing companies with contracts in place with six Welsh based suppliers and WWIC is a strong partner in the Clinical Trials partnership initiated by MediWales in 2014.

As an example we have worked with Rocialle to develop a project for the South East Wales Academic Science Partnership 'Health Tech Challenge' (see overleaf).

### **Patient Involvement**

WWIC continues to draw upon the strong support of patients who have been part of the Wound Healing Research Unit's NHS service as well those who have participated in past clinical studies. A patient panel has been created to expressly bring the patients' views and opinions of living with wounds both to clinical study protocol development and to help guide appropriate product development. Our patients continue to provide invaluable insight into the trials and tribulations of living with a chronic condition and this serves to inform and revolutionise both clinical practice and product development.

As part of our 'voice of the customer' approach to wound care we have worked with our commercial partners to develop and capture patient stories. Further, our Education and Training Director is working with Mole Productions, a commercial company, to develop patient education videos.

### **Clinical Innovation**

WWIC has an international reputation for delivering first class clinical trials and remains one of the leading centres in the UK. As a result of our reputation, WWIC was invited to submit a bid as part of the recently announced Precision Medicine Catapult.

Cardiff is one of six centres named in the £50m project funded by Innovate UK, the UK Government's innovation agency.

Led by a consortium headed by the Welsh Government, NHS Wales and Cardiff University, the Centre will work on local and national programmes, building expert teams across the region. Cardiff University's expertise in researching and developing innovative technologies for the UK healthcare sector will support the Cardiff Centre.

The Centre, which will also be supported by Swansea University, will collaborate with local, national and global partners to drive development and innovation in personalised medicine, new diagnostics and e-health systems and to identify and resolve barriers to building a leading UK precision medicine industry. The Catapult helps potential exemplars achieve faster time to market, to patient outcomes, and to investor returns and WWIC was delighted to be considered as a potential exemplar.





# Health Tech Challenge



## The Challenge:

In the advent of prudent healthcare why is it that nurses are confronted with a plethora of dressings, devices and treatment choices for patients with wound problems? In the hospital setting, this is not such an issue as products can be tailored more appropriately and more often advice and support is available by the Tissue Viability Nurses. Importantly as well, the nurse has greater control of the environment and, as a result, can maintain a clean field for dressing changes.

In the community setting however, this is not the case and community and district nurses have to adapt to an environment with limited resources including time; advice and support and often maintaining a clean field and sterile dressings is a challenge particularly when the products to clean and dress a wound are often dictated by what is available rather than what is needed. As a result multiple dressing and cleaning packs are often required which leads to increased cost and also an increased potential to contaminate the dressing area.



Our challenge is to identify a way of improving this situation and importantly deliver appropriate care whilst minimising the risks of infection during dressing change procedures in the most cost effective manner.

All Health Boards within Wales recommend that you use a

procedure pack for each dressing as this provides: a disposable apron, disposable gloves, waste bag and sterile field in a clean manner. Sterile gloves are not required for clean technique but using a pack system ensures products are easy to store and transport in a hygienic manner. Unfortunately for many of the complex large wounds on



the lower limb the standard dressing packs don't have the appropriate components to address all of the clinical requirements during the dressing change e.g. cleansing of the wound bed, debridement of the wound bed and surrounding skin, application of emollient to surround skin.

To address this clinical challenge a local Welsh Company has devised an all-in-one lower limb dressing pack which includes a sterile field, cleansing wipes, gloves, emollient, aprons and importantly large waste bags. Not only does this support effective and efficient dressing changes, but it has also been arranged in a way to guide the nurse to providing a standardised approach to wound care and skin health in a more effective and person centred manner.

# Education & Training

The focus of the education and training initiative has been to help fulfil WWIC objectives 2, 3, 8 and 9 (refer to pages 5 & 6).

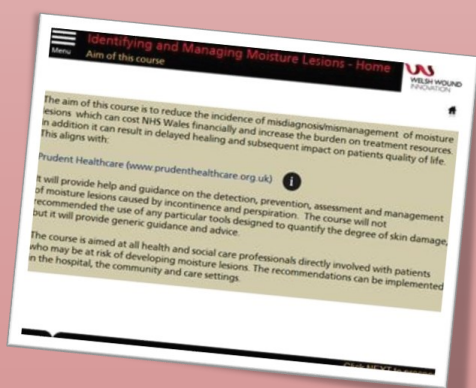
There have been five main areas for development each covering different types of educational enterprises demonstrating diversity in the approach to WWIC education and training challenges.

## Strategy One

An educational endorsement system has been developed to allow for the award of WWIC approval for wound related educational events, resources, courses and professional standards. WWIC is able to endorse materials from a wide range of sources e.g. educational institutions, commercial sector, 'not for profit' organisations, the NHS and registered charities.

The WWIC endorsement committee (WWICEC) comprises both national and international experts in the field of tissue viability, education, research and health economics. The role of the WWICEC is to review all applications for endorsement following a systematic, robust and transparent process. The advantages of WWIC endorsement are as follows:

- An expert peer reviewed examination of the proposed content.
- The use of the WWIC logo to promote and advertise the material.
- A nationally recognised quality branding that acknowledges the scientific, academic and contemporary nature of the material.



The endorsed material will be listed on, and promoted via, the WWIC website.

WWIC will endorse material that is provided in the medium of English and/or Welsh.

The first endorsement was of the learning program for the Lindsay Leg Club e-Learning Zone

<http://www.learningzone.legclub.org/>

There is a variable fee structure allocated to the endorsement process, to acknowledge the costs of the endorsement process.

## Strategy Two

At the request of the Chief Nurse, Jean White, an e-learning module has been developed in collaboration with the All Wales Continence Forum and NHS Wales Informatics Service. This educational material is to support the implementation of the All Wales Tissue Viability Nurses and All Wales Continence Forum best practice statement on the prevention and management of moisture lesions.

[http://www.welshwoundnetwork.org/files/5514/0326/4395/All\\_WalesMoistureLesions\\_final\\_final.pdf](http://www.welshwoundnetwork.org/files/5514/0326/4395/All_WalesMoistureLesions_final_final.pdf)

The rationale behind the initiative is to help clinicians correctly identify and categorise pressure damage from moisture damage. If this distinction between pressure ulcers and moisture lesions is not made correctly these wounds may not heal, as they will not receive the correct therapeutic intervention. Additionally, if a moisture lesion is not correctly identified then scarce health service resources such as special pressure-redistributing mattresses may be allocated to individuals who do not require them, resulting in increased costs of wound care. At the time of writing this report the e-learning module is being piloted by a variety of health care and non-healthcare personnel.

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### Strategy Three

WWIC has worked closely with the All Wales Tissue Viability Nurse Forum to meet the educational needs of this group. The first part of this process has been to bring in an external legal training company (Bond Solon <http://www.bondsolon.com/health-social-care.aspx>). Two study days have been able to implement the Guideline, Recommendations/Standards. Further it supports the NHS Planning Framework 2016/17 and achieves the objectives of prudent healthcare that centres on improving health; quality of care as well as achieving maximum value for the NHS.

### Strategy Four

Wound management is frequently performed in GP surgeries by Practice Nurses who have received limited training. Typically this results in poor clinical outcomes and extended treatment times with frequent GP surgery visits to change wound dressings.

The Director of Education and Training has worked with two GP surgeries at their request to educate and train the Practice

Nurses to run complex wound clinics. The first surgery: Nant Garw, Caerphilly, as a result of the initiative won the Royal College of General Practitioners Award for Clinical Excellence, and the Practice Nurse was nominated for nurse of the year.

Subsequently the Practice Nurse presented the project at the Wounds UK conference in Harrogate. Following on from the project she joined WWIC for a year's secondment whilst continuing to run her weekly wound clinic. The clinic is now an enhanced wound care service provider for the area.

The second surgery: Village surgery, Cwmbran has been nominated jointly with WWIC for the 2015 MediWales Innovation Awards in the category of NHS collaboration

with a Welsh company.

The nomination had to demonstrate how the project and partnership has led to improvements in patient care, benefits within a health board and/or cost savings. The audit of both surgeries involved in the initiative demonstrated an increase in healing rates and in the Caerphilly surgery a reduction in wound dressing costs. The Practice Nurse from Cwmbran has published an article and two posters as a result of the project.

This initiative meets with NICE, RCN, AWMSG and Standards for Health Service in Wales, all of which reference that wound care should be delivered in a context of continuous quality improvement. Moreover, a commitment to, and availability of, education and training are needed to ensure that all staff, regardless of

profession, are given the opportunity to update their knowledge and are able to implement the Guideline, Recommendations/Standards. Further it supports the NHS Planning Framework 2016/17 and achieves the objectives of prudent healthcare that centres on improving health; quality of care as well as achieving maximum value for the NHS.



Nantgarw Road surgery team receiving award, project lead Jan Ryzy (second from left).

### Strategy Five

WWIC has built upon previous educational programmes and workshops offered to external commercial companies and groups. To date we have provided five, three-day workshops which combine formal lectures with workshop and clinical activities and this approach has been well received.

## Postgraduate Education

Mrs Samantha Holloway has been involved in the education of health professionals at undergraduate and postgraduate level for a number of years. Her clinical practice has been in the hospital setting. Her main role is as a Senior Lecturer / Course Director for the Masters in Wound Healing and Tissue Repair. She has undertaken this role since 2007.

The inception of the Masters in Wound Healing and Tissue Repair was, and remains, unique as there are few others of its kind. Originally introduced in 1996 as a Postgraduate Diploma in Wound Healing and Tissue Repair, the course has met the needs of a professional group of individuals working in a speciality which previously had no specific professional award particularly at this level of study. In 1999 the course was extended to offer a Masters level award.

The structure of the course is highlighted below .

### Part 1 Years 1 and 2 (Taught):

#### Year 1

Module 1 Biology of Wound Healing  
Module 2 Psychosocial aspects of Wound Healing  
Module 3 Research Design and Methods  
Module 4 Factors affecting healing  
Module 5 Assessment of wounds

#### Year 2

Module 6 Management of Acute Wounds  
Module 7 Management of Chronic Wounds  
Module 8 Values and Priorities in Wound Care

### Part 2 Year 3 (Dissertation)

Dissertation – 20,000 words.

The 'open learning' nature of the Masters in Wound Healing and Tissue Repair, allows professionals from a variety of healthcare disciplines to build upon existing knowledge within their own educational framework. The course content addresses theories of wound care and priorities of patient management from the broad



Masters in wound healing and tissue repair

perspective of all team members with the aim of fostering a 'team' approach.

### Postgraduate Taught Experience Survey: Overall Results

The final response rate for the School of Medicine was 45.2% (471 out of 1042 students). This compares to a University response rate of 41.21% and a College rate of 43.99%. The response rate for the MSc in WHTR was 68.89% (31 out of 45 students). The overall satisfaction rate for PGT programmes as a whole was 88% which is close to the target of 90%. This represents the third successive year of improved student completion rates and student satisfaction.

The overall satisfaction rate for the MSC in WHTR was 97% with 100% satisfaction for;

'staff are good at explaining things', 'staff are enthusiastic about what they are teaching' and 'feedback on my work has been prompt'.

There were lower levels of satisfaction for 'my timetable fits well with my other commitments' (67%), 'the course has created sufficient opportunities to discuss my work with other students (face-to-face and/or online) (68%) and 'I am happy with the support I received for planning my dissertation (topic selection, project outline, lit search etc)' (69%).

In terms of thematic area performance and satisfaction rates these were as follows:

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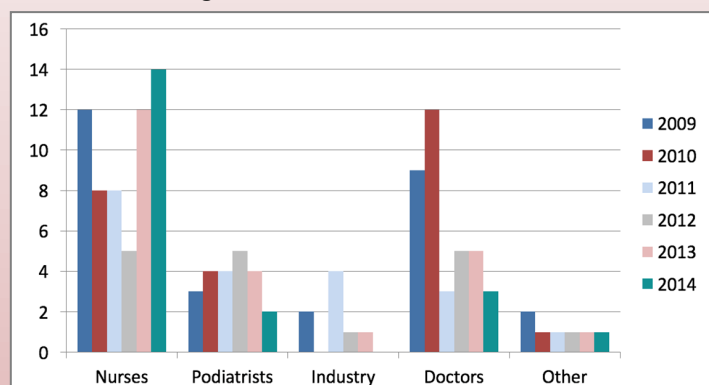


Assessment and Feedback	97%
Teaching and Learning	95%
Learning Resources & Support Services	93%
Skills Development	86%
Organisation & Management	85%
Engagement	83%
Dissertation	76%

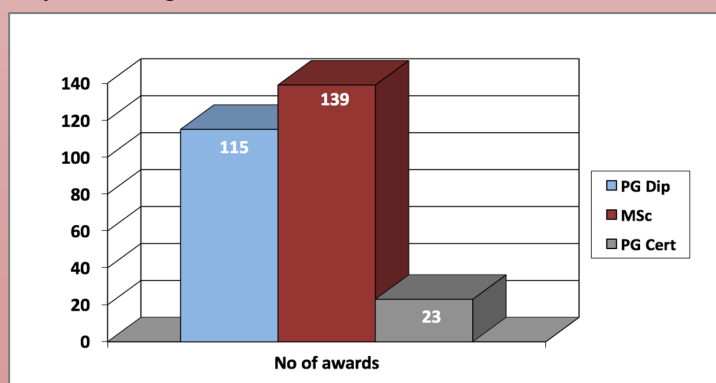


Masters in wound healing and tissue repair

Professional Background of Masters Students: 2009 - 2014



Number of Students who have graduated with an Exit Award\*:  
July 1998 – Aug 2015



# Presentations & Publications

## National & International Events

WWIC Directors successfully delivered a number of presentations and e-posters at the European Wound Management Association (EWMA) conference which took place in London in 2015. The event in London was attended by over 4,000 delegates from 78 countries, and includes European and international key opinion leaders. The following link provides details of the e-posters submitted by WWIC. Work is now underway in planning for the 2016 conference which will take place in Germany in May 2016.

<http://www.wwic.wales/#leposters/ckfc>

The WWIC Team present and chair at a wide range of conferences and events during the year including the annual Lindsay Leg Club conference.

Other national/international events within the time-period :

**Wounds In Wales:** National conference – solely organised by WWIC, 40 exhibitors, 200 delegates held in Cardiff, September 11th 2014

**Wounds UK,** Harrogate, November 2014 and 2015.

**European Pressure Ulcer Advisory Panel (EPUAP)** annual meetings – input as invited speakers from WWIC Directors with meetings held in late August 2014 and mid-September 2015.

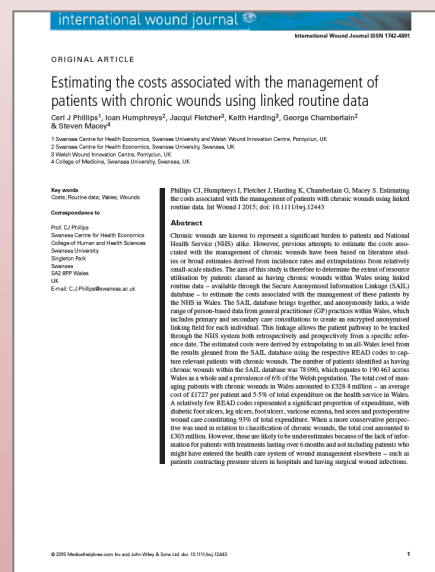
**Welsh Wound Network** – membership of around 400 with 45 companies represented, 86% of members live and/or work in Wales. Two meetings during the period covered by this report December 2014 and March 2015.

Professor Harding is Editor in Chief for the International Wound Journal, and Jacqui Fletcher is Clinical Editor for Wounds UK. Directors publish regularly in both of these journals, as well as for Wounds International, the Journal of Wound Care as well as chapters for books.

2014: 35 publications

2015: 27 publications to date

**Of note:** Estimating the costs associated with the management of patients with chronic wounds using linked routine data. Phillips, C.J. et al in the International Wound Journal, Mar 26. doi: 10.1111/iwj



For more information: [www.wwic.wales](http://www.wwic.wales)

# Wound Registry

Chronic and acute wounds are experienced by almost 6% of the Welsh population and consume £328.8 million annually. This approximates to 5.5% of all health expenditure in Wales. Despite this, there is no mechanism for the number of people with wounds in Wales to be routinely captured in clinical practice nor for their outcomes to be determined, leaving the NHS in Wales unclear whether expenditure on wounds is either prudent or effective. While there are examples of recording wound occurrence at a local level in Wales, the data captured is often unreliable and collected using a wide range of different tools leading to a fragmented understanding of the scale of the problem and the value for money of current wound care practices.

Data collection historically has relied upon the use of pen and paper with subsequent entry of 'selected' data into a database for analysis. While this method is well established, it is time-consuming, costly and prone to error. An easy-to-implement 'alternative method' which involved minimal changes to the current working practices was required in order to capture such data. Hence digital pen technology was chosen. There are two main components; a Digital Pen and a Paper Form.

## Digital Pen

The digital pen is a normal ballpoint pen with the addition of an integrated camera, an image processor and memory for data storage.



## Paper Form

The Paper Form consists of a pre-printed dot pattern which is overprinted with the Wound Assessment form.

As the pen is used on the form it takes a series of snapshots (around 100 per second) and these images are date and time stamped and contain positional data derived from the unique dot pattern which links the data to a specific form. Captured data is encrypted and uploaded to a secure server for processing. The data is then assembled into a picture and text recognition software converts the written text to a computer readable format. This electronic data is stored in the Wound Registry for analysis.

The Wound Registry, in its current format, has been in use since 2012. To date, data has been collected on over 1,700 patients, equating to more than 9,000 wound assessments.

In an attempt to further improve how we capture and analyse data the digital form and the way we store the data is being reviewed. It is the aim to also make the form available in tablet format and also to roll out to other clinics across Wales.

**WOUND STUDY ASSESSMENT**

**PATIENT RECORD**  
 Date of Birth: DD MM YYYY  
 Initial Patient Assessment? YES NO  
 Case No: [ ]

**BASILINE DATA**  
 Country: [ ] Site Code: [ ] Hospital/Clinic: [ ]  
 Height: [ ] cm Weight: [ ] kg  
 Employment Status: [ ]  
 Medical History: [ ]  
 Nutritional Status: [ ]  
 Mental Status: [ ]  
 Rehab Status: [ ]

**WOUND DETAILS**  
 LOCATION: [ ]  
 DESCRIPTION: [ ]  
 SURGICAL: [ ]  
 TRAUMA: [ ]  
 BURNS: [ ]  
 CASE HISTORY: [ ]

## Developing a National Wound Registry for Wales.

The need for a national wound was a recent recommendation within the Flynn Report published by the Welsh Government. This independent report related to events in care homes in South East Wales, referred to as Operation Jasmine, following a police investigation. One of the recommendations called for a national wound registry with the commentary that the Welsh Government, in association with Public Health Wales, should ensure that 'senior clinicians, including Registrars, General Practitioners and Tissue Viability Nurses, assume a lead role in preventing avoidable pressure ulcers and in developing a National Wound Registry, assisted by the Welsh Wound Innovation Centre'.

Serial No. of Previous Form: \_\_\_\_\_

Wound Assessment: Intervention and Evaluation

Serial No: \_\_\_\_\_

Health Board

☐ Aberdare (Bis Morganwg) University Health Board ☐ Cwm Taf University Health Board

☐ Anson (Betsu) University Health Board ☐ Hywel Dda University Health Board

☐ Betsu Ceredigion University Health Board ☐ Powys Teaching Health Board

☐ Cardiff & Vale University Health Board

Patient Details

Initial Patient Assessment: ☐ Yes ☐ No

Date of Birth: \_\_\_\_\_ NHS Number: \_\_\_\_\_ Hospital Number: \_\_\_\_\_ Gender: ☐ M ☐ F

First Name: \_\_\_\_\_ Surname: \_\_\_\_\_

Address: \_\_\_\_\_

Postcode: \_\_\_\_\_ Tel No: \_\_\_\_\_

GP: \_\_\_\_\_

Address: \_\_\_\_\_

Postcode: \_\_\_\_\_ Tel No: \_\_\_\_\_

Consultant: \_\_\_\_\_

Patient Consent: \*Signature only required at first assessment

I have read and understood the information sheet hereby give consent for my data to be stored in the Wound Registry.

Patient's Signature: \_\_\_\_\_

© Welsh Wound Innovation Centre 2014

ENABLING **ANDER LIFE** FUNCTIONALITY

Welsh Wound Innovation Centre: Intervention & Evaluation

## Registry development

WWIC has expertise in developing electronic capture and storage of wound care processes and outcomes based upon the experience of patients treated within its

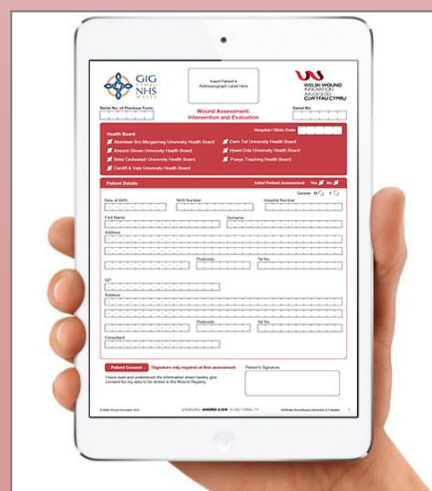
outpatient clinics in South Wales. The development of a national registry for Wales needs to begin with a clear understanding of the reports and data required by clinicians and managers to assess the effectiveness and value for money of current wound care and outcomes. The software and hardware requirements for a national wound registry would need to be developed with partners with experience of successfully introducing electronic data capture and reporting into the Welsh NHS and would involve the expertise of the NHS Wales Informatics Service (NWIS). The data collection would enable clinicians to view progress of wounds in real-time to both identify trends and help guide treatment decisions.

## Initial Implementation

A national wound registry would be initially implemented across pilot sites within each Health Board and Trust in Wales to test the robustness of data capture and reporting within a variety of care settings. If the pilot tests are successful the registry could then be rolled-out across Wales.

## Timescale

The development of registry data capture and reporting system would take 12 months, with a further 6 months for initial pilot testing before national roll-out. WWIC has submitted a detailed proposal to fund the costs of this implementation.



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# The National Wound Audit

## Background

A national audit of wounds was proposed by the Chief Nursing Officer for Wales (CNO) following her attendance at the launch of the All Wales Tissue Viability Guidance on Moisture Lesions. The primary interest was in the number of pressure ulcers and moisture lesions in acute care and the ability of staff to accurately discriminate between them.

WWIC was commissioned to develop and lead the audit by the CNO's Lead for Patient Safety and Patient Experience. A proposal was then sent to the Health Boards' Nurse Directors and to the Tissue Viability Nurses (TVN). Medstrom, a total bed management company who have many years' experience of undertaking such audits across the UK, provided invaluable logistical and IT support for the project.

WWIC staff visited each organisation to agree the implementation process. After considerable discussion about the practicalities it was agreed that whilst any pressure ulcer / moisture lesion would have dressings removed and the wound type and category validated, any other aetiology would simply be reported, but not validated. Powys Health Board agreed to audit all patients in community hospitals. The methodology for the audit was agreed and it provided step by step guidance for all staff undertaking the audit.

Staffing was considered a major issue and WWIC undertook to provide staff to support organisations where assistance was required. Many Health Boards expressed concern around consent, mental capacity and other issues to include governance arrangements for non-UHB staff. These were referred to the CNO's lead for the project, and assurance was provided.

## National Outcomes

In total, 8,372 patients were included in the audit, which consumed 496 staff days across Wales. The data produced was organised into separate spreadsheets for each Health Board, Velindre NHS Trust, and an All Wales position. The raw data was circulated to the TVNs for any immediate comments. The data was also 'cleansed' and cross-checked for duplicate or missing data. WWIC liaised with Medstrom to provide a preliminary report for each organisation and an All Wales summary report.

The All Wales data was presented to CNO's office and then circulated to each Nurse Director. Further analysis is being prepared on the patients where pressure ulcers were either not identified or were incorrectly identified by ward staff. Health Boards have been provided with information specific to them in relation to:

- The percentage of Pressure Ulcers correctly identified and categorised
- The percentage of Pressure Ulcers that were not verified for reasons such as consent, illness
- Detailed analysis around equipment usage and risk category of patient
- Severity of Pressure Ulcers by category
- Analysis of Hospital Acquired Pressure Ulcers
- Location of Damage

## Review of key learning: All-Wales

Reports from the information indicate three areas of immediate concern, which were common across each organisation in Wales:



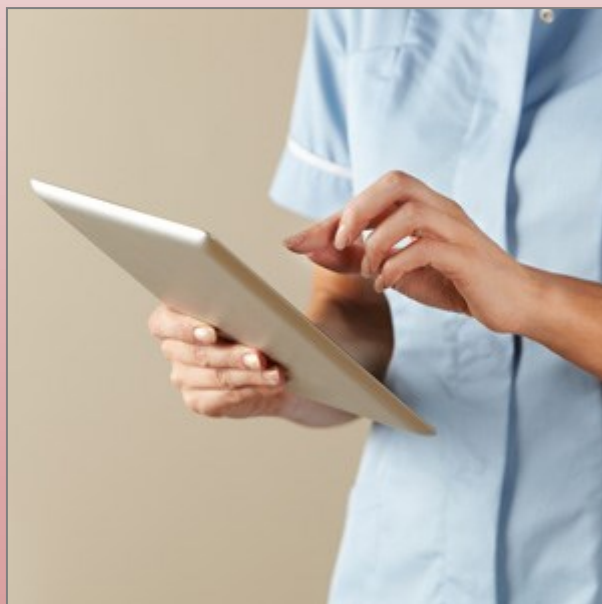
1. The reported over use of 'nappy type' incontinence pads for patients.
2. The inappropriate use of anti-embolic stockings, often poorly fitting, with patients reporting that they were not removed on a daily basis and evidence of skin damage on removal.
3. Equipment; over use of high specification equipment and the absence of good seating.

A more detailed presentation is planned for the Directors of Nursing meeting in November 2015 to discuss the analysis in more detail and identify the actions needed

across Wales.

Following this, WWIC will undertake its own review of the planning and implementation process in order to identify any lessons learnt during the first ever national wound audit.

WWIC extends its thanks to all the staff involved in the audit across NHS Wales, and the many commercial partners involved for their time and support in helping to deliver a successful first ever national wound audit in Wales.



# Stop Pressure Ulcer Day

Welsh Wound Innovation Centre

Thursday 19 November 2015

Patient Experiences 10:30am / 12:30pm / 14:30pm

## Location:

Welsh Wound Innovation Centre  
Rhodfa Marics  
Ynysmaerdy  
Pontyclun  
Rhondda Cynon Taff  
CF72 8UX  
01443 443870

Learn more about Pressure Ulcers (also known as bedsores) on **Stop Pressure Ulcer Day - Thursday 19 November** – At the fantastic Welsh Wound Innovation Centre, Llantrisant.



Aaron Ramsey from Arsenal and Wales supporting Stop Pressure Ulcer Day – Win this signed shirt!



Throughout the day we have:

- Patient Experiences
- Informative stands to browse and chat to experts
- Refreshments and Cakes
- Competitions and Prizes

Come for an hour and raise your awareness and understanding of Pressure Ulcers on **Stop Pressure Ulcer Day Thursday 19 November** and don't forget to bring a friend.

Confirm your attendance:

<http://doodle.com/poll/dgghm37ctqywqni>

or Call and leave a message stating which patient experience you are most likely to attend (10.30am / 12:30pm / 14:30pm): 01443 443870



# Annual Report

November 2015

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Leading the Field in Wound Prevention & Treatment

## WELSH WOUND INNOVATION CENTRE

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