

## PRESSURE ULCER EVIDENCE, COSTS AND OUTCOMES

A Common Language for  
Preventing Pressure Ulcers  
12.30 – 13.30 Thursday 20th September  
Argyll Room

...with people in mind

## Pressure Ulcer Evidence, Costs and Outcomes: A Common Language for Preventing Pressure Ulcers

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### Chair:

Professor Michael Clark, *University of Birmingham, UK*

### Speakers:

Professor Michael Clark, *University of Birmingham, UK*

Professor John Posnett, *Senior Vice President, Heron Evidence Development*

Professor Richard Goossens, *Delft University of Technology, Netherlands*

**Facing up to the challenge of reducing the number and severity of healthcare-acquired pressure ulcers (new wounds occurring under clinical supervision) in an environment of growing healthcare demands, national budgetary restrictions and increasing patient acuity is one many clinicians will do so with concern. Under these conditions it is perhaps easy to lose sight of the longer term possibilities and make decisions based on short-term budgetary benefit.**

**This symposium will revisit the economic and compassionate burden of pressure ulcers, question why we have rates that have failed to respond to best practice guidelines and consider the impact on local and national debt.**

**Given that 'pressure' remains the major focus of pressure ulcers, the panel will also discuss whether pressure-management, as a critical yet often neglected intervention, has been displaced by the search for novel solutions and whether a lack of reliable information has lead to a healthcare lottery. Taking support surfaces as an example, the speakers will illustrate that, when clinicians do not have access to reliable information, there is a likelihood that decisions are made by chance and a risk that outcomes are adversely affected when cost rather than cost-effectiveness drives financial decisions.**

**12.30 – 12.40**

## Don't throw the baby out with the bathwater

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### Professor Michael Clark (Chair)

Despite increasing attention and focus upon pressure ulcer prevention including initiatives such as the development and implementation of national and international guidelines, along with policy initiatives that may reduce financial allocations to health care organisations that care for people who develop 'avoidable' pressure ulcers, there remains little evidence that the number of people developing pressure ulcers is changing over time.

There are many sound reasons why the available epidemiological data fails to show clear trends in the number and severity of pressure ulcers with all of these flowing from a failure to develop methods to collect standard data in a reliable way across multiple service providers. However there are other factors that may challenge our ability to reduce the number of people who experience pressure ulcers. If we accept that the primary cause of pressure ulcers is immobility then the focus of preventive care should be designed to meet this challenge.

In recent years we have seen increasing interest in exploring other potential risk factors ranging from nutrition through to the local climate at the skin and support surface interface. Without doubt efforts to validate such factors as independent risk factors for pressure ulcer development are of scientific interest and have borne fruit for example in terms of the now general acceptance of nutrition as part of the jigsaw of pressure ulcer prevention.

Other parameters such as microclimate are equally fascinating to consider but will probably be found to be most challenging to conclusively demonstrate either their mode of action or clinical benefits given the widespread heterogeneity both between and within individuals in terms of their local skin climate both over time and in disease and health.

This is not to say that such endeavour is wasted and concepts such as microclimate should be ignored but rather that we should first and foremost focus upon the management of immobility and perhaps restrict our attention to other risks until or unless the benefits of managing these risk factors have been shown in terms both of their mode of action and benefit to patients in terms of reduced pressure ulcer incidence.



## 12.40 – 13.00

### Addressing the cost: can we afford to get prevention wrong?

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#### Professor John Posnett

The theme of this presentation will be a common one to anyone working in contemporary healthcare: a combination of population ageing and the introduction of new drugs and other medical technologies have led to unprecedented growth in the demand for healthcare, at a time when the growth of GDP in many countries is constrained. This is not a short term problem. The growth of demand is expected to exceed growth in GDP for the foreseeable future, and the challenge for healthcare providers will be to meet increasing demands with the same or fewer resources.

The cost of treating wounds is significant and growing, estimated to account in the UK for 2-3% of total healthcare spending, on a par with coronary heart disease. Pressure ulcers are the largest single component of the cost of wounds. This presentation will explore the resource costs of pressure ulcer treatment, with a focus on understanding the value of long term investments in clinically effective systems of prevention, rather than reducing procurement costs in the short term to meet immediate financial targets

## 13.00 – 13.20

### Design For Performance: Form and function of 'active' (alternating) pressure-redistributing mattresses

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#### Professor Richard Goossens:

##### Introduction

As the only certain cause of pressure injury (ulcer) is prolonged pressure with or without shear<sup>1</sup>, it is inconceivable that pressure management would not be considered the most important protective intervention. Today, this is typically achieved through a combination of patient repositioning and the use of pressure-redistributing (PR) surfaces for both the bed and the chair.

One of the two main PR modalities is 'active therapy'<sup>1,2</sup> (formerly alternating pressure); so called, because pressure redistribution occurs even when the patient does not move<sup>2</sup>. The design goal for 'active' surfaces is to address the primary pathology of pressure injury: prolonged pressure<sup>1</sup>. This is typically achieved through the cyclical inflation and deflation of air cells beneath the body, thus redistributing pressure several times each hour.

However, whilst 'active' surfaces are ubiquitous and appear relatively similar in design, they are certainly not standardised in either form or function. Physiological studies indicate that even very subtle differences in the off-loading performance, can produce significantly different results in areas such as perfusion and lymph flow. These differences may be clinically relevant, but the lack of reliable product description in clinical trials makes this difficult to establish. Even traditional interface pressure measurement is confounded by a lack of standardisation, making it impossible to compare results arising from different sources.

A question for purchasers and clinicians is how to access reliable information and what information is important? In 2007 the NPUAP identified 4 key performance criteria for active surfaces: cycle frequency; duration; amplitude; rate of change (loading and off-loading). To reliably measure these criteria requires a standardised test protocol. An expert group from Europe, USA and Japan (a sub-group of the NPUAP Support Surfaces Standardization Initiative) are currently developing a human analogue test rig (mannequin). The intention is to report clinically relevant performance data, which describes both the form and function of individual 'active' surfaces.

When concluded, the information will allow researchers to accurately describe support surfaces used in clinical studies, allow development teams to refine the next generation of support surface and, most importantly, it will enable clinicians to make informed prescription.

This will reverse the current situation where performance is selected by chance, products are substituted without an appreciation of their potential differences and cost-effectiveness is somewhat of a lottery.

#### Clinical relevance

Selection and prescription of an appropriate and effective bed or chair support surface requires access to standardised, reliable and clinically relevant data.

Performance (clinical benefit) can be predicted by neither appearance nor price. Substituting one active surface with another does not guarantee similar results.

#### References

- [1] EPUAP-NPUAP pressure ulcer prevention guideline. [www.epuap.org](http://www.epuap.org). 2009
- [2] NPUAP Support surfaces standardization Initiative; terms and definitions. [www.npuap.org](http://www.npuap.org). 2007

## 13.20 – 13.30

### Summary statements and Q&A

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#### Professor Mike Clark & Panel

## Meet the speakers

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### MICHAEL CLARK PHD

Michael Clark is a Visiting Professor in Tissue Viability, Tissue Viability Practice Development Unit, Faculty of Health, Birmingham City University, UK. He also works as an independent consultant having previously worked between 2003-09 within the Department of Dermatology and Wound Healing at Cardiff University and had responsibility for physical measurement research within the Department. A zoologist by training, Professor Clark has worked in tissue viability and wound healing since 1980.



Professor Clark is Manager of the Welsh Wound Network, Chief Executive of the Lindsay Leg Club Foundation and is the President of the European Pressure Ulcer Advisory Panel. He was Editor in Chief of the Journal of Tissue Viability from 2000 to 2010 and now serves as Emeritus Editor of that publication.

### JOHN POSNETT

*Senior Vice President,  
Heron Evidence Development*

John Posnett joined HERON, a leading health consultancy, in January 2011 as Head of the Health Economics Modelling Unit (HEMU). Before joining HERON he was Vice President of Health Economics at Smith & Nephew, where his particular interest was in the economics of medical devices. He was previously Director of the MSc programme in health economics at the University of York (1988-94) and later Professor of Health Economics and Director of a specialist health economics consultancy at the University (1994-2001). He has published widely in the areas of public economics and health economics.



### RICHARD HENDRIK MARC GOOSSENS

*Full Professor of Physical  
Ergonomics  
Coordinator Healthcare Program at  
Faculty Industrial Design  
Engineering  
Delft University of Technology  
Part time Professor of Physical Ergonomics  
Erasmus Medical Center  
Department of Neuroscience*



#### Research

The focus of my research is on the physical human factors during professional product use. The emphasis is on research of ergonomics in relation to product development in order to establish safe, comfortable and error-free task fulfillment in complex multi-user situations in a medical setting. The goal is to generate design requirements, methods and products. The requirements should anticipate the implementation of these products on a large scale and daily use.

This is done by obtaining insight in physical user aspects, such as anatomy, biomechanics, anthropometry and physiology in order to understand the underlying medical aspects of user complaints. These insights form the basis for biomechanical modelling and verification experiments on various user groups. Once scientifically validated, the acquired knowledge is transformed in engineering recommendations and products, which themselves can be evaluated as well.

*Peer reviewed publications: 72*

*Patents: 6*

*PhD-students: 8*

*ANNA-Award, for biomechanical studies on the musculoskeletal system in order to prevent pressure sores (1997)*

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