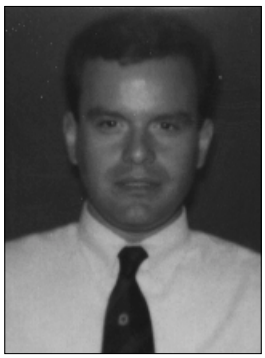
EUROPEAN PRESSURE ULCER ADVISORY PANEL

Trustees of the European Pressure Ulcer Advisory Panel

Mission Statement The European Pressure Ulcer Advisory Panel's objective is to provide the relief of persons suffering from, or at risk of pressure ulcers, in particular through research and the education of the public.

EPUAP Business Office:
Wound Healing Institute
Department of Dermatology
The Churchill Hospital, Old Road
Headington, Oxford, OX3 7LJ, UK
Tel: +44 (0)1865 228264
Fax: +44 (0)1865 228233
E-mail: EuropeanPressureUlcerAdvisPanel@compuserve.com

LETTER FROM THE PRESIDENT



Dr Marco Romanelli

DEAR EPUAP Member, the Fifth European Pressure Ulcer Advisory Open Meeting held in Le Mans, France was once again an extraordinary happening to 'share experiences' in our field. Providing a forum for people to exchange their ideas, advances, scientific and clinical research, education tools was a major goal for the EPUAP scientific programme committee. This was also the first time that the EPUAP joined a national society, the PERSE French group, and I really think that we must pursue this habit again in the future. The atmosphere during the symposium was always warm and caring, yet full of excitement and enthusiasm. A rich and diverse array of common, complex and controversial social and clinical issues in pressure ulcer management were discussed, providing the real sense of the vitality of our society. Considerable progress has been made in our understanding of pressure ulcers at both the scientific and clinical levels. The epidemiology of the disease is now better understood and there have been considerable advances in understanding the mechanisms of pressure development. From the fifth EPUAP meeting we have heard that new advanced dressings and pressure relief equipment will soon be introduced that may dramatically change the way we treat mild to moderate lesions. Furthermore, biotechnological approaches provide extra hope for highly selected patients. Despite the recent terrorist attack in the United States, we were proud to honour Mrs Barbara Braden as a recipient of the EPUAP Lifetime Achievement award. The incoming President of the NPUAP Prof Courtney Lyder was also in Le Mans to share with the Europeans the educational activities from United States. We must continue the friendship exchange of ideas and interactions with our colleagues in the United States.

The European Pressure Ulcers Prevalence Project was undertaken on 14 November and the data will be elaborated from the co-ordinators soon. Our society has given great emphasis on this project and I personally think that the results will have major impact in different countries from a social and political point of view.

Below:
Dr Marco Romanelli presents Mrs Barbara Braden with the EPUAP Lifetime Achievement award

At the beginning of the new year we may be considered satisfied about what we have achieved during the previous years and we are looking forward to reach new and ambitious goals in the future and I encourage all the EPUAP members to be involved in the activities of the society and to send us comments and suggestions about future developments,

Marco Romanelli
President

EUROPEAN PRESSURE ULCER ADVISORY PANEL

Letter from the Editor

EDITORIAL

Dr Michael Clark

FIRST I would like to wish all EPUAP members a very happy and peaceful new year! It seems like only yesterday we were preparing to attend the Le Mans conference, and again we must thank Dr Denis Colin for his organisation and hosting of what was yet another successful EPUAP Annual Conference. Now we face 2002 and our first meeting in Central Europe – and both as Editor of this newsletter, and as Recorder of the EPUAP, I look forward to meeting with you in Budapest this coming September. The Budapest meeting will strongly focus upon one of the key strengths of the EPUAP – the on-going efforts of the Working Groups. During the meeting each active Working Group will take the lead over a half-day programme that focuses both on their activities and plans and also upon related presentations that reinforce the Working Group's scientific and clinical foundations. I would encourage all EPUAP members to consider becoming actively involved with one, or several EPUAP Working Groups – currently these tackle the measurement of pressure ulcer prevalence across European hospitals, the risk factors for pressure ulcer development following hip fracture and the more general search for 'true' risk factors for pressure ulcer development. Details of each Working Group can be found within this issue of the *EPUAP Review* and I would strongly urge members to contact the Chair of Groups that interest you. One EPUAP Working Group, considering the evaluation of patient support surfaces reports its actions and conclusions within this issue of the *Review*. I would personally like to thank Dr Macleod for his stewardship of this Working Group, and consider that his direction has presented a model highlighting how we can achieve a stronger involvement of researchers and clinicians who currently work within the commercial sector within the efforts, and success of the EPUAP.

Once again I feel I must close my editorial by reminding members that this is your newsletter and that I would welcome new contributions of news, articles and opinion pieces from any member of the organisation. Over 2002 the current Working Groups of the EPUAP will all make strong contributions of new ideas and data within this newsletter. However, there remains plenty of space for other contributions! Perhaps you might like to contact me through the EPUAP Business Office to discuss potential articles for inclusion in future issues of the *Review*? Finally I repeat my hopes that all EPUAP Members will enjoy a successful year in 2002 and that as an organisation we will continue to gain a deeper understanding of pressure ulcers, their causes, treatment and prevention.

Michael Clark
Editor

PILOT SURVEY OF THE PREVALENCE OF PRESSURE ULCERS IN EUROPEAN HOSPITALS

OVER two days in November (14th and 15th) 2001, a pilot survey recording the prevalence of pressure ulcers across a number of European hospitals was undertaken by the EPUAP. Data was collected across ten countries (Belgium, England, France, Italy, Netherlands, Northern Ireland, Portugal, Scotland, Spain and Wales) with a minimum of two hospitals participating in the survey, typically each country collected data from around 1000 patients. While the data is currently being collated and analysed, with the first presentation to occur during the Sixth Open Meeting of the EPUAP (Budapest September 2002), this article highlights some of support material provided to participants by the EPUAP Prevalence Working Group. Each National Co-ordinator received a CD-ROM containing all of the forms and supporting documentation required to undertake the survey. From this material the research protocol and photographic guide provided to assist pressure ulcer classification are reproduced in this issue of the EPUAP Review. The Budapest meeting in 2002 will provide ample opportunity for debate regarding the methods, results and future steps the EPUAP should take to improve our understanding of the epidemiology of pressure ulcers. The EPUAP Prevalence Working Group would like to thank Smith & Nephew Ltd for their generous financial support that made this pilot study possible.

European Pressure Ulcer Prevalence Survey

Research Protocol

1. Introduction

Pressure ulcers are an important problem in all health care settings. Each year a lot of time and money is spent on the treatment of pressure ulcers. The prevention of pressure ulcers receives less attention, partly because there was no specific policy for pressure ulcers. In addition, the basis to develop a prevention policy for pressure ulcers was rather small (Dutch Steering Committee Pressure Ulcers, 1997). In the Netherlands a national pressure ulcer prevalence survey started in 1998, and this was the onset of more attention for the prevention of pressure ulcers.

Last year it was proposed to conduct an audit with the aim of collecting prevalence or incidence data on pressure ulcers at several European acute care hospitals and nursing homes, prior to implementing the *EPUAP Guidelines* (EPUAP, 1998). A similar exercise would be performed again after an agreed period, six months or one year, in order to ascertain whether the implementation of the guidelines had had any effect on prevalence or incidence figures. However, a discussion of this strategy concluded that this audit was too ambitious. It was obvious that more time would be needed to prepare the audit and it was felt that the highest priority had to be given to the development of a minimum data set, which would be valid across Europe. We started by inviting various experts in the field of pressure ulcers from different European countries to discuss a minimum key data set. Furthermore, it was agreed that operational definitions would be needed for the key terms. Finally, we wanted to know the minimum level of interest and commitment required for countries to be selected as participants.

The data collection procedure is designed on the basis of experience gained in the Netherlands, where three national measurements of pressure ulcers have been conducted (Bours, 1998; Bours, 1999; Bours, 2000).

2. Registration

Literally, to register means to record by using an instrument in order to establish the course of a process or phenomenon (Geerts and Heestermans, 1997). Registration can roughly be divided into two types, i.e., continuous registration and discontinuous registration.

Continuous registration means that phenomena, in this case the prevalence of pressure ulcers, is constantly being measured. The incidence of pressure ulcers can be established by means of continuous registration. The incidence rate indicates the number of new cases of a particular disease or condition, in this instance pressure ulcers, in the studied population over a particular period of time. (Bouter and van Dongen, 1995). All members of the study population should in principle run the risk of developing pressure ulcers and have no pressure ulcers at baseline.

Discontinuous registration, in this case, means that the prevalence of pressure ulcers is recorded incidentally, with or without a certain regularity. Discontinuous registration can, therefore, only establish the prevalence of pressure ulcers. The prevalence rate indicates the numbers of a studied population who have pressure ulcers at a particular moment in time (Bouter and van Dongen, 1995). Previous research has shown that discontinuous registration is easy to carry out in health care institutions, whereas permanent registration appears to be much more difficult to realise. Although daily inspection and registration of pressure ulcers are an essential part of the nurses' duties; it is inadequately executed in practice. Continuous registration, both

by nurses and by doctors, may therefore lead to an underestimation of pressure ulcers. In addition, this type of registration is labour-intensive (Gunning-Schepers, *et al.*, 1993). The EPUAP has therefore decided to limit their measurement to the prevalence of pressure ulcers and to use the results to establish whether their guidelines have had the intended effect.

3. Data collection form

The data collection form that will be used for the European data collection of pressure ulcers has been outlined by eighteen people from ten different European countries, and was further elaborated in greater detail by a small working group. The form was piloted in three different countries, the UK, Belgium and in the Netherlands. After piloting a few amendments were made for the final form.

The data collection form consists of five categories of questions, i.e.

1. The first category shows whether the data were collected in a university hospital or a general hospital, as well as the number of beds in the setting. Each country has its own code.
2. The second category, that of patient data, indicates the patients' age, gender, expected length of stay and care type. After piloting the form, the latter was simplified to intensive care, acute care or high dependence, chronic care and neurology/rehabilitation.
3. The third category is that of risk assessment. The countries represented in the working group agreed to use the Braden scale plus the incontinence item from the Norton scale.
4. The fourth category provides details about skin observations. The severest ulcer is to be recorded, using the EPUAP classification. It was agreed that necrotic ulcers are to be recorded as deep ulcers (grade 4). In addition, the location of the severest ulcer will also be recorded. Where multiple ulcers of the same grade are present, the pressure ulcer to be recorded is the one which, in the judgement of the nurse, has the greatest impact on the patient and his quality of life. Furthermore, a drawing is to be made to record all existing pressure ulcers.
5. The last category involves the equipment used and whether the patient is being repositioned. Beds or chairs are to be categorised as powered or non-powered, while manual repositioning intervals (if any) are to be recorded as well.

The form is included as an appendix (Appendix 1). All participating institutions will be provided with sufficient data collection forms to conduct the survey. The national co-ordinators will be asked to translate the forms and all the other training and information documents for their own countries.

4. Risk population

The prevalence measurement in acute care hospitals will take place on one particular day. The risk population will include all patients staying overnight on the day of the survey is to be physically examined for the presence of pressure ulcers. All inpatient areas have to be surveyed with the exception of psychiatry, day care and maternity units.

5. Procedure and data collection

Each participating country needs to identify a national co-ordinator who would be responsible for the training of the local co-ordinators. The national co-ordinator would have to offer a minimum level of commitment to the project. For 2001 this was defined as being 'A minimum of 750 patients to be recruited from at least one university and at least one general hospital.'

The tasks of the national co-ordinator are:

- Recruitment of acute care hospitals for participating in the survey
- To be a contact person between the local co-ordinator and the EPUAP working group To train the local co-ordinators
- To take care of the translation of the documents in the appropriate language
- To provide the local co-ordinators with sufficient data collection forms
- To see to the transfer of the data to the EPUAP working group

Each institute participating in the European data collection of pressure ulcers is expected to appoint their own local co-ordinator. The local co-ordinator will be responsible for the internal co-ordination during the data collection period and will function as the contact person for the national co-ordinator. The tasks of a co-ordinator are:

- To ask permission of the relevant internal bodies such as the Institutional Review Board (if present);
- To form a team of specialist nurses. Every member of the team will carry out measurements in one or more wards together with a nurse of that particular ward. So, the size of the team depends on the number of wards participating in the data collection;
- To draw up a time schedule for data collection within the institute;
- To draw up a roster for the team of nurses who are to carry out the measurements;
- To collect all the forms per ward and to check the data
- To copy all the forms
- To see to the transfer of the data (original forms) to the national co-ordinator or the EPUAP working group;
- To fill in and return an evaluation form about the survey.

The institute co-ordinator receives training by the national co-ordinator, together with the co-ordinators of the other institutions participating in the data collection. In addition, each institution co-ordinator is provided with materials for the instruction of the nurses, a protocol (including a sample request to the Institutional Review Board), patient information forms, consent forms, and sufficient data collection forms. Ward data and patient data are recorded by the nurses. Each participating patient is coded, still allowing the wards to check whether each patient who

wanted to participate has been registered. The patients remain anonymous to the research group. The co-ordinator divides the team of nurses over the wards, taking into account that, if possible, the 'non-ward' nurses, performing tasks that are not related to one particular ward, should not carry out measurements in their own ward. These nurses are assisted during the measurement by a staff nurse who knows the ward well and can provide relevant background information about the individual patients as well as the ward. The 'non-ward' nurse and the staff nurse should agree on the grade to be filled in on the data collection form. If they do not agree, the 'non-ward' nurse decides which grade of pressure ulcer should be recorded.

To ensure reliability the local co-ordinator will randomly select one ward from each site and in addition to the team of two nurses who would be completing the data, will perform a second set of forms based on their individual observation of the patients. Furthermore, throughout the data collection time span the local co-ordinator should visit all wards involved and observe that they are following the procedure for data collection correctly, i.e., they are examining the patients and not taking information from patient notes. The local co-ordinator needs to inform the EPUAP working group which ward has had a dual measurement otherwise some patients could be registered twice. The EPUAP working group will analyse the dual measurements to establish the reliability of the performed data collections.

6. Data Processing

The EPUAP working group will use SPSS to process the data. The data will be described on a national level indicating the institution category and ward category. Depending on the measurement scale of the variables, either mean values or frequencies will be established, allowing each institution to compare their own results to the mean national results.

7. Data Protection

The EPUAP will ensure anonymity of all patients participating in the study. Specific data protection regulations of any of the participating countries will be adhered to as appropriate.

8. Informed Consent

All participating patients and/or contact persons will receive written information in advance about the aim and method of the national data collection (Appendix 3). This will be done during the visiting hours a day before the measurement. The patients will be asked for oral permission to participate, but they are not registered during that visit. This procedure deviates from the usual procedure, but because of the size of the study population (all patients in the institutions or receiving home care) that have to be examined for pressure ulcers on one and the same day, a written procedure to obtain informed consent can cause delay that may obstruct the survey. Also in some countries, the patients' anonymity may be at stake if they are to sign consent forms. In addition, it is a basic part of the care provided by nurses to examine and palpate for the presence of pressure ulcers in patients who are at risk of developing pressure ulcers. If any patient is not able to understand the information and to give informed consent, a relative or contact person should be informed and asked for permission. This procedure was approved by the Medical Ethical Approving Committee of the University Hospital Maastricht, in Maastricht.

Literature

Bours, G.J.J.W. and Halfens, R.J.G. (1997). Landelijke registratie van decubitus. Pilotstudie. Universiteit Maastricht, Vakgroep Verplegingswetenschap, Maastricht. [National Registration of Pressure Ulcers. Pilot study. Department of Nursing Science, Maastricht University].

Bours, G.J.J.W., R.J.G. Halfens and A. de Winter. (1998). Landelijk prevalentie onderzoek decubitus. Uitgebreide resultaten eerste jaarlijkse meting 1998. Universiteit Maastricht, Vakgroep Verplegingswetenschap, Maastricht. [National pressure ulcer prevalence survey. Extensive results of the first national survey 1998. Department of Nursing Science, Maastricht University; Steeringgroup Decubitus]. Maastricht: 167.

Bours, G.J.J.W., Halfens, R.J.G. and Joosten C.M.M. (1999a). Landelijk Prevalentie Onderzoek Decubitus. Uitgebreide resultaten tweede jaarlijkse meting 1999. Maastricht., Universiteit Maastricht, Vakgroep Verplegingswetenschap [National pressure ulcer prevalence survey. Extensive results of the second national survey 1999. Department of Nursing Science, Maastricht University; Steeringgroup Decubitus]. Maastricht: 134.

Bours, G.J.J.W., Halfens, R.J.G. and Joosten C.M.M. (2000). Landelijk Prevalentie Onderzoek Decubitus. Resultaten derde jaarlijkse meting 2000. Maastricht., Universiteit Maastricht, Vakgroep Verplegingswetenschap. [National pressure ulcer prevalence survey. Results of the third national survey 2000. Department of Nursing Science, Maastricht University; Steeringgroup Decubitus]. Maastricht: 186.

Bours, G. J. J. W., Halfens, R. J. G., Lubbers, M., and Haalboom, J.R.E. (1999b). 'The development of a national registration form to measure the prevalence of pressure ulcers in the Netherlands.' *Ostomy/Wound Management* 45(11): 28–40.

Bouter, L.M. and van Dongen, M.C.J.M. (1995). Epidemiologisch onderzoek. Opzet en interpretatie. [Epidemiologic Research. Design and interpretation] Bohn, Stafleu Van Loghem BV, Houten.

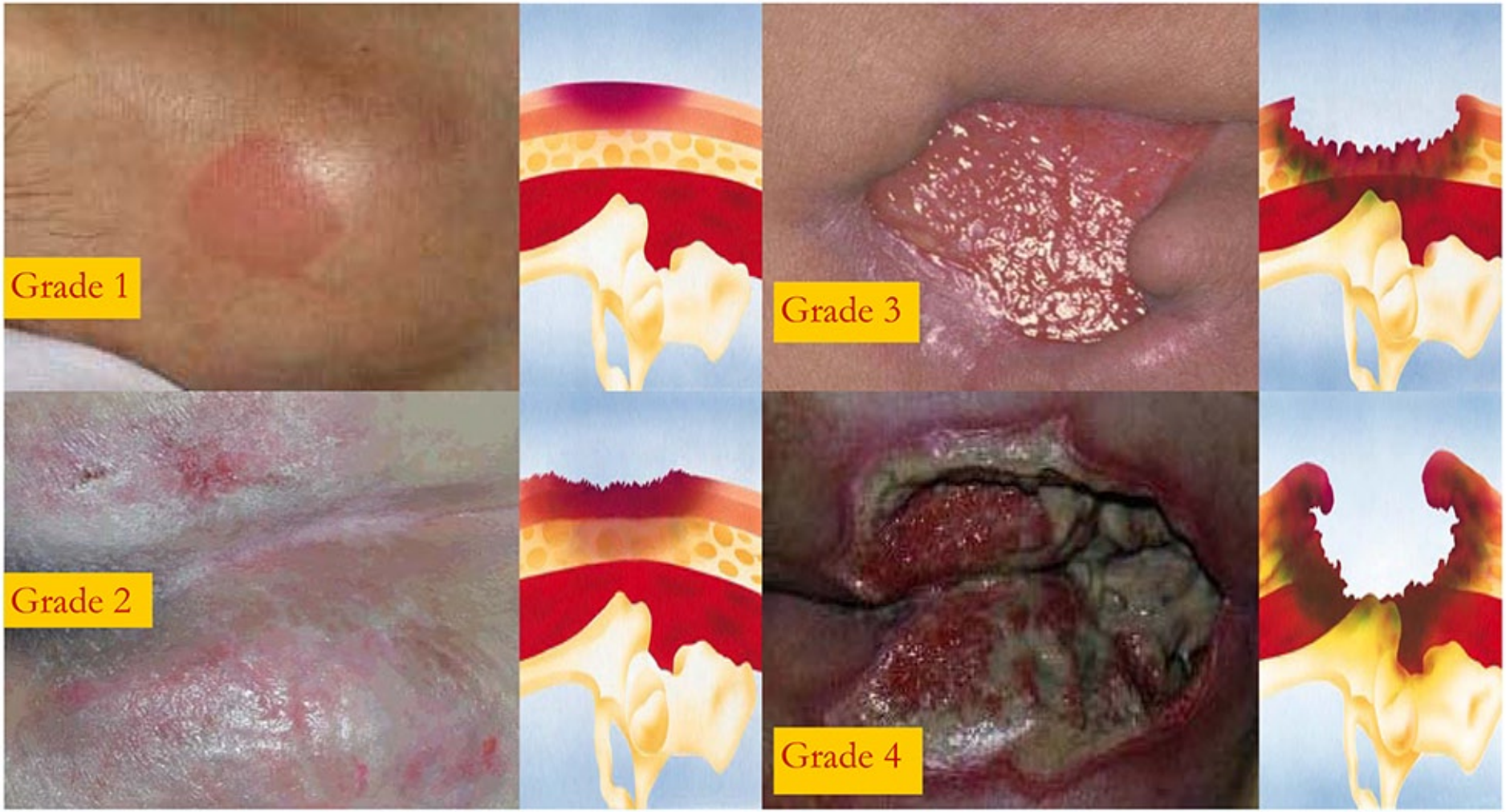
EPUAP, (1998). A policy Statement on the prevention of pressure ulcers from the European Pressure Ulcer Advisory Panel. *British Journal of Nursing* 7 (15): 888–890.

Geerts, G. and H. Heestermans (eds) (1997). Van Dale. *Groot woordenboek der Nederlandsetaal.* Utrecht/Antwerpen.

Gunning-Schepers, L.J., Wendte, J.F. and Welleman, E. (1993). Decubitus in Nederland. Een onderzoek naar de mogelijkheid om het voorkomen van decubitus in Nederland te meten. [Pressure ulcers in the Netherlands. Studying the possibility to measure the prevalence of pressureu ulcers in the Netherlands]. Instituut voor Sociale Geneeskunde, Universiteit van Amsterdam, Amsterdam.

European Pressure Ulcer Advisory Panel
Guide to Pressure Ulcer Grading

EPUAP 2001



Line diagrams reproduced by kind permission of Huntleigh Healthcare Ltd

6TH EUROPEAN PRESSURE ULCER ADVISORY PANEL OPEN MEETING

Hilton Hotel, Budapest, Hungary, September 18–21, 2002

THE sixth open meeting of the European Pressure Ulcer Advisory Panel will be held in the beautiful and historic city of Budapest, Hungary and will continue to build on the success of the panel's previous annual meetings. The mandate of the panel relates solely to pressure ulcers and this allows a focused approach as well as an excellent opportunity to exchange knowledge with others working actively in this field.

The theme of this year's meeting is '***Pressure Ulcers – a quality of care indicator?***' As at past meetings, this will allow professional health workers an excellent opportunity to improve their knowledge and understanding of the management and prevention of pressure ulcers. In addition there will be an update of the latest research into pressure ulcers included in the programme.

Well known speakers from throughout Europe and the rest of the world will be covering topics on this year's theme as well as other related aspects of pressure ulcers. In addition to the main theme – 'Pressure Ulcers – a quality of care indicator?', updates on risk factors and risk assessments and ulcer stage reassessment will be presented along with new developments in pressure ulcer management. Free papers will be included in the relevant sessions. Poster presentations will be displayed throughout the meeting and there will be an opportunity for poster presenters to briefly summarize their posters orally. Attendance at the Budapest meeting will allow delegates to take part in shaping the future of pressure ulcer care.

Budapest (*above*), the venue of this year's meeting, is one of the most beautifully situated cities in Europe. The broad Danube river runs though the middle of the city and the Danube panorama has been declared as a UNESCO World Heritage Site. A number of pre-congress and post-congress tours are offered.

The congress will be held in the Hilton Hotel, overlooking the river and the city. The scientific programme will be held in the congress facilities of the Hilton Hotel. The 'Lifetime Achievement award' for work related to pressure ulcers will be presented to the recipient at this meeting's congress dinner.

The outline programme is as follows:

Wednesday, September 18th

Central European Regional Pressure Ulcer meeting

EPUAP Scientific Programme

This annual meeting of the EPUAP focuses upon action – with the first presentation of the results of two major studies undertaken by EPUAP in 2001. The meeting will also develop three major position statements – upon risk assessment, measuring incidence and the cost of pressure ulcers. These will serve as landmarks in the ongoing efforts to meet the challenges posed by pressure ulcer prevention and management.

Thursday September 19th

Morning: Satellite symposium

Wound Bed Preparation for Pressure Ulcers

SPONSORED BY SMITH & NEPHEW

12.00 noon – Start of main meeting

- Welcome and introduction
- What do we mean by quality in pressure ulcer prevention and treatment?
- European survey of quality measurements in pressure ulcer prevention and treatment.
- Measuring how pressure ulcers affect quality of life.
- Debate – Formation of position statement measuring cost and quality associated with pressure ulcers.
- EPUAP Prevention and treatment guidelines update
- Lecture 2002 from lifetime achievement award recipient

Friday September 20th

- Hip fractures
- Report from EPUAP working group PEPUS study
- The Hip – anatomy
- The Hip – aetiology and prevention of pressure ulcers including case studies
- Pressure ulcers and hip fractures
- Free papers
- EPUAP Prevalence survey results
- Interpreting prevalence and incidence data – what can be achieved in the real world?
- EPUAP statement on incidence monitoring
- Free papers
- Plenary lecture: Case mix adjustments – ideal and practical limitations

Saturday September 21st

- Risk factors and risk assessments in pressure ulcers
- Report from EPUAP working group
- EPUAP position statement on evaluation of risk assessment tools
- President's address
- Presentation of poster awards
- 12.00 noon end of meeting

Social Programme during meeting

(All included in registration fee)

Thursday evening (19 September)

- Reception and entertainment at Hilton Hotel overlooking the Danube river

Friday evening (20 September)

- Congress dinner and entertainment
  Hilton Hotel, Grand Ballroom
  SPONSORED BY HUNTLEIGH HEALTHCARE

There are additional social events organised on Wednesday 18 September and Saturday 21 September.

Call for abstracts

Deadline: 15 June 2002

- The abstracts should be on one A4 page with 2 cm margins around page.
- Title, authors and institutions should be included.
- Presenting author to be underlined.
- The abstracts should be written in the following format: Introduction, Methods, Results, Summary.
- Please indicate preference for poster or oral presentation.
- Abstracts will only be accepted accompanied by a disc or sent by e-mail to:
  EuropeanPressureUlcerAdvisPanel@compuserve.com

Posters will be displayed throughout the meeting and there will be oral poster summary sessions.

Fishermen's Bastion and the Danube, viewed from the conference hotel.

UPDATING THE EPUAP PRESSURE ULCER PREVENTION AND TREATMENT GUIDELINES

Jacqui Fletcher

THE EPUAP guideline on pressure ulcer prevention was published in 1998 (EPUAP, 1998) and was followed shortly afterwards by a second guideline upon pressure ulcer treatment (EPUAP, 1999). While these guidelines were strongly influenced by the US Agency for Health Care Policy and Research guidelines, the membership of the EPUAP were able to direct the content of each guideline through discussion sessions during EPUAP open meetings. Through this approach of engaging the membership, it was hoped that the guidelines would not only represent the most up-to-date practice but also be clinically relevant to a wide range of practitioners from different professional backgrounds.

In line with the recommendations of many authorities on guideline development (for example Field and Lohr 1992, SIGN 2001) the EPUAP now wishes to revisit and review the guidelines. This process is required to:

a) ascertain if the statements within each guideline remain valid;
b) to include new research findings which may strengthen individual statements; and
c) to determine if the guidelines remain clinically relevant.

Such a review obviously requires considerable effort on the part of the EPUAP and its members and would usually necessitate the completion of a systematic review to identify all new evidence. However, undertaking a formal review may represent considerable wasted effort if it reveals little or no new information, furthermore where guidelines were initially based on a properly performed and documented review any update may not need a completely new systematic review (Browman 2001). Given that the EPUAP guidelines were initially based on the reviews carried out by the Agency for Healthcare Policy and Research it was considered that a repeat of these systematic reviews was not required and a more practical method of guideline updating was sought.

Why should a guideline be updated? Shekelle *et al* (2001) identified six scenarios when a guideline may require revision, these were;

- Changes in evidence on the existing benefits and harms of interventions
- Changes in outcomes considered important
- Changes in available intervention
- Change in evidence that current practice is optimal
- Changes in values placed on outcomes
- Change in resources available for healthcare.

In a second publication, Shekelle and colleagues (2001) have reported a methodology allowing rapid updating of clinical guidelines that will be adopted by the EPUAP. Their approach combined limited literature searching with contact with the initial guideline developers (the 'experts') to determine if new research had been published or completed that would require the guideline to be updated or even re-written. Shekelle *et al.* recommended that guidelines should be reviewed regularly with a recommended interval between reviews being in the region of three years. Such an interval would suggest that the EPUAP prevention guidelines are now be due for review, and perhaps updating.

At this time the EPUAP would like to invite members to participate in this process of identifying important new evidence and assessing whether the new evidence justifies updating the pressure ulcer prevention guideline. The guidelines (reprinted below) should be thoroughly reviewed and the following three questions addressed in relation to the scenarios described above.

1. Are you aware of new evidence or development in the field relevant to each guideline statement?
2. Is the new evidence or development of sufficient importance to invalidate any of the guideline statements?
3. Are there new guideline statements (within the scope of the original guideline) that should be included given the existence of new research or clinical developments?

It should be borne in mind that the guidelines were developed to be useful to countries across Europe working in many different healthcare settings with differing levels of resources. The words chosen were selected very carefully to allow for direct translation into the many European languages and the purpose of this review is not to enter into lengthy discussion about the phrasing of individual statements unless a statement has led to particular confusion or difficulties in practice.

Suggestions for areas that require updating or review should be made in writing to Jacqui Fletcher, at:

< j.fletcher@herts.ac.uk >

and a copy of the supporting evidence provided. The deadline for return of this information is 28 March 2002.

References

Browman G.P. Development and aftercare of guidelines. The balance between rigor and pragmatism *JAMA* 2001 **286** (12) 1509–1511.

EPUAP. *British Journal of Nursing.* 1998 **7** (15) 888–889.

EPUAP. Guidelines on treatment of pressure ulcers *EPUAP Review* 1999 **1** (2) 31–33.

Field M.J. and Lohr K.N. eds. *Guidelines for Clinical Practice: From Development to Use.* Washington DC National Academy Press 1992

Shekelle P., Eccles M.P., Grimshaw J.M. and Woolf S.H. When should guidelines be updated? BMJ 2001 **323** 155–157

Shekelle PG, Oritz E, Rhodes S, Morton SC, Eccles MP, Grimshaw JM and Woolf SH. Validity of the Agency for Healthcare Research and Quality Clinical Practice Guidelines. How quickly do guidelines become outdated? *JAMA* 2001 **286** (12) 1461–1467.

SIGN. *SIGN 50 A Guideline developers handbook.* Available through http://www.show.scot.nhs.uk/sign/guidelines/fulltext/50/. 2001. Scottish Intercollegiate Guidelines Network Edinburgh.

The EPUAP Guidelines on Pressure Ulcer Prevention

Guidlines are based on the following evidence:

[A] *Results of two or more randomised controlled clinical trials on pressure ulcers in humans provide support.*

[B] *Results of two or more controlled clinical trials on pressure ulcers in humans provide support, or where appropriate, results of two or more controlled trials in an animal model provide indirect support.*

[C] *This rating requires one or more of the following:*

1) *results of one controlled trial,*
2) *results of a least two case series/descriptive studies on pressure ulcers in humans, or*
3) *expert opinion.*

Pressure damage is common in many healthcare settings across Europe affecting all age groups and is costly both in terms of human suffering and use of resources. With an ageing population, and changes in patterns of sickness, this problem will increase unless action is taken. In all care settings the risk of pressure damage should be highlighted.

Most pressure damage could be prevented and it is important to have prevention and educational strategies in place. [B] These should be based on the best available evidence.

All interventions and outcomes should be monitored and documented.

RISK ASSESSMENT TOOLS AND RISK FACTORS

1. Goal: Identify 'at risk' individuals needing prevention and the specific factors placing them at risk

We believe that there are a number of issues associated with risk assessment tools. Risk assessment should be used as an adjunct to clinical judgement and not as a tool in isolation from other clinical features. [C]

There should be clarification of a full risk assessment in patients to include:

General medical condition, skin assessment, mobility, moistness and incontinence, nutrition and pain. [C]

All strategies related to pressure damage should always be based on the best available evidence.

Assessment of risk should be more than just the use of an appropriate risk assessment tool and should not lead to a prescriptive and inflexible approach to patient care. [C]

Whilst risk assessment should be performed immediately on entry into an episode of care, this assessment may take time to fully complete if information is not readily available. [C]

Assessment should also be ongoing and frequency of reassessment should be dependent on change in the patient's condition with the environment.

2. Goal: Maintain and improve tissue tolerance to pressure in order to prevent injury

Skin condition should be inspected and documented daily and any changes should be recorded as soon as they are observed. Inspection *must* be documented.

Initial skin assessment should take into account the following:

I Bony prominences (sacrum, heels, hips, ankles, elbows, occiput) to identify early signs of pressure damage.

II Identify the condition of skin – dryness, cracking, erythema, maceration, fragility, heat and induration. [C]

Every effort should be made to optimise the condition of the patient's skin. Assessment of patients with dark or tanned skin is especially difficult. [C]

Avoid excessive rubbing over bony prominences as this does not prevent pressure damage and may cause additional damage. [C]

Find the source of excess moisture due to incontinence, perspiration, or wound drainage and eliminate this, where possible. When moisture cannot be controlled interventions that can assist in preventing skin damage should be used. [C]

Skin injury due to friction and shear forces should be minimised through correct positioning, transferring and repositioning techniques.

Following assessment nutritionally compromised individuals should have a plan of appropriate support and/or supplementation that meets individual needs and is consistent with overall goals of therapy. [C]

As the patient's condition improves the potential for improving mobility and activity status exists, rehabilitation efforts may be instituted if consistent with the overall goals of therapy. Maintaining activity level, mobility, and range of movement is an appropriate goal for most individuals. [C]

All interventions and outcomes should be monitored and documented. [C]

EXTERNAL PRESSURE AND SUPPORT SURFACES

Goal: Protect against the adverse effects of external mechanical forces; pressure, friction and shear

Any individual who is assessed to be at risk of developing pressure ulcers should be repositioned if it is medically safe to do so. [B] Frequency of repositioning should be consistent with overall goals. [C] Documentation to record repositioning should be completed. Correct positioning and support is important to minimise friction and shear in both bed and chair. [C]

Correct positioning or devices such as pillows or foam wedges should be used to keep bony prominences (for example knees, heels or ankles) from direct contact with one another in accordance with a written plan. [C] Care should be taken to ensure that these do not interfere with the action of any other pressure relieving support surfaces in use. [C]

When repositioning patients do so in such a way as to minimise the impact on bony prominences. [C]

Devices to assist manual handling should be used during transfer and positioning of patients to minimise shear forces for those patients who require assistance in movement in accordance with EU manual handling regulations.

In all care settings individuals considered to be at risk of developing pressure ulcers should have a personalised written prevention plan which may include a pressure redistributing device. [C]

Patients at risk of developing pressure ulcers because of the time spent sitting in a chair should be allocated a chair of the correct height in addition to a pressure relieving device. [B]

Any person who is acutely ill and is at risk of developing a pressure ulcer should avoid uninterrupted sitting out of bed. [B] The period of time should be defined in the individualised care plan but generally will not be more than two hours. [B] Individuals, where appropriate, should be encouraged to reposition themselves if this is possible. [B]

Individuals at risk from pressure ulcers who are likely to spend substantial periods of time in a chair or wheel chair should generally be provided with a pressure redistributing device. [B]

Individuals who are able should be taught to redistribute weight every fifteen minutes. [C]

EDUCATION

Goal: To improve the outcome for patients at risk of pressure damage through educational programmes.

Educational programmes for the prevention of pressure damage should be structured, organised and comprehensive, and made available at all levels of health care providers, patients and family or caregivers. [C]

The educational programme for prevention of pressure damage should include information on the following items:

- Pathophysiology and risk factors for pressure damage.
- Risk assessment tools and their application.
- Skin assessment.
- Selection and instruction in the use of pressure redistributing and other devices.
- Development and implementation of individualised programmes of care.
- Principles of positioning to decrease risk of pressure damage.
- Documentation of processes and patient outcome data.
- Clarification of responsibilities for all concerned with this problem.
- Health promotion.
- Development and implementation of guidelines.

The educational programme should be updated on a regular basis based on the best available evidence. The content of the programme should be modified according to the audience. [C]

The EPUAP Guidelines on Pressure Ulcer Treatment

DEFINITION

Pressure Ulcer

A pressure ulcer is an area of localised damage to the skin and underlying tissue caused by pressure, shear, friction and or a combination of these.

The above is a working definition. New theories are being developed but further work is required before they can be included in an accepted definition.

CLASSIFICATION

Grade 1: non-blanchable erythema of intact skin. Discolouration of the skin, warmth, oedema, induration or hardness may also be used as indicators particularly on individuals with darker skin.

Grade 2: partial thickness skin loss involving epidermis, dermis, or both. The ulcer is superficial and presents clinically as an abrasion or blister.

Grade 3: full thickness skin loss involving damage to or necrosis of subcutaneous tissue that may extend down to, but not through underlying fascia.

Grade 4: extensive destruction, tissue necrosis, or damage to muscle, bone, or supporting structures with or without full thickness skin loss.

GUIDELINES

Guidlines are based on the following evidence:

[A] *Results of two or more randomised controlled clinical trials on pressure ulcers in humans provide support.*

[B] *Results of two or more controlled clinical trials on pressure ulcers in humans provide support, or where appropriate, results of two or more controlled trials in an animal model provide indirect support.*

[C] *This rating requires one or more of the following:*
1) *results of one controlled trial,*
2) *results of a least two case series/descriptive studies on pressure ulcers in humans, or*
3) *expert opinion.*

ASSESSMENT

Assessing the Pressure Ulcer

Assess the pressure ulcer(s) initially for location, grade, size, wound bed, exudate, pain and status of surrounding skin. Care should be taken to identify undermining and sinus formation. [C]

Reassess pressure ulcers when possible daily or at least weekly. If the condition of the patient or of the wound deteriorates, re-evaluate the treatment plan as soon as any evidence of deterioration is noted. [C]

History and Physical Examination

Perform a complete history and physical examination, because a pressure ulcer should be assessed in the context of the patients overall physical and psychosocial health. Address identified needs. [C]

ASSESSING COMPLICATIONS

Nutritional assessment and management

Ensure adequate dietary intake to prevent malnutrition to the extent that this is compatible with the individual's wishes or condition. [B]

Pain assessment and management

Assess all patients for pain related to the pressure ulcer or its treatment and document. [C]

Manage pain by eliminating or controlling the source of pain (e.g., covering wounds, adjusting support surfaces, repositioning).

Provide medication or other methods of pain relief as needed and appropriate. Seek specialist advice if necessary. [C]

Psychosocial assessment and management

Assess resources (e.g., availability and skill of caregivers, home conditions, equipment, patients preference) for individuals being treated with pressure ulcers in the home. [C]

MANAGING TISSUE LOADS

Managing tissue loads can be achieved in a variety of ways including:

1) manual repositioning,
2) use of specialist equipment,

and is a 24-hour provision whether the patient is in a bed or chair. Periods spent immobile in chairs should be limited to two hours or less per session, unless their clinical condition prevents doing so. [B]

Following assessment of the patient and pressure ulcer a plan of treatment consistent with the overall goal of therapy should be developed. [C]

Whenever possible avoid positioning patients directly on a pressure ulcer or directly on a bony prominence unless this is contra-indicated by their general treatment objectives, in which instance an adequate pressure ulcer device (e.g., an alternating pressure device) should be used. [C]

THE USE OF PRESSURE ULCER PREVENTION DEVICES

There is no agreed definition of the terms of pressure:

relief – reduction – redistribution.

Therefore for simplicity the term pressure ulcer prevention device will be used.

Consider postural alignment, distribution of weight, balance, stability, and pressure ulcer risk reduction when positioning patients or selecting equipment. This is especially important in the sitting position whether in bed or chair. [C]

Reposition, or where possible teach the patient to reposition themselves at frequent intervals to redistribute pressure. [C]

Benefit may be derived from a variety of pressure ulcer prevention devices but information on patient outcomes and information on the cost effectiveness of any of these devices is scarce. [B]

It is necessary to develop international and European standards to which these devices should perform, e.g., similar to already existing standards in some countries. [C]

WOUND TREATMENT

Debridement is defined as the removal of devitalised tissue from a wound.

The rationale for removing such tissue is that

- it removes a medium for infection,
- it facilitates healing,
- it aids assessment of wound depth. [C]

Remove devitalised tissue in pressure ulcers when appropriate for the patient's condition and consistent with the patients goals. [C]

With the terminally ill patient their overall quality of life should be taken into account when deciding whether to debride the wound and the manner in which it should be accomplished. [C]

Surgical, enzymatic and/or autolytic debridement techniques may be used when there is no urgent clinical need for drainage or removal of devitalised tissue. [C]

If there is an urgent need for debridement, as with advancing cellulitis or sepsis, surgical debridement* should be used. Surgical debridement must be performed by a competent person. [C]

Methods of debridement include surgical, enzymatic, autolytic, larvae or a combination.

Dry eschar need not be debrided if oedema, erythema, fluctuance or drainage are not present.

Dry eschar may be removed with dressings which provide moist environment to encourage autolysis. They include hydrocolloids, hydrogels. [C]

These wounds should be assessed daily to monitor pressure ulcer complications which would require debridement. [C]

Prevent or manage pain associated with surgical debridement. [C]

* *Surgical methods range from scissors and scalpel used at the bedside by a competent nurse or surgical debridement performed by a surgeon in the operating theatre.*

WOUND CLEANSING

Cleanse wounds as necessary with tap water or with water which is suitable for drinking or with saline. [C]

Use minimal mechanical force when cleansing or irrigating the ulcer. Showering is appropriate. Irrigation can be useful for cleaning a cavity ulcer. [C]

Antiseptics should not routinely be used to clean wounds but may be considered when bacterial load needs to be controlled (after clinical assessment). Ideally antiseptics should only be used for a limited period of time until the wound is clean and surrounding inflammation reduced. [C]

DRESSINGS

Use a dressing which maintains a moist environment at the wound / dressing interface. [A]

Determine the condition of the wound and establish treatment objectives before selecting dressing – e.g., grade, wound bed, infection, level of exudate, pain, surrounding skin, position and patients preference. [C]

Dressings should be maintained in situ as long as is clinically appropriate and in line with manufacturers recommendations. Frequent removal could damage the wound bed. Dressings that harden should not be used since they may cause pressure injuries. [B]

Dressings need to be removable daily if necessary to ensure that the wound is not getting worse due to inadequate pressure relief.

If there is leakage or strike through, it causes a break in the barrier that the dressing provides to external contamination and so it should be changed. If this occurs frequently it may be appropriate to reconsider dressing choice. [C]

The use of wound protocols based on good evidence will avoid unnecessary changes of dressing. [C]

Regular observation will demonstrate the progress of healing and if there is a need to change treatment objectives. [C]

ADJUNCTIVE THERAPIES

Such therapies include Electrotherapy and low laser irradiation. However, at present, insufficient research has been completed to recommend their general use. [C]

MANAGING BACTERIAL COLONISATION AND INFECTION

Pressure ulcer colonisation and infection

Reduce the risk of infection and enhance wound healing by hand washing, wound cleansing and debridement. [A]

If purulent material or foul odour is present, more frequent cleansing and possibly debridement are required. [C]

All pressure ulcers are colonised. Therefore do not routinely take a swab. If there are clinical signs of infection present cultures may be taken. Seek advice from the pathologist / microbiologist. [C]

When there are clinical signs of infection which do not respond to treatment, radiological examination should be undertaken to exclude osteomyelitis and joint infection. [C]

Institute, where appropriate, systemic antibiotic therapy for patients with bacteraemia, sepsis, advancing cellulitis or osteomyelitis. [A]

Systemic antibiotics are not required for pressure ulcers that exhibit only clinical signs of local infection. [C]

Protect pressure ulcers from exogenous sources of contamination (e.g., faeces) [C]

Infection control

Follow body substance isolation (BSI) precautions or an equivalent system appropriate for the health care setting and the patient's condition when treating pressure ulcers. [C]

Use clean gloves for each patient. When treating multiple ulcers on the same patient, attend to the most contaminated ulcer last (e.g., in the perianal region). Remove gloves and wash hands between patients. [C]

Use sterile instruments to debride pressure ulcers. [C]

RECENT PRESSURE ULCER PUBLICATIONS

From MEDLINE data base, August 2001

THE following reference list identifies publications from 2000 that discuss, or present primary data, upon any aspect of pressure ulcers. The data base MEDLINE was searched in August 2001 using the following search terms, either individually or in combination – 'pressure ulcer', 'pressure sore' and 'decubitus ulcer'.

Alexander R. Pressure sore following low-dose epidura infusion. *Anaesthesia* 2000; 55(7): 709–10.

Anonymous. Vacuum-assisted closure for chronic wound healing. *Tecnologica MAP Supplement* 2000: 19–20.

Anonymous. [Optimal nutrition protects against decubitus ulcer]. *Krankenpflege Journal* 2000; 38(6): 218–9.

Anonymous. [Active strategies for the prevention of pressure ulcers]. *Revista de Enfermeria* 2000; 23(4): 314–8.

Anonymous. [Recommendations for the treatment of decubitus ulcers]. *Soins* 2000 (642 Suppl): 25–7.

Anonymous. Things you can do to protect your facility against lawsuits. Part I: Avoiding clinical risks. *LTC Regulatory Risk & Liability Advisor* 2000; 8(23): 1, 4–6.

Anonymous. Intensive safety effort cuts falls, ulcers, and drug errors at once-disgraced FL hospital. *Clinical Resource Management 2000*; 1(10): 148–51, 145.

Anonymous. Wound/skin/continence guide. *Provider* 2000; 26(8): 41–5.

Anonymous. Wound care program saves $142K, wins award. *Patient-Focused Care & Satisfactn* 2000; 8(2): 16–8.

Anonymous. Learning from the Codman Award winners. *Joint Commission Perspectives* 2000; 20(2): 1, 3–5.

Anonymous. NY system lowers incidence of pressure ulcers with new tool for assessing patients' risk. *Clinical Resource Management* 2000; 1(6): 85–9, 81.

Anonymous. [Progress in wound care]. *Krankenpflege Journal* 2000; 38(3): 74–6.

Anonymous. Support surfaces and specialty beds. Part 2: Aggressive pressure relief. *Rn* 2000; 63(4): 65–8.

Anonymous. Support surfaces and specialty beds. Part 1: Prevention and early intervention. *Rn* 2000; 63(3): 62, 65–6.

Anthony D, Reynolds T, Russell L. An investigation into the use of serum albumin in pressure sore prediction. *J of Advanced Nursing* 2000; 32(2): 359–65.

Anthony D, Clark M, Dallender J. An optimization of the Waterlow score using regression and artificial neural networks. *Clinical Rehabilitation* 2000; 14(1): 102–9.

Augeraud C, Guillain P. [Comparative study of 4 kinds of dressings]. *Soins* 2000 (642 Suppl): 21–4.

Ayello EA. A pressure ulcer A-S-S-E-S-S-M-E-N-T tool. *Advances in Skin & Wound Care* 2000; 13(5): 247.

Baeke JL. Hospital-acquired pressure ulcers: an epidemic. *Plastic & Reconstructive Surgery* 2000; 106(4): 945–6.

Baffy G, Strate LL, Krnsky ML. Image of the month. Adherent, yellow exudate speckled with black spots in the distal two thirds of the esophagus. Diagnosis: This distinctive endoscopic image shows an acute necrotizing esophagitis, also known as the black esophagus. *Gastroenterology* 2000; 118(2): 252, 453.

Balon C. [Aspects of the treatment of chronic wounds]. *Osterreichische Krankenpflegezeitschrift* 2000; 53(1): 26–30.

Baskov AV. [The surgical treatment of decubitus ulcers in patients with spinal cord trauma]. Zhurnal Voprosy Neirokhirurgii Imeni N - N - *Burdenko* 2000(1): 7–10.

Bello YM, Phillips TJ. Recent advances in wound healing. *Jama* 2000; 283(6): 716–8.

Bennett RG, O'Sullivan J, DeVito EM, Remsburg R. The increasing medical malpractice risk related to pressure ulcers in the United States. *J of the American Geriatrics Society* 2000; 48(1): 73–81.

Bergstrom N, Trumble TJ, Trumble ME. Pressure ulcers among home care patients: whose responsibility are they? [letter; comment]. *J of the American Geriatrics Society* 2000; 48(9): 1165–6.

Berlowitz DR, Bezerra HQ, Brandeis GH, Kader B, Anderson JJ. Are we improving the quality of nursing home care: the case of pressure ulcers. *J of the American Geriatrics Society* 2000; 48(1): 59–62.

Biering-Sorensen F, Schroder AK, Wilhelmsen M, Lomberg B, Nielsen H, Hoiby N. Bacterial contamination of bathwater from spinal cord lesioned patients with pressure ulcers exercising in the water. *Spinal Cord* 2000; 38(2): 100–5.

Black J. Preventing those other pressure ulcers. *Provider* 2000; 26(12): 24–5.

Bliss M. Pressure sores—demographic perspectives. *J of Tissue Viability* 2000; 10(3): 106, 109–15.

Bliss M. An update on horizontal support surfaces. *J of Tissue Viability* 2000; 10(1): 35–6.

Boes C. [Reliability and validity of the Braden Scale for predicting pressure sore risk]. *Pflege* 2000; 13(6): 397–402.

Bogie KM, Reger SI, Levine SP, Sahgal V. Electrical stimulation for pressure sore prevention and wound healing. *Assistive Technology* 2000; 12(1): 50–66.

Bourdel-Marchasson I. Nutritional supplementation in elderly people during the course of catabolic illnesses. *J of Nutrition, Health & Aging* 2000; 4(1): 28–30.

Bourdel-Marchasson I, Barateau M, Rondeau V, et al. A multi-center trial of the effects of oral nutritional supplementation in critically ill older inpatients. GAGE Group. Groupe Aquitain Geriatrique d'Evaluation. *Nutrition* 2000; 16(1): 1–5.

Bozzuto TM, Fife CE. Adjunctive therapies for wound healing. *Jama* 2000; 284(1): 40; discussion 41.

Brem H, Balledux J, Bloom T, Kerstein MD, Hollier L. Healing of diabetic foot ulcers and pressure ulcers with human skin equivalent: a new paradigm in wound healing. *Archives of Surgery* 2000; 135(6): 627–34.

Brienza DM, Geyer MJ. Understanding support surface technologies. *Advances in Skin & Wound Care* 2000; 13(5): 237–44.

Brown J, McElvenny D, Nixon J, Bainbridge J, Mason S. Some practical issues in the design, monitoring and analysis of a sequential randomized trial in pressure sore prevention. *Statistics in Medicine* 2000; 19(24): 3389–400.

Brown C. Building bridges to healthy skin. Treatment teams maximize healing. *Provider* 2000; 26(5): sup 4–6.

Byers PH, Carta SG, Mayrovitz HN. Pressure ulcer research issues in surgical patients. *Advances in Skin & Wound Care* 2000; 13(3 Pt 1): 115–21.

Calianno C. Assessing and preventing pressure ulcers. *Advances in Skin & Wound Care* 2000; 13(5): 244–6.

Capillas Perez R, Cabre Aguilar V, Gil Colome AM, Gaitano Garcia A, Torra i Bou JE. [Comparison of the effectiveness and cost of treatment with humid environment as compared to traditional cure. Clinical trial on primary care patients with venous leg ulcers and pressure ulcers]. *Revista de Enfermeria 2000*; 23(1): 17–24.

Cervo FA, Cruz AC, Posillico JA. Pressure ulcers. Analysis of guidelines for treatment and management. *Geriatrics* 2000; 55(3): 55–60; quiz 62.

Chaloner D, Cave J. Should weaker study designs ever be preferred over randomised controlled trials. *J of Tissue Viability* 2000; 10(3 su): 7–9.

Chaplin J. Pressure sore risk assessment in palliative care. *J of Tissue Viability* 2000; 10(1): 27–31.

Collins F. Karomed armchairs and cushions in the prevention of pressure ulcers. *Brit J of Nursing* 2000; 9(6): 361–4.

Collins KA, Bennett AT, Hanzlick R. Elder abuse and neglect. Autopsy Committee of the College of American Pathologists. *Archives of Internal Medicine* 2000; 160(11): 1567–8.

Cooper JW. Psychoactive drugs may have role in pressure sore origin. *Bmj* 2000; 321(7258): 452.

Cooper SM, Young E. Topical negative pressure. *International J of Dermatology* 2000; 39(12): 896–8.

Couinaud C. [Local and general treatment of pressure sores in the aged]. *Presse Medicale* 2000; 29(9): 484.

Cruse JM, Lewis RE, Dilioglou S, Roe DL, Wallace WF, Chen RS. Review of immune function, healing of pressure ulcers, and nutritional status in patients with spinal cord injury. *J of Spinal Cord Medicine* 2000; 23(2): 129–35.

Cruse JM, Lewis RE, Roe DL, et al. Facilitation of immune function, healing of pressure ulcers, and nutritional status in spinal cord injury patients. *Experimental & Molecular Pathology* 2000; 68(1): 38–54.

Cullum N, Deeks J, Sheldon TA, Song F, Fletcher AW. Beds, mattresses and cushions for pressure sore prevention and treatment. *Cochrane Database of Systematic Reviews* [computer file] 2000(2): CD001735.

Cunha DF, Frota RB, Arruda MS, Cunha SF, Teixeira VP. Pressure sores among malnourished necropsied adults––preliminary data. *Revista do Hospital das Clinicas; Faculdade de Medicina Da Universidade de Sao Paulo* 2000; 55(3): 79–82.

Decanini-Teran C, Belmonte-Montes C, Cabello-Pasini R. [Laparoscopically created stomas]. *Revista de Gastroenterologia de Mexico* 2000; 65(4): 163–5.

Deeth M, Hamilton K. The development of an effective tissue viability service. *Brit J of Nursing* 2000; 9(12): S10–2, S14, S16 passim.

Defloor T, De Schuijmer JD. Preventing pressure ulcers: an evaluation of four operating-table mattresses. *Applied Nursing Research* 2000; 13(3): 134–41.

Defloor T, Grypdonck MH. Do pressure relief cushions really relieve pressure? *Western J of Nursing Research* 2000; 22(3): 335–50.

Defloor T. The effect of position and mattress on interface pressure. *Applied Nursing Research* 2000; 13(1): 2–11.

Edsberg LE, Cutway R, Anain S, Natiella JR. Microstructural and mechanical characterization of human tissue at and adjacent to pressure ulcers. *J of Rehabilitation Research & Development* 2000; 37(4): 463–71.

Elgart ML. Cell phone chondrodermatitis. Archives of *Dermatology* 2000; 136(12): 1568.

Epstein NE. Anterior cervical diskectomy and fusion without plate instrumentation in 178 patients. *J of Spinal Disorders* 2000; 13(1): 1–8.

Eriksson E, Hietanen H, Asko-Seljavaara S. Prevalence and characteristics of pressure ulcers. A one-day patient population in a Finnish city. *Clinical Nurse Specialist* 2000; 14(3): 119–25.

Ferguson M, Cook A, Rimmasch H, Bender S, Voss A. Pressure ulcer management: the importance of nutrition. *MEDSURG Nursing* 2000; 9(4): 163–75; quiz 176–7.

Ferguson-Pare M, Bourret E, Bernick L, et al. Best practices in the care of elderly persons in hospital. *Hospital Quarterly* 2000; 3(4): 30–7.

Ferrarin M, Andreoni G, Pedotti A. Comparative biomechanical evaluation of different wheelchair seat

cushions. *J of Rehabilitation Research & Development* 2000; 37(3): 315–24.

Ferrarin M, Ludwig N. Analysis of thermal properties of wheelchair cushions with thermography. *Medical & Biological Engineering & Computing* 2000; 38(1): 31–4.

Ferrell BA, Josephson K, Norvid P, Alcorn H. Pressure ulcers among patients admitted to home care. *J of the American Geriatrics Society* 2000; 48(9): 1042–7.

Fischetti LF, Paguio EC, Alt-White AC. Digitized images of wounds: a nursing practice innovation. *Nursing Clinics of North America* 2000; 35(2): 541–50.

Flemming K, Cullum N. Therapeutic ultrasound for pressure sores. *Cochrane Database of Systematic Reviews* [computer file] 2000(4): CD001275.

Flohr HJ. [Application of nursing care products in decubitus prevention]. *Zentralblatt fur Chirurgie* 2000; 125(Suppl 1): 90–3.

Fontaine R. Investigating the efficacy of a nonpowered pressure-reducing therapeutic mattress: a retrospective multi-site study. *Ostomy Wound Management* 2000; 46(9): 34–43.

Galassi G, Brun P, Radice M, *et al. In vitro* reconstructed dermis implanted in human wounds: degradation studies of the HA-based supporting scaffold. *Biomaterials* 2000; 21(21): 2183–91.

Garber SL, Rintala DH, Hart KA, Fuhrer MJ. Pressure ulcer risk in spinal cord injury: predictors of ulcer status over 3 years. *Archives of Physical Medicine & Rehabilitation* 2000; 81(4): 465–71.

Garner JP, Teo TC. Rotation flaps in the treatment of ischial pressure sores—the bigger the better. *Spinal Cord* 2000; 38(9): 571–2.

Gauthier ME, Boutet S. [Physical therapy for decubitus ulcers in the elderly]. Soins. *Gerontologie* 2000(22): 29–31.

Gebhardt KS. The last mystery in physiology? *J of Tissue Viability* 2000; 10(3): 83–4.

Gebhardt KS. Tissue viability on the eve of the 21st century. *J of Tissue Viability* 2000; 10(1): 3–4.

Gilmore LR, Escobedo J, Elliot L, et al. Practical uses of peripheral intravenous nutrition. Three case studies. *Journal of Gerontological Nursing* 2000; 26(1): 41–6.

Gosain AK, Moore FO, Rabinowitz LG. Congenital pressure necrosis of the forearm in a newborn infant. *Annals of Plastic Surgery* 2000; 45(3): 318–22; discussion 322–8.

Gottwald C. [Improved management of decubitus ulcer is advantageous to the patient as well as to the economy]. *Pflege Zeitschrift* 2000; 53(7): 471–4.

Gould D, Tarpey A, Fox C. Consumer views of pressure sores: a preliminary survey. *Nursing Standard* 2000; 14(26): 49–52.

Gould D, James T, Tarpey A, Kelly D, Pattison D, Fox C. Intervention studies to reduce the prevalence and incidence of pressure sores: a literature review. *J of Clinical Nursing* 2000; 9(2): 163–77.

Graff MK, Bryant J, Beinlich N. Preventing heel breakdown. *Orthopaedic Nursing* 2000; 19(5): 63–9.

Gray D, Palk M. A clinical evaluation of the Transfoam mattress after 4 years. *Brit J of Nursing* 2000; 9(14): 939–42.

Gray D. Sharing information and clinical experiences. *Brit J of Nursing* 2000; 9(12): S3.

Gray DG, Smith M. Comparison of a new foam mattress with the standard hospital mattress. *J of Wound Care* 2000; 9(1): 29–31.

Grosskopf V. [Decubitus ulcer is always preventable]. *Pflege Zeitschrift* 2000; 53(10): 679–81.

Guenter P, Malyszek R, Bliss DZ, et al. Survey of nutritional status in newly hospitalized patients with stage III or stage IV pressure ulcers. *Advances in Skin & Wound Care* 2000; 13(4 Pt 1): 164–8.

Gunningberg L, Lindholm C, Carlsson M, Sjoden PO. The development of pressure ulcers in patients with hip fractures: inadequate nursing documentation is still a problem. *J of Advanced Nursing* 2000; 31(5): 1155–64.

Gunther RA, Clark M. The effect of a dynamic pressure-redistributing bed support surface upon systemic lymph flow and composition. *J of Tissue Viability* 2000; 10(3 su): 10–5.

Haalboom JR. A new century without pressure ulcers? *Brit J of Nursing* 2000; 9(6 Suppl): S4–6.

Haalboom JR. ['Decubitus' guideline of the Dutch College of Family Practitioners: response from internal medicine]. *Nederlands Tijdschrift voor Geneeskunde* 2000; 144(14): 645–6.

Hadcock JL. The development of a standardized approach to wound care in ICU. *Brit J of Nursing* 2000; 9(10): 614–6, 618, 620 passim.

Hahn A, Hall F. Preventing pressure sores. Good nursing care should prevent pressure sores. *Bmj* 2000; 320(7237): 801–2.

Halfens RJ. Risk assessment scales for pressure ulcers: a theoretical, methodological, and clinical perspective. *Ostomy Wound Management* 2000; 46(8): 36–40, 42–4.

Halfens RJ, Van Achterberg T, Bal RM. Validity and reliability of the braden scale and the influence of other risk factors: a multi-centre prospective study. *Int J of Nursing Studies* 2000; 37(4): 313–9.

Hampton S. Case study: the treatment or palliative care of pressure ulcers. *Brit J of Nursing* 2000; 9(6 Supl): S32–4.

Hardin JB, Cronin SN, Cahill K. Comparison of the effectiveness of two pressure-relieving surfaces: low-air-loss versus static fluid. *Ostomy Wound Management* 2000; 46(9): 50–6.

Harris MR, Graves JR, Solbrig HR, Elkin PL, Chute CG. Embedded structures and representation of nursing knowledge. *J of the American Medical Informatics Association* 2000; 7(6): 539–49.

Hauswald M, McNally T. Confusing extrication with immobilization: the inappropriate use of hard spine boards for interhospital transfers. *Air Medical Journal* 2000; 19(4): 126–7.

Healey F. Risk assessment tools in the prevention of pressure ulcers. *J of Tissue Viability* 2000; 10(1): 34–5.

Heinemann A, Lockemann U, Matschke J, Tsokos M, Puschel K. [Decubitus ulcer in the terminal phase: epidemiologic, medicolegal and ethical aspects]. *Deutsche Medizinische Wochenschrift* 2000; 125(3): 45–51.

Hess CT. Skin care basics. *Advances in Skin & Wound Care* 2000; 13(3 Pt 1): 127–8.

Hessov I. Can nutritional intervention reduce the incidence of pressure sores? *Nutrition* 2000; 16(2): 141.

Heusser K. Building bridges to healthy skin. Optimizing mobility promotes healthy skin. *Provider* 2000; 26(5): suppl 7, 10.

Heymans O, Dandrifosse AC, Gielen JL, Vanzele D, Fissette J. [How I treat...decubitus ulcers surgically]. *Revue Medicale de Liege* 2000; 55(7): 700–4.

Hirshberg J, Rees RS, Marchant B, Dean S. Osteomyelitis related to pressure ulcers: the cost of neglect. *Advances in Skin & Wound Care* 2000; 13(1): 25–9.

Hoogvliet G. ['Decubitus' guideline of the Dutch College of Family Practice; response from family practice]. *Nederlands Tijdschrift voor Geneeskunde* 2000; 144(14): 644–5.

Hopkins B, Hanlon M, Yauk S, Sykes S, Rose T, Cleary A. Reducing nosocomial pressure ulcers in an acute care facility. *J of Nursing Care Quality* 2000; 14(3): 28–36.

Houghton PE, Kincaid CB, Campbell KE, Woodbury MG, Keast DH. Photographic assessment of the appearance of chronic pressure and leg ulcers. *Ostomy Wound Management* 2000; 46(4): 20–6, 28–30.

Houwing R, Overgoor M, Kon M, Jansen G, van Asbeck BS, Haalboom JR. Pressure-induced skin lesions in pigs: reperfusion injury and the effects of vitamin E. *J of Wound Care* 2000; 9(1): 36–40.

Hsu YC, Chang HH, Chen MF, Chen JC. Therapeutic effect of sheng-ji-san on pressure ulcers. *American J of Chinese Medicine* 2000; 28(3–4): 391–9.

Hung SJ, Chen HC, Wei FC. Free flaps for reconstruction of the lower back and sacral area. *Microsurgery* 2000; 20(2): 72–6.

Isenberg JS. The reversal sural artery neurocutaneous island flap in composite lower extremity wound reconstruction. *J of Foot & Ankle Surgery* 2000; 39(1): 44–8.

Jars-Guincestre MC, Dizien O, Tardy J, Tesoriere MF. [Nurses and risk management. Managing the risks of decubitus ulcers in hospitalized patients. Group Escarre]. *Soins* 2000(642): 44–6.

Jaul E. [Principles of treatment of pressure sores in the elderly]. *Harefuah* 2000; 138(11): 971–5.

Johnson MF, Kramer AM, Lin MK, Kowalsky JC, Steiner JF. Outcomes of older persons receiving rehabilitation for medical and surgical conditions compared with hip fracture and stroke. *J of the American Geriatrics Society* 2000; 48(11): 1389–97.

Junkin J. Promoting healthy skin in various settings. *Nursing Clinics of North America* 2000; 35(2): 339–48.

Kallianinen LK, Hirshberg J, Marchant B, Rees RS. Role of platelet-derived growth factor as an adjunct to surgery in the management of pressure ulcers. *Plastic & Reconstructive Surgery* 2000; 106(6): 1243–8.

Kamei T, Nagura S, Toriumi Y, Kumano H, Kondoh T, Tomioka H. Effect of half the standard dose of Maobushi-saishin-to in two MRSA patients and one decubitus ulcer patient. *American J of Chinese Medicine* 2000; 28(2): 301–4.

Kammerlander G. [Standards for local therapy of skin lesions]. *Osterreichische Krankenpflegezeitschrift* 2000; 53(2): 18–22.

Kihiczak D, Colletti PM, Terk MR. MRI of destructive achilles tendon rupture associated with skin ulceration. *J of Computer Assisted Tomography* 2000; 24(6): 900–2.

Kitahara M, Ishikawa S, Kanno S, Katsumata R, Yaguchi A. [Complications in home treatment of patients with severe disturbances of consciousness]. *Gan to Kagaku Ryoho* [*Japanese Journal of Cancer & Chemotherapy*] 2000; 27(Suppl 3): 641–3.

Kloth LC, Berman JE, Dumit-Minkel S, Sutton CH, Papanek PE, Wurzel J. Effects of a normothermic dressing on pressure ulcer healing. *Advances in Skin & Wound Care* 2000; 13(2): 69–74.

Kohn S, Kohn D, Schiller D. Effect of zinc supplementation on epidermal Langerhans' cells of elderly patients with decubital ulcers. *J of Dermatology* 2000; 27(4): 258–63.

Kolnaar BG, Chel VG. [Summary of 'Decubitus' guideline of the Dutch College of Family Practitioners]. *Nederlands Tijdschrift voor Geneeskunde* 2000; 144(14): 646–9.

Kramer JD, Kearney M. Patient, wound, and treatment characteristics associated with healing in pressure ulcers. *Advances in Skin & Wound Care* 2000; 13(1): 17–24.

Kuhn MA, Smith PD, Hill DP, *et al. In vitro* fibroblast populated collagen lattices are not good models of *in vivo* clinical wound healing. *Wound Repair Regeneration* 2000; 8(4): 270–6.

Land L, Evans D, Geary A, Taylor C. A clinical evaluation of an alternating-pressure mattress replacement system in hospital and residential care settings. *J of Tissue Viability* 2000; 10(1): 6–11.

Langemo DK, Melland H, Hanson D, Olson B, Hunter S. The lived experience of having a pressure ulcer: a qualitative analysis. *Advances in Skin & Wound Care* 2000; 13(5): 225–35.

Langkamp-Henken B, Herrlinger-Garcia KA, Stechmiller JK, Nickerson-Troy JA, Lewis B, Moffatt L. Arginine supplementation is well tolerated but does not enhance mitogen-induced lymphocyte proliferation in elderly nursing home residents with pressure ulcers. *Jpen: J of Parenteral & Enteral Nutrition* 2000; 24(5): 280–7.

Leif B, Robinson GE. Building bridges to healthy skin. Nutritional interventions support healing. *Provider* 2000; 26(5):suppl 11–2, 16.

Lepisto M, Eriksson E, Hietanen H, Asko-Seljavaara S. Prevention of pressure ulcers in acute and long-term care facilities in Finland: results of a survey. *Ostomy Wound Management* 2000; 46(6): 30–4, 36–8, 40–1.

Lewicki LJ, Mion LC, Secic M. Sensitivity and specificity of the Braden Scale in the cardiac surgical population. *J of Wocn* 2000; 27(1): 36–41.

Lowthian P. The limits of pressure sore prevention. *J of the Royal Society of Medicine* 2000; 93(2): 107.

Lusky K. Ka-ching! Are wound care costs clouding clinical judgment? *Contemporary Long-Term Care* 2000; 23(2): 31–2, 34, 37.

Lyder CH. Building bridges to healthy skin. Mapping out prevention strategies. *Provider* 2000; 26(5): suppl 2–3, 16.

Manus JM. [Scars: prevention is better than treatment]. *Revue de l Infirmiere* 2000(61): 29–30.

Marco Martinez MP, Abad Diez JM. [Domiciliary nursing care in a special emergency service: characteristics of the population attended]. *Atencion Primaria* 2000; 25(4): 248–52.

Marcus JR, Aitken ME, Lewis VL. Hip joint exposure during ischial pressure sore reconstruction. *J of Spinal Cord Medicine* 2000; 23(2): 86–9.

Matsuyama N, Takano K, Miura A, Yamamoto T, Mashiko T, Ohotani H. The effect of anti-platelet aggregation to prevent pressure ulcer development: a retrospective study of 132 elderly patients. *Gerontology* 2000; 46(6): 311–7.

Maylor ME. Investigating the value of pressure sore prevention. *Brit J of Nursing* 2000; 9(12): S50–1.

Maynaud B. [Decubitus ulcers and the nurses' role]. *Soins* 2000 (642 Suppl): 17–20.

Meaume S, Hamon-Mekki F, Teot L. [Wounds and bedsores 2000]. *Soins* 2000 (642 Suppl): 1.

Meehan M. Beyond the pressure ulcer blame game: reflections for the future. *Ostomy Wound Management* 2000; 46(5): 46–52.

Miyajima Y, Maehata Y, Matsuda H, et al. [Hemodynamics of the lower extremities in patients with decubitus ulcers using the ultrasonic Doppler method]. *Nippon Ronen Igakkai Zasshi - Japanese Journal of Geriatrics* 2000; 37(8): 633–8.

Mizuno J, Sugimoto S. [Anesthetic management of a patient with chronic high spinal cord injury (second report)]. *Masui – Japanese Journal of Anesthesiology* 2000; 49(7): 771–3.

Mukamel DB, Spector WD. Nursing home costs and risk-adjusted outcome measures of quality. *Medical Care* 2000; 38(1): 78–89.

Mylotte JM, Kahler L, Graham R, Young L, Goodnough S. Prospective surveillance for antibiotic-resistant organisms in patients with spinal cord injury admitted to an acute rehabilitation unit. *American J of Infection Control* 2000; 28(4): 291–7.

Neander KD. [Current aspects of the therapy of chronic wounds]. *Zentralblatt fur Chirurgie* 2000; 125(Suppl 1): 94–9.

Newton H, Mitchell MD. Pressure ulcers during labour: the effect of epidural analgesia. *Anaesthesia* 2000; 55(11): 1140–1.

Newton H, Butcher M. Investigating the risk of pressure damage during childbirth. *Brit J of Nursing* 2000; 9(6 Suppl): S20–2, S24, S26.

Nixon J, Brown J, McElvenny D, Mason S, Bond S. Prognostic factors associated with pressure sore development in the immediate post-operative period. *Int J of Nursing Studies* 2000; 37(4): 279–89.

Noon JA. Building bridges to healthy skin. Stepping up liability prevention practices. *Provider* 2000; 26(5): suppl 13–5.

Noreau L, Proulx P, Gagnon L, Drolet M, Laramee MT. Secondary impairments after spinal cord injury: a population-based study. *American J of Physical Medicine & Rehabilitation* 2000; 79(6): 526–35.

Offori EM, Popham P. Decubitus ulcers after instituting epidural analgesia for pain relief in labour. *Anaesthesia* 2000; 55(2): 194.

Park S. Muscle-splitting approach to superior and inferior gluteal vessels: versatile source of recipient vessels for free-tissue transfer to sacral, gluteal, and ischial regions. *Plastic & Reconstructive Surgery* 2000; 106(1): 81–6.

Patten J. A case study in evidence-based wound management. *Brit J of Nursing* 2000; 9(12): S38–40, S42, S44 passim.

Pearson A, Francis K, Hodgkinson B, Curry G. Prevalence and treatment of pressure ulcers in northern New South Wales. *Australian J of Rural Health* 2000; 8(2): 103–10.

Peirce SM, Skalak TC, Rodeheaver GT. Ischemia-reperfusion injury in chronic pressure ulcer formation: a skin model in the rat. *Wound Repair Regeneration* 2000; 8(1): 68–76.

Pelnik J, DiPentima C. Educate your way to PPS success: one agency makes the grade with its wound care program. *Caring* 2000; 19(10): 8–12.

Phillips L. Cost-effective strategy for managing pressure ulcers in critical care: a prospective, non-randomised, cohort study. *J of Tissue Viability* 2000; 10(3 su): 2–6.

Pompeo M, Baxter C. Sacral and ischial pressure ulcers: evaluation, treatment, and differentiation. *Ostomy Wound Management* 2000; 46(1): 18–23.

Quaglini S, Grandi M, Baiardi P, et al. A computerized guideline for pressure ulcer prevention. *Int J of Medical Informatics* 2000; 58–59: 207–17.

Ramon Canton C, Salvador Guadayol C, Torra i Bou JE. [Pressure sores: evaluation of the systematic use of special surfaces for managing pressure sores in the intensive care unit of the Tarrasa Hospital, Spain]. *Enfermeria Intensiva* 2000; 11(3): 118–26.

Ranasinghe DN. Skin damage related to regional anaesthesia. *Anaesthesia* 2000; 55(9): 935.

Richardson JD. Diagnosis and management of systemic infections and fever in neurological patients. *Seminars in Neurology* 2000; 20(3): 387–91.

Rimareix F, Lortat-Jacob A. [Comparative study of 2 surgical techniques in the treatment of ischial pressure ulcers in paraplegic patients. Retrospective study of 90 cases]. *Annales de Chirurgie Plastique et Esthetique* 2000; 45(6): 589–96.

Rithalia SV, Gonsalkorale M. Quantification of pressure relief using interface pressure and tissue perfusion in

alternating pressure air mattresses. *Archives of Physical Medicine & Rehabilitation* 2000; 81(10): 1364–9.

Rithalia SV, Heath GH, Gonsalkorale M. Assessment of alternating-pressure air mattresses using a time-based pressure threshold technique and continuous measurements of transcutaneous gases. *J of Tissue Viability* 2000; 10(1): 13–20.

Roales-Welsch S, Antaszek M, Hense W, Pfeiffer M, Freyenhagen E, Engel P. [Study on quality assurance in the prevention and therapy of decubitus ulcer by measuring the overlay pressure with test subjects on different prophylaxis systems]. *Pflege* 2000; 13(5): 297–305.

Robinson BJ. The use of a hydrofibre dressing in wound management. *J of Wound Care* 2000; 9(1): 32–4.

Robson MC, Hill DP, Smith PD, et al. Sequential cytokine therapy for pressure ulcers: clinical and mechanistic response. *Annals of Surgery* 2000; 231(4): 600–11.

Rodriguez Palma M, Malia Gazquez R, Barba Chacon A. [Immobilization and localization of pressure ulcers in aged patients under home care]. *Revista de Enfermeria* 2000; 23(7–8): 515–8.

Roedel R, Severson R. Documentation hot spots. Capture the right information and boost reimbursement. *Contemporary Long-Term Care* 2000; 23(2): 23.

Russell L, Reynolds T, Clark M. More research is needed into the origins of pressure sores. *Bmj* 2000; 320(7237): 802.

Russell L. Malnutrition and pressure ulcers: nutritional assessment tools. *Brit J of Nursing* 2000; 9(4): 194–6, 198, 200 passim.

Russell JA, Lichtenstein SL. Randomized controlled trial to determine the safety and efficacy of a multi-cell pulsating dynamic mattress system in the prevention of pressure ulcers in patients undergoing cardiovascular surgery. *Ostomy Wound Management* 2000; 46(2): 46–51, 54–5.

Ryden MB, Snyder M, Gross CR, et al. Value-added outcomes: the use of advanced practice nurses in long-term care facilities. *Gerontologist* 2000; 40(6): 654–62.

Schemann J. [First consensus-conference in nursing: standards in the prevention of decubitus ulcers]. *Pflege Zeitschrift* 2000; 53(5): 303.

Schryvers OI, Stranc MF, Nance PW. Surgical treatment of pressure ulcers: 20–year experience. *Archives of Physical Medicine & Rehabilitation* 2000; 81(12): 1556–62.

Schubert V. The influence of local heating on skin microcirculation in pressure ulcers, monitored by a combined laser Doppler and transcutaneous oxygen tension probe. *Clinical Physiology* 2000; 20(6): 413–21.

Scott EM. The prevention of pressure ulcers in the operating department. *J of Wound Care* 2000; 9(1): 18–21.

Seaman S, Herbster S, Muglia J, Murray M, Rick C. Simplifying modern wound management for nonprofessional caregivers. *Ostomy Wound Management* 2000; 46(8): 18–27.

Seiler WO. [Guidelines to efficient decubitus prophylaxis]. *Krankenpflege Journal* 2000; 38(6): 213–8.

Seki M, Takahashi H, Chino N. [Treatment of pressure sores accompanied by infection in outpatients with spinal cord injury]. *Gan to Kagaku Ryoho* [Japanese Journal of Cancer & Chemotherapy] 2000; 27(Suppl 3): 756–9.

Senet P, Meaume S. [Decubitus ulcer. Etiology, physiopathology, prevention]. *Revue du Praticien* 2000; 50(17): 1965–9.

Shah JL. Lesson of the week: postoperative pressure sores after epidural anaesthesia. *Bmj* 2000; 321(7266): 941–2.

Sharp C, Burr G, Broadbent M, Cummins M, Casey H, Merriman A. Pressure ulcer prevention and care: a survey of current practice. *J of Quality in Clinical Practice* 2000; 20(4): 150–7.

Sheffet A, Cytryn AS, Louria DB. Applying electric and electromagnetic energy as adjuvant treatment for pressure ulcers: a critical review. *Ostomy Wound Management* 2000; 46(2): 28–33, 36–40, 42–4.

Shigeyama M, Ohgaya T, Kawashima Y, Takeuchi H, Hino T. Modification of the physicochemical properties of minocycline hydrochloride ointment with cyclodextrines for optimum treatment of bedsore. *Chemical & Pharmaceutical Bulletin* 2000; 48(5): 617–22.

Shipperley T. Guidelines for pressure ulcer prevention and management. *Nursing Times* 2000; 96 (14 Suppl): 11–2.

Simmons DJ, Wharton SM. An unusual application of a tissue expander. *Brit J of Plastic Surgery* 2000; 53(2): 175.

Smoot EC. Beware of the low-pressure bed substitute. *Plastic & Reconstructive Surgery* 2000; 105(5): 1908.

Stalam M, Kaye D. Antibiotic agents in the elderly. *Infectious Disease Clinics of North America* 2000; 14(2): 357–69.

Stockton L. Guide to choosing the right pressure-reducing cushion. *Community Nurse* 2000; 6(2): 33–4.

Sundin BM, Hussein MA, Glasofer S, et al. The role of allopurinol and deferoxamine in preventing pressure ulcers in pigs. *Plastic & Reconstructive Surgery* 2000; 105(4): 1408–21.

Swartz C. Resuscitation considerations to prevent pressure ulcers in trauma patients. *Int J of Trauma Nursing* 2000; 6(1): 16–8.

Symes L. Pressure ulcers add to morbidity and human misery. *American J of Critical Care* 2000; 9(4): 296–7.

Talley M. University of California Medical Center skin integrity process improvement team. *QRC Advisor* 2000; 16(12): 8–11.

Tanguay T, Eichorst C. The Braden Scale: is your patient at risk for pressure ulcers? *Alberta RN* 2000; 56(3): 24–5.

Tarpey A, Gould D, Fox C, Davies P, Cocking M. Evaluating support surfaces for patients in transit through the accident and emergency department. *J of Clinical Nursing* 2000; 9(2): 189–98.

Tay BH, Masbah O, Razak M, Ruslan GN. Total hip arthroplasty in Malaysia—the University Kebangsaan Malaysia and Hospital Kuala Lumpur experience. *Medical Journal of Malaysia* 2000; 55(Suppl C): 74–85.

Teasell RW, Arnold JM, Krassioukov A, Delaney GA. Cardiovascular consequences of loss of supraspinal

control of the sympathetic nervous system after spinal cord injury. *Archives of Physical Medicine & Rehabilitation* 2000; 81(4): 506–16.

Teot L. [The "surgical moment" in the care of chronic wounds]. *Soins* 2000 (642 Suppl): 9–11.

Theaker C, Mannan M, Ives N, Soni N. Risk factors for pressure sores in the critically ill. *Anaesthesia* 2000; 55(3): 221–4.

Thomas DR, Kamel HK. Wound management in postacute care. *Clinics in Geriatric Medicine* 2000; 16(4): 783–804.

Torra i Bou JE, Rueda Lopez J, Ramon Canton C. [Experimental study. Reduction of pressure in areas of risk of developing pressure ulcers with a hydrocellular dressing]. *Revista de Enfermeria* 2000; 23(3): 211–8.

Torra i Bou JE, Soldevilla Agreda JJ. The improvement of wound care provision in Spain. *Brit J of Nursing* 2000; 9(12): S4–6.

Townley SA. An unusual epidural-related pressure sore. *Anaesthesia* 2000; 55(2): 193–4.

Tsokos M, Heinemann A, Puschel K. Pressure sores: epidemiology, medico–legal implications and forensic argumentation concerning causality. *Int J of Legal Medicine* 2000; 113(5): 283–7.

Vaidyanathan S, Singh G, Soni BM, et al. Silent hydronephrosis/pyonephrosis due to upper urinary tract calculi in spinal cord injury patients. *Spinal Cord* 2000; 38(11): 661–8.

van Marum RJ, Ooms ME, Ribbe MW, van Eijk JT. The Dutch pressure sore assessment score or the Norton scale for identifying at-risk nursing home patients? *Age & Ageing* 2000;29(1):63–8.

van Rijswijk L. Only 10 years to go! *Ostomy Wound Management* 2000; 46(8): 4.

van Rijswijk L, Gottlieb D. Like a terrorist. *Ostomy Wound Management* 2000; 46(5): 25-6.

Vap PW, Dunaye T. Pressure ulcer risk assessment in long-term care nursing. *J of Gerontological Nursing* 2000; 26(6): 37–45.

Vogt PM, Drucke D, Muhlberger T, Homann HH, Steinau HU. [Clinical application of growth factors and cytokines in wound healing]. *Zentralblatt fur Chirurgie* 2000; 125(Suppl 1): 65–8.

Wall J. Preventing pressure sores among wheelchair users. *Professional Nurse* 2000; 15(5): 321–4.

Wang J, Brienza DM, Yuan Y, Karg P, Xue Q. A compound sensor for biomechanical analyses of buttock soft tissue in vivo. *J of Rehabilitation Research & Development* 2000; 37(4): 433–43.

Werner H, Kuntsche J. [Infection in the elderly—what is different?]. *Zeitschrift fur Gerontologie und Geriatrie* 2000; 33(5): 350–6.

Whittington K, Patrick M, Roberts JL. A national study of pressure ulcer prevalence and incidence in acute care hospitals. *Journal of Wocn* 2000; 27(4): 209–15.

Williams DF, Stotts NA, Nelson K. Patients with existing pressure ulcers admitted to acute care. *Journal of Wocn* 2000; 27(4): 216–26.

Williams C. 3M Tegasorb Thin: a hydrocolloid dressing for chronic wounds. *Brit J of Nursing* 2000; 9(11): 720–3.

Williams C. An alternative sectional bedding system: the Nightingale Smart Bed. *Brit J of Nursing* 2000; 9(10): 656–9.

Willock J, Hughes J, Tickle S, Rossiter G, Johnson C, Pye H. Pressure sores in children—the acute hospital perspective. *J of Tissue Viability* 2000; 10(2): 59–62.

Witkowski JA, Parish LC. The decubitus ulcer: skin failure and destructive behavior. *Int J of Dermatology* 2000; 39(12): 894–6.

Wolsley CJ, Hill PD. Review of interface pressure measurement to establish a protocol for their use in the assessment of patient support surfaces. *J of Tissue Viability* 2000; 10(2): 53–7.

Young T. Critical appraisal of pressure ulcer guidelines. *Community Nurse* 2000; 5(12): 29–30.

Zulkowski K, Kindsfater D. Examination of care-planning needs for elderly newly admitted to an acute care setting. *Ostomy Wound Management* 2000; 46(1): 32–8.

EUROPEAN PRESSURE ULCER ADVISORY PANEL

News from the NHS Ombudsman

EDUCATION – SHARING OUR EXPERIENCES

Can complaints change culture?

Hilary Scott, Deputy Health Services Ombudsman

UNDERSTANDING the science, economics and therapeutics of pressure ulcer management is central to the programme for the Fifth Open Meeting, but implicit throughout is – ***what needs to be done*** to bring relief to those suffering from or at risk of pressure ulcers? I think that, by sharing my experience, I can make some contribution to the 'what needs to be done' question.

For the past two years, as Deputy Health Service Ombudsman, my job has been only to do with investigating complaints about the National Health Service, services provided by hospitals and family practitioners and ambulance services in England, Scotland and Wales. My colleagues have considered almost 6000 letters from people who are dissatisfied enough with their care to come to the Ombudsman's office. We have issued close to 400 formal reports of investigation in those two years, and resolved matters less formally in more than 200 other cases. For reasons referred to below, this can say nothing about the 'state of the NHS' as a result of that work – the sample is small and rather eccentric. But I can make some observations about the way NHS organisations deal with the complaints that we see, and what *that* may say about they way they go about dealing with shortcomings in services.

Before going trying to answer the question: Can complaints change culture? – what is the role and work of the Ombudsman?

The British Health Service Ombudsman is a special mandate Ombudsman, investigating complaints about the single institution within his jurisdiction – the NHS in England, Scotland and Wales. This sets him apart from his other European counterparts: Ombudsmen here – the *Médiateur*, *Defensores Civicos* have jurisdictions that cover several institutions. Another factor distinguishes the Health Service Ombudsman. Before 1996 his investigations were confined to matters of mal-administration in the NHS; a change in legislation then means that we now have five years experience of investigating complaints about clinical care.

The Ombudsman's Office is independent of the National Health Service, and of the government. The Ombudsman is appointed by the Queen on the recommendation of the Prime Minister, and reports to Parliament through a committee of the House of Commons. The office acts as a 'last port of call' for people who have a complaint and intervenes, generally, only when the NHS's own complaints procedure has been exhausted. The 'intervention' may be in the form of an investigation which leads to a report that will uphold, or not, the complaint and make recommendations for change as necessary and appropriate. The office has no power to require compliance with recommendations, but it is very uncommon indeed for a practitioner to refuse accept the Ombudsman's findings and recommendations.

About 3000 people each year contact the Ombudsman's office each year. More than half of them bring complaints that are without our jurisdiction (for example, to do with private health care, or an employment or legal matter) or come to us before they have approached the NHS locally. Of the others, a proportion of the matters complained about, presently about 25%, are investigated, and in some depth. We tend not to investigate if we think that as much as possible has been done locally to resolve the complaint.

Inevitably, many of the complaints that come to us bear evidence of poor practice, both in terms of clinical care and the way they were handled locally. But many illustrate, in fact, good practice – and particularly where a complaint has been taken seriously, investigated thoroughly and acted upon appropriately. It is important, at this point, to put the work that we do in perspective. There were 10.1m consultant episodes in acute hospital services in 1999–2000; there were 135,000 written complaints about all health services in the same year and slightly fewer than 3000 people coming to us. This is why we can say nothing about the 'state of the NHS'. That said, themes do emerge from our investigations – we have written at length about poor clinical record keeping; poor communication between professionals and with patients and carers; about inadequate support for and supervision of doctors in training and other junior clinical staff; about failures to manage care effectively, when resources are stretched; and failures to provide essential nursing care.

We do not, on the other hand, publish other types of themes that also emerge from our investigations in the same way. I think that if my 80-plus colleagues were asked: can you tell what distinguishes an NHS organisation that deals with a complaint well, from one that does not; one that has identified and made changes as a result of investigating a complaint, from one that has to be 'encouraged' to do so by us; they would say 'yes', and – more – probably that it's something to do with the 'culture' of that organisation.

What might they mean about 'culture'? They might say something about

- whether the original complaint was investigated thoroughly or not,
- whether explanations were given in terms that could be understood,

- whether the word 'sorry' only ever slipped out between gritted teeth,
- whether senior staff had an obvious interest or a hand in responding to the complaint,
- whether the staff they interviewed in the course of one of our investigations were defensive, or frightened, or guilt-ridden – or some of all three,
- whether effective action was taken as a result of the complaint.

I think it could be summarised as evidence of **what is believed to be important in the organisation** – i.e., what gets rewarded and what is punished; and **the way people deal with patients, each other and those outside** the organisation. And that does no justice at all to the massive literature on organisational cultures.

When 'culture' is thought of like that, a first response to the question – can complaints change culture – might be, no. A second response might come from your own experience of changing practice as a result of a complaint and lead you to qualify that and say no, not on their own. A third response is yes, if …

I want to suggest that there are some conditions that might lead complaints and complaint handling to have a recognisable impact on culture – the way organisations, professions and individuals 'do' things.

If you ask 'How are we doing?' in the first place and treat complaints as authentic and hard won responses to that question. Most people do not complain – partly because they don't want to be nasty to nice doctors and nurses, but often they think they'll be horrible to them to the point of doing harm and because they won't do anything different even if they do complain. And there's evidence to show that they are right on both counts, although the cases of real harm are rare. Asking the question and dealing with the responses honestly sets complaints in a reasonable and not a fearful context – 'we asked because we want to do something, if we can, about things you do not like, find unhelpful, or frightening. And we know that you may not mention it yourself'.

If speedy and open responses are made to complaints. If senior staff (most people both have senior colleagues and are senior to others) require and congratulate quick and open responses, it reinforces, or even sets, standards for communications in general. A recent complaint set out a sad picture – a doctor who did not speak in any detail with the patient or her husband, or with the nursing staff looking after her; nursing staff who made assumptions about the patient's prognosis in the absence of explicit discussion with the doctor or husband; and, as a result, a man who was totally unprepared for – and thus suspicious about – his wife's death the next day. The original response to the complaint? 'She was obviously ill and it would have happened whatever we did.' I hope that, next time, hospital managers will not make such a response. Apart from being unhelpful, it just reinforced the notion that inadequate communication between colleagues, and with patients and carers was, in some way, acceptable.

Dealing with complaints well can have a positive impact on culture **if staff are supported in a way that helps them respond** to complaints in a positive way. No-one is under any misapprehension about the way it feels when the copy of a letter of complaint lands in the ward or department office. Clinicians are their professional practice and criticism from patients wounds (almost as much a self criticism). But things can be done that can help it from becoming a bad experience. Some are very simple –tell the practitioner about the complaint, ask them to comment, and tell them about the outcome. Failing to do these basic things is not very common now, but it can happen. Others things, which can make it a productive experience for practitioners, patients and organisations, take more time and planning. For example:

1. Helping people spot the things that lead to complaints – there are many and common triggers for complaints – and either intervene early or take corrective action immediately.
2. Making the time to consider and respond to a complaint comprehensively – perhaps through an internal case discussion of all concerned rather than several bilateral exchanges of correspondence between clinicians and a complaints manager.
3. A determination to make the outcome of investigations count – from the personal – I am never going to postpone doing a Waterlow assessment again; I am always going to read the lab results before I see the patient; to the organisational – if I can't staff the extra beds, I'm not going to open them. Three real commitments to recent recommendations in our reports.

The final condition is also to do with making the outcome of investigations count – **if action on a complaint includes co-ordinated effort** to make a reoccurrence of the problem complained about less likely. The product could be a change in procedures or guidance, new education or induction programmes. The responses to our recommendations provide wide ranging examples – from introducing a nutrition policy for elders wards, to a new protocol for responding to ketoacidosis, to a complete change in management arrangements for a key service. None of these are straightforward matters, but an organisation that has a mechanism for acting on complaints – a key feature of its clinical governance arrangements – is also saying something about the importance it attaches to patients' experience of the service, and their safety; about its expectations of its staff and of those also involved in supporting them, including professional and educational organisations.

A phrase often used when people are talking about dealing with complaints – 'learning lessons' – is missing so far. Although almost all the foregoing has been about learning from the experience of dealing with complaints, and making personal and organisational changes, the phrase 'learning the lessons' is one I try to avoid. Failure to 'learn the lessons' is a frequently heard criticism of health services – whether that is failure to act on the recommendations of several public enquiries, or to change clinical practice – for example hand washing. I try to avoid the phrase because it evokes in me a feeling of personal incompetence and hopelessness in the face of enormity, and I imagine it does for others too.

A more productive question, and a more interesting one in my view than 'why have you failed to learn the lessons?' is 'why are some lessons so difficult to learn?' Of course, it may come to the same thing, but the first invites defence

(e.g., too little time and too few resources), while the second might invite inquiry.

There is only time to propose three things that seem to me to make some lessons hard to learn – by which, incidentally, I think we usually mean 'fix things'.

The first is to do with complexity. Very few 'lessons' are to do with the practice of an individual, or a single source for a type of mistake that can be eliminated. Addressing errors of connection and disconnection (e.g., enteral feed to a central line) is not so much a simple design issue as a matter of international commercial interests. I think I can illustrate another sort of complexity from our recent experience. It is only recently that three things have come together which means that we can play a credible part in discussions about improving practice in pressure area care and wound management. First, our office reviewed its criteria for investigating a complaint and, as a result, looks more often than it had in the past at the quality of nursing care. Second, the Department of Health in England published 'Essence of Care' which established nursing care benchmarks in a number of areas – including nutrition, hydration and pressure area care. Third, we had a cluster of cases which illustrated the result of inadequate assessment, care and monitoring patients at risk of pressure ulcers. These developments arose separately, and from different sources, on the face of it. I think that they have contributed to the slightly higher political profile fro pressure ulcer management, and, locally, my colleagues are able to make better and more relevant recommendations as part of our reports. Why has it happened now? Was it chance that three developments were linked together by people focused on improving care, who happened to come into contact with each other at the right moment? Or are there people who are always watching for the sorts of connections that can advance an important issue and promote improvements in care?

The fact is that clinical care, clinicians, patients – life – are complex, so there often has to be a complex (not complicated) response when something goes wrong, which can be daunting – and people shy away.

The second is that some lessons are too big to 'learn' easily. For example, writing decent clinical notes, an essential part of effective clinical practice. Poor record keeping is a feature of almost every case we investigate. If people are taught that they are personally responsible for the care of an individual (and their personal right to practice will be removed if they make a serious mistake), we cannot be too surprised if they make notes in the form of a personal aide memoire. If we taught people that they were one of a team providing care we might more often see notes written for the *purpose of communication* – but we (i.e., society) may have to forego the 'pleasure' of insisting that an individual bears the consequences if something goes wrong.

The third is to do with leadership. The literature on error in medicine and other industries refers often to the emergence of leaders who invest energy in eliminating sources of error, or to the absence of leadership, which contributes to continued problems. The latter may be a simple matter of '… there was no head of service for the nine months between the departure of the former manager and her successor taking up post'.

There are other possibilities, of course – perhaps finding a different focus for discussion. If 'eternal vigilance' for problems featured in undergraduate, postgraduate and continuing programmes of education; if errors were talked of as the *consequences* of problems, rather than the *cause* of them; if variability was talked of as an asset, rather than a cause for concern – would people not think about problems in health care differently, and about how best to 'learn lessons'?

Experience and common sense tells us that a single complaint can have the effect of a short sharp shock to the system, and evoke both an immediate and sustained response. A series of similar complaints, and not necessarily about the same service, can lead people to look for the source of the problem, and go on to think about why some problems are hard to resolve – that some lessons are hard to learn; and what it is that makes individual and organisational behaviour change. But a system for dealing with complaints that is detached from other care management and improvement systems –audit, education, performance review – will provide none of these benefits for practitioners and patients. I believe it is clinical governance arrangements in the NHS that have had the strongest impact on 'the way we do things around here' – when they connect research and education to appraisal and supervision, and serious incident reports and complaints to performance review and audit. NHS organisations have been working to make those connections, and so shift their cultures, for the past two and more years. The government bodies working in similar fields to the Ombudsman's office – the Commission for Health Improvement, the National Institute for Clinical Excellence, the National Patient Safety Agency and others, are working to make the same connections at national level. Will we, collectively, get it right? Feel free to check our website (www.Ombudsman.org.uk) for details of our investigations and their impact, for evidence both of trying to do so and, I hope, succeeding.

September 2001

EUROPEAN PRESSURE ULCER ADVISORY PANEL

EPUAP Abstracts

ABSTRACTS FROM THE FIFTH EPUAP OPEN MEETING

Le Mans, France, 2001

PATHOLOGY AND AETIOLOGY OF EARLY STAGE PRESSURE ULCERS – IS IDENTIFICATION OF NON-BLANCHING HYPERAEMIA THE KEY TO ACCURATE RISK ASSESSMENT?

Nixon, J.
Centre for Evidence Based Health Care, University of Huddersfield

In the literature concerning the prevention and management of pressure sores, baseline assessment is commonly associated with the term 'risk assessment' and there has been a focus toward the development and use of risk assessment scales to facilitate the identification of 'at risk' patients. Whilst limited in construction methods and validity, they may provide a framework and appropriate prompts for assessment of pressure sore risk but their use as a single instrument to assess risk is not supported by current evidence.

Furthermore, recent research which identifies key prognostic factors using multivariate methods identifies non-blanching erythema as an independent predictor of pressure sore development and a key prognostic factor and provides increasing evidence that skin assessment should play a central role in the risk assessment process.

This presentation will provide an overview of the pathology and aetiology of pressure sore development, with an emphasis upon early pressure sores and risk factors identified by studies using multivariate statistical analyses. It will also discuss the evidence base associated with the predictive nature of blanching and non-blanching erythema and the implications of recent research in relation to:

a) the classification and definition of pressure sores,
b) the role of skin assessment in determination of risk,
c) practical issues in current clinical assessment techniques.

References

Nixon, J. (2001) Predicting and preventing pressure sores in surgical patients Unpub PhD Thesis, University of Newcastle

Nixon, J. (2001) The pathophysiology and aetiology of pressure ulcers In Morison, M.J. (Ed.) *The Prevention and Treatment of Pressure Ulcers*, Mosby, Edinburgh. pp. 17–36.

Nixon, J. and McGough, A. (2001) Principles of patient assessment: screening for pressure ulcers and potential risk In Morison, M.J. (Ed.) *The Prevention and Treatment of Pressure Sores*, Harcourt Brace, Edinburgh. pp. 55–74.

SHOULD STAGE I PRESSURE ULCERS BE INCLUDED IN AUDITS? – THE UNITED STATES EXPERIENCE

Courtney H. Lyder
Adult, Family, Gerontological & Women's Health Division, Yale University School of Nursing, New Haven, CT, USA

The identification of the Stage I pressure ulcers is critical to early and cost-effective interventions. There remains much variance in the accurate assessment and identification of Stage I pressure ulcers. Thus, there is much intellectual discourse regarding the inclusion of Stage I pressure ulcers in quality of care audits in the United States. This presentation will review some of the challenges in identifying the Stage I pressure ulcers (including its identification in darkly pigmented skin) and its utility in quality of care audits.

DETECTING INCIPIENT PRESSURE SORE ONSET

Martin Ferguson-Pell, Graham Nicholson, Duncan Bain
Centre for Disability Research and Innovation, Institute of Orthopaedics and Musculo-Skeletal Sciences, University College London

Introduction

Clinicians frequently observe changes in skin colour when soft tissue viability is threatened by excessive weight bearing conditions. Usually the skin is locally red, but does not resolve over time in the way that reactive hyperaemia (RH) does. If the damage to the tissue is not severe, or is caught early then the redness can be blanched with the finger (blanchable persistent redness, BPR) and is due to an early inflammatory response. On the other hand, if damage is more severe, skin micro-circulation may be arrested, and the local redness will not be blanchable (non-blanchable persistent redness, N-BPR). These three states of skin redness are monitored by knowledgeable clinicians and disabled people to detect early tissue distress. Unfortunately clinical observation of skin redness is not always linked to an effective intervention to prevent further damage; readily classified by degree of severity; is difficult to detect in black people and others with deeply pigmented skin.

Methods

Tissue reflectance spectrometry (TRS) can be used to moni-

tor skin micro-circulation which in turn can identify adverse tissue status. The absorption spectrum for white light of the skin yields dynamic information the blood content and oxygenation of the skin in terms of blood content and oxygenation of the superficial dermis.

Results

The data presented illustrates changes in blood content and oxygenation during a period of loading applied to the tissues by an air bladder at 160 mmHg. The resting, occluded and hyperaemic response phases are evident. In this presentation a number of applications of tissue reflectance spectroscopy will be discussed with the view to using this technology as a tool for evaluating the interaction of support surfaces and the body, and detecting adverse tissue conditions.

AN ANALYSIS OF THE WOUND RELATED FACTORS THAT INFLUENCE NURSES CHOICE OF DRESSING FOR PRESSURE SORE MANAGEMENT

Holloway S, Price P, and Jones V
Wound Healing Research Unit, Cardiff, Wales

The factors that should be considered when assessing a wound, including pressure sores are well documented and recommendations for dressing choice are often linked with this to guide the nurse's choice of product.

The aim of this two-part study was to identify the most important factors that influence dressing choice for all grades of pressure sores. The European Pressure Advisory Panel Guidelines for classification of pressure ulcers were used to undertake an audit of pressure ulcers[1]. Participants from both a teaching hospital and a specialist unit were asked to rank wound related factors in order of importance with regards to deciding on the type of dressing used. These factors included; stage of sore, size of wound, exudate level, location, pain, odour, condition of surrounding skin and wound bed.

The study indicated a wide variation in the use of dressings across all grades of pressure sores. However, there appears to be consistency in the key factors that influence dressing choice, these included stage of sore, condition of wound bed and condition of surrounding skin.

The next stage of this study will be extended into the community setting with the aim of identifying factors that affect dressing choice in this environment.

1. European Pressure Advisory Panel (1999) *Pressure Ulcer Treatment Guidelines*. EPUAP. Oxford

EUROPEAN PRESSURE ULCER PROGRAMME IN PRESSURE ULCER CARE – DEMONSTRATIONS OF EDUCATION / TEACHING MATERIALS BEING USED THROUGHOUT EUROPE

Mr Mark O'Brien
The Royal London Hospital, London, England

There are often few educational opportunities for trained and untrained nursing staff within private nursing and residential homes. Yet these nurses are caring for an increasingly dependent elderly population with complex healthcare needs. The Nursing Home Education Programme was developed to meet the needs of this professional group in respect to pressure area care and wound management. The project involves ten one-hour PowerPoint-based lectures covering:

- The skin and ageing
- Pressure sore development
- Pressure relieving devices
- Pressure sore risk assessment
- Pressure sore classification
- Practical positioning
- The wound healing process
- Wound assessment
- The aetiology and treatment of lower limb ulceration
- General wound management

The lectures are designed for delivery with a data presenter and include animated graphics and photographic patient case studies. Each lecture is accompanied by student workbooks and can be delivered to groups by a speaker (supported by accompanying notes) or accessed by individual nurses using a PC for private study. The programme is currently being evaluated in the Tower Hamlets area of East London.

RISK ASSESSMENT. A REALITY TOO COMPLEX TO GRASP?

T. Defloor, L. Schoonhoven, M. Clark, R. Halfens and J Nixon

Based on an extensive literature review, and evidence based 'state of the art, on pressure ulcer risk assessment is formulated. The following topics are discussed: actual risk; risk assessment scales; and elements of risk analysis.

The first part of the text reflects on actual pressure ulcer risk, and the distinction between risk factors and risk indicators. The importance of that distinction for the choice of appropriate measures is stressed.

Do risk assessment scales sufficiently discriminate between patients at risk and not at risk, and is it possible to recommend a specific risk assessment scale, are the topics of the second part of the text.

The risk factors, the combination of risk assessment scales and clinical judgement, the continuous process of risk analysis, and the need for preventive (and therapeutic) measures are the elements that are discussed in the third part of the text.

The propositions, formulated in the text, will be discussed at the EPUAP meeting. During this meeting each participant will have the opportunity to express his or her approval or disapproval of each proposition by vote.

AN EDUCATIONAL PROGRAMME COMBINING THEORY AND PRACTICE OF PRESSURE ULCER PREVENTION

Lena Gunningberg
Department of Nursing Research and Development, University Hospital, Uppsala.

Christina Lindholm
Associate Professor, Karolinska hospital, Stockholm, Sweden.

Introduction
During a recent research project, the incidence of pressure ulcers has been reduced significantly from 55% in 1997 to 29% in 1999, and the comprehensiveness of nursing documentation in the patient records has improved significantly. Contributing to the change of clinical practice is most likely a combination of three preventive interventions; risk assessment and pressure ulcer grading, a pressure-reducing mattress and an educational programme. The aim of the present paper is to describe the philosophy and the content of the educational programme.

Methods
The educational programme on pressure ulcer prevention was developed according to the EPUAP guidelines and conducted in 1998.

Results
The philosophy was to encourage staff to improve care, supporting them with research-based instruments and guidelines. The programme included education provided by a multi-disciplinary team and consisted of 40 hours of theory and 40 hours of practical tasks. The main practical task was to perform two case studies in the nurse's own unit, in which the theory should be applied. The patients' history and status were described, as were risk factors, risk scores, prevention and treatment. The pressure ulcers were photographed and graded. These case studies were presented and discussed in a seminar. Twenty- five registered nurses participated from the university hospital and from the community setting. The 'Pressure Ulcer Nurses' who attended the course have subsequently met regularly for continuous updated education and exchange of experiences.

Summary
The overall awareness of prevention of pressure ulcers has increased. The Pressure Ulcer Nurses has initiated quality improvement work in their own units. For example, written guidelines has been developed and implemented and minor educational seminars has been conducted. Now, a repeated educational programme is on-going with a specific pre-post evaluation.

PROMOTING PRESSURE-RELIEF MOVEMENT IN WHEELCHAIR USERS –THE EVALUATION OF A THEORETICALLY DESIGNED STUDY

Lesley Stockton and Dianne Parker
University of Manchester, Psychology Department, Manchester, England.

Introduction
The United Kingdom Department of Health guidelines and the Agency for Health Care Policy and Research guidelines on pressure ulcer reduction recommend that wheelchair users move to relieve pressure on vulnerable points every 15 minutes. Previous approaches at improving wheelchair users health prevention behaviour have focused upon engineering aspects with little success in the long-term modification of wheelchair user behaviour. The aim of the strategy is to improve preventative health behaviour, and addresses the problem from a health psychology perspective. Health psychologists have developed theoretical models to explain and predict behavioural choices in other health domains. One of the most relevant is the Theory of Planned Behaviour.

Methods
This study used the TPB as a framework for the development and evaluation of a health intervention specifically designed for wheelchair users living in the community It involved an interview study of wheelchair users (n = 20), a theoretically developed questionnaire study (n = 136) and the design, implementation and evaluation of a theoretically based health intervention (n = 38). The study identified factors that could be influenced and an intervention strategy was developed to address them. The intervention involved four experimental conditions, information only (control condition), information plus TPB, information plus TPB, information plus TPB plus personalised delivery, and information plus TPB plus personalised delivery and the encouragement of implementation intentions about the type of movement and when and where the movement would be performed.

Results
The outcome of the intervention was measured against psychological variables pre and post intervention, along with reported frequency of movement. Statistical analyses of the intervention indicated that the wheelchair users' overall attitude towards performing pressure-relieving movement, based on negatively held beliefs, was significantly less negative after the intervention, ($t[df = 37] = -2.71$, $p = <.01$) and perceived behavioural control became significantly more positive ($t[df = 37] = 2.84$, $p<.01$). There were significant changes in several of the specific individual behavioural and control beliefs of the whole sample, which will be reported upon. Anova was used to examine the differences of the mean scores on the individual behavioural and control beliefs by experimental condition. The most significant changes in beliefs occurred in those wheelchair users who had received information plus TPB plus personalised delivery, however, the most reported behavioural change was in those who had formed implementation intentions.

Summary
This work has confirmed that wheelchair users are not following Department of Health guidelines. This theoretically designed intervention was effective in influencing the attitudes, beliefs and reported behaviour of wheelchair users.

AN ASSESSMENT OF MEDICAL AND NURSING KNOWLEDGE OF PRESSURE ULCERS IN AUSTRALIA

Prentice JL and Stacey MC
University Department of Surgery, Fremantle Hospital, Perth, Western Australia.

Introduction
Few studies that have investigated either doctors or nurses knowledge of the aetiology, predisposing factors and management of pressure ulcers have been reported in the literature. Results of studies conducted have indicated varying levels of knowledge within each group. These differ-

ences have been related to years of experience and additional tertiary qualifications.

Clinical practice guidelines should provide a framework within which clinicians can provide the best clinical care. These should lead to improved patient outcomes that have occurred as a result of clinician's increased knowledge of the particular health problem.

An aim of this Study was to determine if there was a change in the clinical practice and knowledge of medical and nursing staff following the introduction of the Australian Wound Management Association's (AWMA) guidelines for predicting and preventing pressure ulcers together with an education programme.

Methods

Junior Medical and Nursing Staff in ten major teaching hospitals in Australia in 2000 were surveyed to assess their knowledge of pressure ulcers. This was a pre- and post-assessment after the introduction of pressure ulcer guidelines into these hospitals. An education program to assist with the introduction, dissemination and implementation of these guidelines took place over a six-month period in only five of these hospitals. The other five hospitals received no other additional support. An education manual including independent learning modules that were accompanied by tutorial notes and audio-visual aids were used to provide in-service education on pressure ulcers.

The Staff questionnaires were a paper and pencil tool that contained 22 variables in the first survey and 24 in the second. Staff have recorded their demographics, use of risk assessment tools, knowledge of hospital pressure ulcer policies and wound management services. Staff have also been asked to identify ten risk factors that predispose a patient to being at high risk of pressure ulcer development. Respondents also identified treatment strategies for a Stage 1 and 2 pressure ulcers.

Results

In the first survey a total of 7,642 staff surveys were distributed: 1018 Medical and 6624 Nursing.

1221 were returned: a response rate of 16%. From 929 nursing responses to identification of risk factors 76% listed immobility, 65% poor nutrition, 46% incontinence, 11% spinal injury, 9% shear pressure, 6% peripheral neuropathy and 4% pressure. Only 224 (20%) of nursing respondents were able to identify that a pressure ulcer policy existed in their hospital. 548 or 50% of nurses stated a risk assessment tool used in their hospital. The main constraints to preventing pressure ulcers were lack of support surfaces (30%), time (22%), education (16%) and staff (11 %).

Respondents to the second survey from hospitals that received the education program have identified immobility, poor nutrition, and pressure and shear pressure with greater frequency.

Less than 1% of Medical staff identified pressure, shear and friction as independent causative factors in the first survey. Comparative data on the second medical survey will also be presented. Non-responder surveys were completed after each survey due to the low response rate. There are no differences between the two sets of responses.

Summary

Using an education program to facilitate the introduction of clinical practice guidelines for pressure ulcers does appear to have produced only modest improvements in staff knowledge even though a reduction in pressure ulcer prevalence occurred at the same time across these hospitals.

THE COSTS OF PRESSURE ULCERS: PREVENTION OR REACTION

C. Lourens*, J M G A Schols**, C N Kiejier

**Student University of Groningen, Faculty of Business Administration, **Verpleeghuis De Riethorst, Geertruidenberg; Faculty of nursing home medicine, UMC St Radboud Nijmegen, The Netherlands, **Department of Scientific Services, Nutricia Nederland BV, The Netherlands*

Introduction

Pressure ulcers (PU) are an important and fairly common problem in all sectors of health care. Because of their characteristics, nursing homes patients represent a particularly vulnerable group for developing PU. PU not only cause considerable patient suffering, they are also one of the most expensive disorders in the Netherlands'. The approach to this problem must focus primarily on adequate prevention, and with existing ulcers, on effective treatment.

Preventative measures have associated cost, but these costs appear to be minor in comparison to the costs of a prolonged hospital stay and more intensive nursing due to the development of PU. Empirical experience has shown that the best prevention and treatment of PU consists of three essential aspects: reducing pressure and sheer forces, adequate skin and wound care and nutritional therapy. Practice shows that nutritional therapy, is the least well integrated into patient care. This is surprising because research has shown that people in nursing homes are convinced of the fact that poor nutritional status is one of the main causes of the development and worsening of PU2.

Objective

This study was designed to emphasise the importance of nutritional intervention in the prevention and treatment of PU and to examine the actual costs of treating PU. The intention of this study is to change the (negative) thoughts concerning the too high costs of nutritional therapy. The following questions are addressed:

What are the extra costs incurred by PU in a nursing homes?

What is the influence of nutritional therapy (using sip feeds) on these costs?

Method

The study consisted of monitoring the costs of patient care in five nursing homes in the Netherlands. Forty-eight long-stay patients were divided into groups based on the four-stage grading system for severity of PU (1, 11, 111 and IV). The numbers of subjects per group were respectively 14, 13, 12, and 9. Patients were excluded when they received any specific nutritional intervention. Extra Costs (E) (i.e., material costs, medications costs and personnel costs) were recorded over a three day period and added onto the known costs of Basic Nursing Costs (B).

Results

A mathematical model was developed to make a realistic estimate of the Total Costs (TC) per patient per stage of PU. Calculations were based on the Basic Nursing Costs (B)

of the 125 Euro per patient per day, Extra Costs (B) and the increased Duration of intensive nursing (D^1) leading to the model: TC = (B+E) D. The TC per patient per stage of PU were 1575 Euro, 2834 Euro, 2871 Euro and 5858 Euro for the stages I, II, III and IV respectively. This model was modified to predict the effect of a PU specific sip feed for patients who developed PU.

Conclusion

A mathematical model revealed the Total Costs (TC) of PU in Dutch nursing homes. This study furthermore showed that through usage of sip feeds, a cost saving per patient, per stage of PU, can be realised if the total number of days of extra intensive nursing care (D) is reduced by one or more days.

References:

Haalboom JRE (1991). De Fosten van decubitis. *Ned tijdschr Geneeskd* 135: 606–610

Schols JMGA, Kleijer CN (2000). Nutrition policy for patients with pressure ulcers in Dutch nursing homes. *EPUAP Review* 2 (2): 51–54.

THE COST-EFFECTIVENESS OF CHRONIC WOUND CARE PROTOCOLS OF CARE

Sylvie Meaume
Hôpital Caries Foix, Ivry Sur Seine, France

Background

To meet the challenge of an ageing population, providers and payers must optimise chronic wound care outcomes and contain costs.

Objective

To use a consensus approach to develop protocols of care and cost effective models for the treatment of pressure ulcers and venous leg ulcers in France.

Methods

A pooled analysis of the international literature, supplemented by consensus opinion from French experts provided data to develop 3 protocols of care for the management of pressure ulcers and venous leg ulcers in France. Protocols of care with a composite sample size in the literature of less than 100 pressure ulcers or leg ulcers were excluded. In the pressure ulcer model, all protocols of care involved saline cleansing, debridement, wound fillers and adjunctive therapies and differed only with respect to the cover dressings used (saline gauze, Granuflex®, Comfeel®). In the venous leg ulcer models, protocols of care involved saline irrigation, debridement, wound fillers and compression bandages and differed only with respect to the dressings used (saline gauze, Granuflex®, Apligraf). Clinical outcomes and some treatment patterns were culled from the literature. Treatment patterns specific to France were included based on the consensus of the expert panel. The information was used to develop cost-effectiveness models, which measured cost (in French Francs) per healed ulcer in a French patient cohort over a 12-week period.

Results

Costs per healed ulcer for managing pressure ulcers and venous leg ulcers in France using the different protocols of care will be presented and discussed.

ACHIEVING REDUCTIONS IN PRESSURE ULCER PREVALENCE WITH EDUCATION AND CLINICAL PRACTICE GUIDELINES: AN AUSTRALIAN EXPERIENCE

Prentice JL and Stacey MC
University Department of Surgery, Fremantle Hospital, Perth, Western Australia.

Introduction

Whilst reductions in prevalence have been reported retrospectively the expected overall national decrease in prevalence was not realised immediately in the USA and Holland when their clinical practice guidelines for pressure ulcers were first released 10 and 15 years ago.

The prevalence of pressure ulcers in Australia ranges between 2.7 and 19%. Comparatively few prevalence studies have been conducted however, and none nationally. The Australian Wound Management Association has developed 'Clinical Practice Guidelines for the Prediction and Prevention of Pressure Ulcers'. Prior to public release these guidelines have been evaluated for their effectiveness in reducing pressure ulcer prevalence. A critical concept of this evaluation was an intensive education program to assist with their introduction and implementation. An aim of this first national study on pressure ulcers was to prospectively evaluate whether or not Australian guidelines for predicting and preventing pressure ulcers, in conjunction with an education program, does reduce pressure ulcer prevalence.

Methods

Ten major teaching hospitals participated in this Study in 2000. Five hospitals were surveyed for pressure ulcer prevalence, using the same methodology. A structured education program to introduce the guidelines into these hospitals was implemented over a six-month period. An Education Manual was provided to each hospital to assist with guideline implementation. Over 3,000 full copies and 7,000 pocket versions of the guidelines were distributed to clinicians. The hospitals were then re-surveyed for pressure ulcer prevalence. The prevalence survey tool contained 24 variables. Data captured included patient demographics, number and stage of pressure ulcers found, number of hospital acquired pressure ulcers, use of formal risk assessment tools, and type of support surface in use. Documentation and management of pressure ulcers was also reviewed. The other five hospitals not surveyed for prevalence received the guidelines, but no other interventions, acted as a form of control.

Results

In the first survey 453 of 1707 patients examined had a pressure ulcer; a prevalence of 26.5%. There were 884 ulcers found with 63% being Stage 1, 31% Stage 2, 2% Stage 3, and 4% Stage 4. Over 60% of ulcers were hospital acquired. Only 59% of patients with an ulcer had a support surface in place. The average age of patients with pressure ulcers was 65.8 years. In the second survey 397 patients from 1807 were affected; a prevalence of 22%. On chi-squared analysis this reduction is statistically significant $p<0.0\,1$. The number of ulcers overall dropped to 655 in the second survey. Other differences in relation to the above variables will also be discussed.

Summary
This Study's hypothesis that the introduction and effective use of the 'Clinical Practice Guidelines for the Prediction and Prevention of Pressure Ulcers' can reduce the prevalence of pressure ulcers within Australian teaching hospitals has been proven correct. Other clinical outcomes, such as an increase in the use of risk assessment tools and the use of support surfaces have also occurred.

This Study also suggests that an education programme that has organisational support is a key element to achieving successful implementation of clinical practice guidelines for pressure ulcers.

THE EFFECTS OF INTRA-OPERATIVE WARMING THERAPY ON THE INCIDENCE OF POST-OPERATIVE PRESSURE ULCERS: A RANDOMISED CLINICAL TRIAL

Eileen M Scott
Research & Development Co-ordinator, North Tees and Hartlepool NHS Trust, Stockton-on-Tees, England, UK

Introduction
Post-operative pressure ulcers are a common and expensive problem. Intra-operative hypothermia is also a common problem and may have a connection with impaired tissue viability. It was hypothesised that intra-operative prevention of hypothermia may reduce the incidence of post-operative pressure ulcers. A randomised clinical trial (n = 338) tested the effects of using a forced air blanket versus standard care.

Methods
Patients scheduled for orthopaedic, vascular, urological, or general abdominal surgery, where the normal hospital stay was expected to be at least five days, were admitted to the study. Exclusions were patients under 40 years of age and those for whom intra-operative warming therapy was standard practice. The elimination of bias was ensured through a concealed randomisation protocol and the measurement of outcomes by a researcher who was unaware of the treatment group to which each patient had been assigned.

Results
Pressure ulcers were reduced by almost half (10.4%: control; 5.6%: treatment; p = 0.109). The absolute risk reduction of 4.8% (95% confidence interval: no reduction to 11%) converts to a relative reduction of 46%. The number necessary to treat (NNT) is 21 patients (95% confidence interval: no effect to 10 patients). Contrary to what may have been expected, duration of surgery was not a factor there being no significant differences. Low body mass index (BMI) was related to pressure ulcer development (p = 0.009) and an inability to maintain core temperatures. The grading system used to categorise patient health status and anaesthetic risk (American Society of Anaesthesiologists, ASA grade) may also be an indictor of pressure ulcer risk. It appeared that the greater the anaesthetic risk, the greater the likelihood of developing pressure ulcers post-operatively.

Summary
Intra-operative forced air warming should become standard practice for all patients having major surgery, regardless of its expected duration. This is especially the case for patients who have additional risk factors, such as a low BMI or a high ASA grading, who may also benefit from pre-induction warming to supplement intra-operative therapy.

This research has important implications for the development of perioperative practice. The study was part of a doctoral programme with the University of Teesside and funded through a Research Training Fellowship awarded by the Northern & Yorkshire Region of the NHS Executive.

EDUCATION PROGRAMME IN PRESSURE ULCER CARE

Sally Rees Matthews
The Medi Centre, Heath Park, Cardiff, Wales CF14 4UJ

The occupational therapist is part of the multi-professional team that cares for patients who experience pressure ulcers. The occupational therapist is able to provide education where this equipment is best used. The health care professionals who seek advice and education include nursing staff, medical staff, patients and their carers and other colleagues (e.g., physio and OT).

The role of the occupational therapist as part of the team will be explained and will include liaison with other agencies.

Case histories will be used to illustrate how the occupational therapist functions as part of the multi-professional when managing patients with pressure ulcers. This will include discussing the use of equipment for beds, chairs, feet and other devices.

In this vulnerable group of patients who experience pressure ulcers the occupational therapist has a flexible and challenging role as part of the multi-professional team.

Note:

Further abstracts from the Le Mans meeting will be published in the next issue of the *EPUAP Review*.

Future Meetings

MARCH 2002

7 – 10 **4th Australian Wound Management Association Conference**
Adelaide Convention Centre, Australia
Contact: Conference Secretariat
PO Box 1280 (11/97 Catlemaine Street)
Milton, Queensland 4064, Australia
Tel +61 (0)7 3858 5531
Fax +61 (0)73858 5510
E-mail: wm02@im.com.au

APRIL 2002

13 – 14 **Indian Society of Wound Management Woundcon 2002**
Thiruvananthapuram, Kerala, India
Contact: Department of Surgical Oncology
Regional Cancer Centre
Tel +91 471 442541 / 522367
Fax +91 471 447454
E-mail: oncosurgery@rcctvm.org
E-mail: oncosurgery@hotmail.com

17 – 20 **47th Annual Meeting of the Plastic Surgery Research Council**
Harvard University and
Massachusetts General Hospital
Contact: W.P. Andrew Lee, MD
Massachusetts General Hospital
Harvard Medical School
15 Parkman Street, WAC–453
Boston, Massachusetts 02114, USA
Tel: 001 617 724 0400
Fax: 001 617 726 2824
E-mail: lee.wpa@mgh.harvard.edu

24 **Workshop on Multidisciplinary Concepts in Wound Healing**
Helsingør, Denmark
Contact: Congress Consultants
Martensen Allé, DK–1828 Frederiksberg C
Denmark
Tel: +45 7020 0305
Fax: +45 7020 0315
E-mail: mcwh@congress-consult.com
Web: http://www.congress-consult.com/mcwh

MAY 2002

23 – 25 **12th Conference of the European Wound Management Association**
'Chronic wounds and quality of life'
Contact: EWMA
PO Box 864, London SE1 8TT and/or
IV simposio Nacional sobre Ulceras
por Presion, GNEAUPP, Av. viana 1
26001-Logrono (La Rioja), Espana
Tel: +34 941 239 240
Fax: +34 941 239 347
E-mail: gneaupp@arrakis.es

29 – 2 June **Joint ETRS / WHS Meeting**
Baltimore, Maryland, USA
Contact: Jane Green
ETRS Business Office
Tel: +44 (0)1865 228264/69
Fax: +44 (0)1865 228233
E-mail: OxfordWoundHealingInstitute
@compuserve.com

JUNE 2002

19 – 22 **7th Oxford European Wound Healing Summer School**
St Anne's College, Oxford, England
Contact: Jane Green
Oxford Wound Healing Institute
Tel: +44 (0)1865 228269
Fax: +44 (0)1865 228233

SEPTEMBER 2002

11 – 12 **Education in Wound Care, an update**
Monte Carlo, France
Contact: Luc Téot
Tel: 00 33 467 33 82 31
Fax: 00 33 467 04 10 62

Continued overleaf

SEPTEMBER 2002 (continued)

13 – 14 **ETRS Focus Meeting on the status today of new technologies in tissue repair: growth factors, gene therapy, stem cells, tissue engineering and xenontransplantation.**
Nice, France
Contact: Jane Green
ETRS Business Office
Tel: +44 (0)1865 228264/69
Fax: +44 (0)1865 228233
E-mail: OxfordWoundHealingInstitute @compuserve.com

18 – 21 **6th European Pressure Ulcer Advisory Panel Open Meeting**
Budapest, Hungary
Further information: Jane Green
EPUAP Business Office
Tel: +44 (0)1865 228269
Fax: +44 (0)1865 228233
E-mail: EuropeanPressureUlcerAdvisPanel @compuserve.com

OCTOBER 2002

13 – 16 **3rd Smith & Nephew International Symposium Translating Tissue Engineering into Products**
Georgia Institute of Technology, Atlanta, USA
Contact: Georgia Tech
Web: http://www.gtec.gatech.edu
Tel: 001 404 385 0216

JULY 2004

8 – 13 **2nd World Union of Wound Healing Societies Meeting**
Paris, France
MF Congress,
Contact: Mr Bia
8 rue Tronchet, 75008 Paris, France
Tel: +33 140 07 11 21
Fax: +33 140 07 10 94
Web: http://www.wuwhs.org

EUROPEAN PRESSURE ULCER ADVISORY PANEL

Membership List

Executive Trustees

Dr Marco Romanelli, ***President***
Department of Dermatology, University of Pisa, Via Roma 67, 56126 Pisa, Italy.
Tel: 00 390 50 992 436 or 50 533 387, Fax: 00 390 50 551 124

Dr Michael Clark, ***Recorder***
Wound Healing Research Unit, Medicentre, University of Wales College of Medicine, Heath Park, Cardiff, CF4 4XN, Wales.
Tel: 02920 689703, Fax: 02920 754217

Dr George W Cherry, ***Secretary/Treasurer***
Chairman, Wound Healing Institute, Department of Dermatology, The Churchill Hospital, Headington, Oxford, OX3 7LJ, England.
Tel: 01865 228269, Fax: 01865 228233

Mrs Christine Cherry, ***Business Administrator***
EPUAP Business Administror, Wound Healiing Institute, Dept of Dermatology, The Churchill Hospital, Headington, Oxford, OX3 7LJ, England. Tel: 01865 228264, Fax: 01865 228233

Dr Denis Colin, Centre de l'Arche 72650, Saint Saturnin, France
Tel: +33 243 51 72 57, Fax: +33 243 51 72 67
Denis.Colin2@wanadoo.fr

Dr Jeen R E Haalboom, ***Past President***
Associate Professor of Internal Medicine, Dept of Internal Medicine, University Hospital, PO Box 85500, 3508 GA Utrecht, The Netherlands. Tel: 00 31 30 250 6214, Fax: 00 31 30 253 9060
e-mail: Haalboom@med.ruu.ml

Professor Keith Harding, ***Past President***
Director of Wound Healing Research Unit, University Department of Surgery, Cardiff Medicentre, Heath Park, Cardiff, CF4 4XN, Wales.
Tel: 02920 689703, Fax: 02920 745217, e-mail: wsrkgh@cf.ac.uk

Dr Christina Lindholm, Nattarovagen 42, 13234 Saltsjo-Boo, Sweden
Tel: 00 46 8 715 6263, Fax: 00 46 8 715 4442

Mr Joan-Enric Torra i Bou, Consorci Sanitari de Terrassa, Hospital de Terrassa, Carretera de Terrassa s/n, 08227 Terrassa, Barcelona, Spain
Tel: 00 34 93 731 00 07 (ext 2291), Fax: 00 34 93 731 44 51

Trustees

Mrs Sue Bale, Director of Nursing Research, Wound Healing Research Unit, University Department of Surgery, UWCM, Heath Park, Cardiff, CF4 4XN, UK. Tel: 02920 689703, Fax: 02920 745299

Dr Brigitte Barrois, 32 Rue Roger Lemaire, Aulnay/s/Bois 93600 France
Tel: +33 1 3453 2085 Fax: +33 1 3453 2481 bbarrois@ch-gonesse.fr

Prof Gerry Bennett, Consultant Geriatrician, Department of Health Care of the Elderly, Academic Office, 1st Floor, Alderney Building, Mile End Hospital, Bancroft Road London, E1 4DG, England.
Tel: 020 7377 7893, Fax: 020 7377 7844 bennettg@THHT.org

Mrs Carol Dealey, 32 Serpentine Road, Harbourne, Birmingham, West Midlands, B17 9RE, UK. Tel/fax: 0121 426 5674

Mr Tom Defloor, Nursing Sciences, Univ. of Gent, U.2. Block A 2ºV, De Pintelaan 185, 9000 Gent, Belgium. Tel/fax: 00 32 50 36 24 38

Ms Jacqui Fletcher, Senior Lecturer, Univ of Hertfordshire, Hatfield Campus, Hatfield, AL10 9AB, England. Tel: 01707 284000, Fax: 01707 284954

Ms Katia Furtado, Rua Viturino Nemesio, No 2 – 7 Esquerdo, 1750–307 Lisbon, Portugal Tel: +351 21 758 8288, Fax: +351 21 313 36434
kfurtado@ip.pt

Prof Dr Heinz Gerngross, Bundeswehrkrankenhaus oberer Eselsberg 40, Ulm, D–89075, Germany Tel: 00 49 731 2020, Fax: 00 49 734 553100

Professor Finn Gottrup, Copenhagen Wound Healing Centre, Bispebjerg University Hospital, Bispebjerg Bakke 23, DK–2400, Copenhagen NV, Denmark. Tel: +45 3531 3721, Fax: +45 3531 3724

Dr Laszlo Gulacsi, Bem ter 8, H-4026 Debrecen, Hungary Tel: +36 52 423 264

Dr Ruud J G Halfens, Vakgroep Verplegingswetenschap, University of Maastricht, PO Box 616, 6200 MD Maastricht, The Netherlands.
Tel: 00 31 43 388 2222, Fax: 00 31 43 367 1004

Ms Helvi Hietanen, Head Nurse, HUCH, Toolo Hospital, Dept of Plastic Surgery, Box 266, 00029 HYKS, Finland
Tel: +358 9 47 17 228, Fax: +358 9 47 17 260

Mrs Deborah Hofman, Clinical Nurse Specialist, The Wound Healing Institute, Dept of Dermatology, Churchill Hospital, Headington, Oxford, OX3 7LJ, UK. Tel: 01865 228268, Fax: 01865 228233

Ms Agnes Jacquerye, Hopital Erasme, 308 Route de Lenniik, Bruxelles 1070, Belgium. Tel: 00 32 2 555 36 65, Fax: 00 32 2 555 45 67

Mr Germain de Keyser, WCS Belgium, Kapucijnenvoer 35, 3000 Leuven, Belgium. Fax: 00 32 16 22 8349 e-mail: germain.dekeyser@pandora.be

Mr. Maarten Lubbers, Meibergdraas 9, 1100 A2, Amsterdam, The Netherlands. Tel: 00 31 20 56 69 111, Fax: 00 31 20 69 72 988

Dr Sylvie Meaume, Hopital Charles Foix, 7 Avenue de la Republique, Ivry sur Seine, 94205, France Tel: 00 33 149 594 504, Fax: 00 33 149 594 524

Zena Moore, The Adelaide & Meath Hospital, Dublin, Eire.
Tel: 003531 414200 (bleep 7190), Fax: 003531 4143576

Prof Elia Ricci, Via P. Crotta 8, 10010 Cascinette d'Ivrea, (TO) Italy
Tel: +39 011 544 747, Fax: +39 011 533 649, eliaricci@tin.it

Prof Terence Ryan, Wound Healing Institute, Dept of Dermatology, The Churchill Hospital, Old Road, Headington, Oxford, OX3 7LJ, England.
Tel: 01865 228269, Fax: 01865 228233

Anne Witherow, 36 Cappagh Grove, Portstewart, Derry, Northern Ireland.
Tel: 02871 345171 (ext. 3602).

Paying Members

Ms Jolanda Alblas, Boveny Ziekenhuis, Statenjachtstraat 1, 1034 CS, Amsterdam, The Netherlands. Tel: +31 20 634 6346, Fax: +31 20 634 6730

Mrs Patrizia Amione, Vulnera C50, Matteotti 35, Turin 10121, Italy.
Tel: +39 011 544 747 +39 011 533 649 padmion@tin.it

Mrs Annika Andriessen, Zwenkgras 25, Malden 6581–RK, The Netherlands.
Tel: 00 31 24 358 7086

Dr Bauk Apotheker, James Stewart Straat 125, Almere-Stad, 1325–JC, The Netherlands.

Mrs Leticia Arreytunandia, Lab Knoll SA, Av Burgos 91, Madrid 28050, Spain.
Tel: 00 34 1 334 3900, Fax: 00 34 1 383 1676

Associacao Portuguesa Tratamento de Feridas, Rua Alvares Cabral, 137–Sala 14, 4050–041 Porto, Portugal. Tel: +351 222 026 725 Fax: +351 222 007 890

Ms Stefania Astolfi, Vulnera C50, Matteotti 35, Turin, 10121 Italy.
Tel: 00 39 011 544 747, Fax: 00 39 011 533 649 r.cassino@sicurdata.it

Miss Sally Atkin, Smith & Nephew Medical, PO Box 81, Hessle Road, Hull, HU3 2BN, England

Prof Elizabeth Ayello, New York University, Division of Nursing, 346 Green Street, New York, NY 10003, USA Tel: +212 998 5311 Fax: +212 995 4302 elizabeth.ayello@nyu.edu

Ms Eve Baker, Smith & Nephew Medical Ltd, PO Box 81, Hessle Road, Hull, HU3 2BN, England

Mrs Sue Bale, Dir of Nursing Research, Wound Healing Research Unit, UWCM, The Medi Centre, Heath Park, Cardiff, CF14 4UJ, Wales Tel: 02920 682 187, 02920 754 217

Mr Graham Ball, Jacksons, 8 Mill Field, Barnston, Essex, CM6 1LH, England Tel: 01371 872 097 g.j.ball@herts.ac.uk

Ms Maria Barbierato, via ca' Brazzo, no. 44, Arre (Padua), Padova 35020, Italy. Tel: +39 049 538 4324

Dr Richard Barnett, Hill–Rom, 4349 Corporate Road, Charleston, South Carolina, 29405, USA

Ms Sharon Baranoski, 24724 W Park River LN, Shorewood, IL 60431 U.S.A. Tel: 001 815 740 1078, sbaranoski@silvercross.org

Dr Brigitte Barrois, 32 Rue Roger Lemaire, Aulnay/s/Bois, 93600 France Tel: +33 1 3453 2085 Fax: +33 1 3453 2481 bbarrois@ch-gonesse.fr

Dr Paggi Battistimo, St Priv MK Gandhi 3, Cameri 28062, Italy battpa@tin.it

Dr Andrea Bellingeri, Via Marongoni 15, Pavia 27100, Italy. Tel: +39 038 252 9975, Fax: +39 038 252 3203 ebellingeri@venus.it

Mrs Maureen Benbow, 20 Cloverfields, Haslington, Cheshire, CW1 5AL, England. Tel: 01270 251833, Fax: 01270 612041

Prof Gerry Bennett, Consultant Geriatrician, Department of Health Care of the Elderly, Academic Office, 1st Floor, Alderney Building, Mile End Hospital, Bancroft Road, London, E1 4DG, England. Tel: 020 7377 7893, Fax: 020 7377 7844 bennettg@THHT.org

Mrs Susan Bennett, c/o Ward Five, North Tyneside General Hospital, Rake Lane, North Shields, England

Mr Paul Bennis, Training Manager & Nursing Specialist, Redactron International b.v., Lange Voren 18, 5521 DD Eersel, The Netherlands. Tel: +31 497 516895 Fax: +31 497 516833 r.bennis@redactron.com

Mrs S Benton-Jones, The Nuffield Orthopaedic Centre, Windmill Road, Headington, Oxford, OX3 7LD, UK.

Mr Joseph Berman, Dept of Physical Therapy, 346 WSC Marqhette University, PO Box 1881, Milwaukee, Wisconsin, 53201-1881, USA Tel: 001 414 288 3363, Fax: 001 414 288 5987

Dr Laurent Bernier, Le Green, rue des Granges, Dommartin, 69380 France. Tel: 00 33 478 435 127, Fax: 00 33 478 435 172 lbernier@plaies.com

Mrs Elaine Bethell, c/o Michelle Morris, Secretary, City Hospital NHS Trust, Dudley Road, Birmingham, B18 7QM, UK. Tel: 0121 554 3801 Fax: 0121 507 5610 elaine.bethell@cityhospbham.wmids.nhs.uk

Mr Bert Billen, The ROHO Group, Peter Valentinuslaan 4, B–3500 Hasselt, Belgium Tel: 00 31 1128 4359, Fax: 00 31 1128 1517, bbillen@attglobal.net

Mr Eric Binder, TUV Product Service, Basis Institute, Ridler Str. 31, D–80339 Munich, Germany

Mr Itzak Binderman, School of Dental Medicine, Tel-Aviv University, Ramat Aviv, 69978 Tel Aviv, Israel Tel: +972 3 695 1835, Fax: +972 3 640 9250 binderma@post.tau.ac.il

Miss Lynne Birchall, Dept of Nursing, Metchley Lane, Edgbaston, Birmingham, B15 4TH, England Tel: 0121 472 1311

Dr Mary Bliss, 49 Groombridge Road, London, E9 7DP, England Tel: 020 8985 2007

Mr Giovanni Bollini, Via Palestrina 6, 20014 Nerviano (MI), Italy Tel: 00 39 2 6444 2526, Fax: 00 39 2 6444 2618

Mr Johe Bominaar, ConvaTec, Ujzelmolenlaan 9, AM Woerden, 3440 gx, The Netherlands. Tel: +31 348 436950, Fax: +31 348 423084 johe.bominaar@BMS.com

Helen Boon, Wallsend Health Centre, The Green, Wallsend, Tyne and Wear, NE28 7PD, England Tel: 0191 220 5916, 0191 220 5943

Mrs Th CM Bots, Silversteyn 64, 3621 PD Breukelen, The Netherlands. Tel: +31 346 264 208, Fax: +31 346 264 163 postbus@thbots.demon.nl

Dr R T Boumans, TNO Prevention & Health, PO Box 2215, Leiden 2301 CE, The Netherlands.

Dr Gerrie Bours, Maastricht Univ, Dept Nursing Science, PO Box 616, Maastricht 6200 MD, The Netherlands. Tel: +31 43 388 1279, Fax: +31 43 388 4162 G.Bours@zw.unimaas.nl

Dr Carlijn Bouten, Eindhoven University of Technology, Div. Continuum and Biomechanics, MATE, PO Box 513, 5600 MB, Eindhoven, The Netherlands. Tel: 00 31 40 247 3006 Fax: 00 31 40 244 7355 c.v.c.Bouten@tue.nl

Mr Hendrika Bouwman, Wilsonstr. 90, Hoofdorp, 2313 PV, The Netherlands. Tel: 00 31 23 561 1850

Mr Jon Bredal, Semsveien 150, 1384 Asker, Norway. Tel: +47 661 05610, Fax: +47 669 05611 bred@online.no

Ms Gail Broadbent, 44 Warley Road, Blackpool, FY1 2LL England Tel: 01253 303238

Joost L. Broerse, Postbus 167, Weesp, 1380 AD, The Netherlands. Tel: 00 33 294 415001, Fax: 00 33 294 430475

Miss Jill Brooks, Abingdon Hospital, Marcham Road, Abindon, Oxford, OX14 1AG, England. Tel: 01993 774126, Fax: 01992 706947 jill.brooks@oxch-tr.anglox.nhs.uk

Mr Harry Brouwer, c/o Sterreboslaan 2, Bloemendaal, 2061 VV, The Netherlands. Tel: +31 6 53 66 3583

Dr Roel Brull, Huntleigh Healthcare, Flevolaan 8, 1382 JZ Weesp, The Netherlands

Ms Mariantonietta Brunengo, Hill-Rom Spa, Via Ambrosoli 6, 20090 Rodana (MI) Italy

Dr Enrica Buonagurio, via A. Manzoni 6, Vimodrone, Milan 20090, Italy. Tel: +39 022 650 062, Fax: +39 022 502 546 ebuonagurio@libero.it

Ms Annette Buschka, Mölnlycke Health Care AB, PO Box 13080, SE 40252, Sweden. Tel: 00 46 31 722 8121, 00 46 31 722 3409

Mr Cesar Calderon, Beiersdorf Portugesa, Rus Soeiro Pereira Gomes, 59 – Queluz de Baixo, 2746–952, Portugal. Tel: 00 351 21 436 8500, Fax: 00 351 21 436 2874

Dr Gianna Rita Carella, 'C Golgi' Geriatric Institute, Piazza Golgi 11, Abbiategrasso (Milan) 20081, Italy. Tel: +39 029 466 771 Fax: +39 029 496 808

Mrs Antonietta Carusone, 'C Golgi' Geriatric Institute, Piazza Golgi 11, Abbiategrasso (Milan) 20081, Italy. Tel: +39 029 466 771 Fax: +39 029 496 809

Dr Roberto Cassino, Vulnera-Corso, Matteotti 35, Torino 10121, Italy. Tel: +39 011 544 747 Fax: +39 011 533 649 r.cassino@sicurdata.it

Ms Andrea Cavicchioli, Via Siligardi 14, 41100 Modena, Italy Tel: +39 059 4401 24, Fax: +39 059 3992 10 cavicchioliandrea@hotmail.com

Mrs Tina Chambers, 5 Wren Close, Ringwood, Hants BN24 3RF, England. Tel: 01425 471291, Fax: 01962 824826 tina.chambers@weht.swest.nhs.uk

Dr Michael Clark, Wound Healing Research Unit, UWCM, The Medi Centre, Heath Park, Cardiff, CF14 4UJ, Wales. Tel: 02920 682 191, Fax: 02920 754 217

Dr Denis Colin, Medical Director, Centre de l'Arche, 72650 Saint Saturnin, Le Mans, France. Tel: +33 243 51 72 57, Fax: +33 243 51 72 67 Denis.Colin2@wanadoo.fr

Mr Mark Collier, 61 Sparrowhawk Way, Hartford, Huntingdon, Cambridgeshire, PE18 7XE, England. Tel: 020 8280 5020, Fax: 01480 434100

Mrs Fiona Collins, 25 Hyde Gardens, Eastbourne, East Sussex, BN21 4PX, England. Tel: 01323 735588, Fax: 01323 737132 fiona@trcs.cc

Miss Pamela Cooper, Clinical Nurse Specialist, Dept of Tissue Viability, Foresthill, Grampion University Hospital, AB25 2ZN, Scotland. Tel: 01224 554621, Fax: 01224 849139

Mrs Barbara Craven, Disability Services, Walton Hospital, Whitecotes Lane, Chesterfield, Derbyshire, S40 3HW, England. Tel: 01246 552917 (ext 5707) Fax: 01246 552910

Ms Jean Cregg, 9 Goddards Lane, Aldbourne, Marlborough, Wilts, SN8 2DZ, England. Tel: 01282 432072, Fax: 01282 421597

Ms Ann Daenekindt, Stapelplein 70, Gent 9000, Belgium. Tel: +32 9 265 8770 Fax: +32 9 265 8771 ann.daenekindt@huntleigh-healthcare.be

Dr Cynthia Dale, Johnson & Johnson Medical Ltd, New Product Development, Gargrave, North Yorks, BD23 3RX, England.
Tel: 01756 747455 Fax: 01756 748158

Dr Sarah Daniels, Harrington House, Milton Road, Ickenham, Uxbridge, Middlesex, UB10 8PU, England. Tel: 01895 628395 Fax: 01895 628338

Prof Theo Dassen, Albrechtstrasse 15, 10117 Berlin–Mitte, Germany
Tel: +49 30 450 529 092, Fax: +49 30 450 529 900 theo.dassen@charitl.de

Mrs Carol Dealey, 32 Serpentine Road, Harborne, Birmingham, B17 9RE, England. Tel: (and Fax:) 0121 426 5674

Nathalie de Dieulveult, Smith & Nephew SA, Espace Novaxis, 25 Bld Alexandre Oyon, 72019 Le Mans Cedex, France

Dr Tom Defloor, Kerklaan 58, Brugge 8310, Belgium
Tel: 00 32 50 36 24 38, Fax: 00 32 50 36 24 38

Mr Germain de Keyser, Kapucijnenvoer 35, 3000 Leuven, Belgium
Tel: 00 32 1633 2211, 00 32 1922 8349 germain.dekeyser@pandora.be

Dr Erik de Laat, University Medical Centre Nijmegen, 111 Staf Zorg, PO Box 9101, 6500 HB Nijmegen, The Netherlands e.delaat@zorg.azn.nl

Dr Bart Derre, Aartstraat 210, Ronse, B-9600, Belgium. Tel: 00 32 55 20 6948

Ms Ingrid Devries, Smith & Nephew BV, Kruisweg 659, 2132 HG Hoofdorp, The Netherlands

Dr Andy Dobrzeniecki, Torsana A/S, Skosborg Strandvej 156, DK-2942 Skodsborg, Denmark

Dr Inge Duimel-Peeters, Wirixstraat 22, Tongeren, 3700 Belgium
Tel: +31 43 388 1557, Fax: +31 43 388 4162 i.duimel@xw.unimaas.nl

Dr Sonia Dumit-Minkel, 1231 E. Donges Crt, Bayside, Wisconsin 53217, USA

Mrs Cheryl Dunford, Medical Equipment Centre, Salisbury District Hospital, Salisbury, Wilts, SP2 8BJ

Dr Ana Durao, R Replia Horsensia de Castro, No 2 – 8oD to, Colina do Sol, 2700 Amadora, Portugal. Tel: +351 21 474 8559 anadurao@net.sapo.pt

Mrs Sandra Ellis, 14 Pinewood Road, Eaglescliffe, Cleveland, TS16 0AH, England Tel: 01642 791558 Fax: 01642 624165

Mrs Wendy Eve, Saiyang, 30 Torton Hill Rd, Arundel, West Sussex, BN18 9HL, England Tel: 01903 882212, Fax: 01243 623664 wendyeve@u.genie.co.uk

Carlos Ferrer, Smith & Nephew SA, Fructuos Gelabert 2 y 4, 08970 Sant Juan Despi, Barcelona, Spain

Dr Rosy Fittipaldi, Via Ticinello No.34, Pavia, 27100 Italy

Ms Cynthia Fleck, The ROHO Group, 100 North Florida Avenue, Belleville, Illinois, 62221, USA Tel: +618 277 9173, Fax: +618 277 9561
cynthiaf@therohogroup.com

Mrs Jacqui Fletcher, University of Hertfordshire, Hatfield Campus, College Lane, Hatfield, Herts, AL10 9AB, England
Tel: 01707 284000, Fax: 01707 284954 j.fletcher@herts.ac.uk

Mr Håkan Freijd, MedTec Nordic AB, Vinbarsvagen 14, S–734 31 Hallstahammar, Sweden. Tel: +46 220 126 23, Fax: +46 70 696 7276
medtecnordic@netscape.net

Mr Gerd-Wenche Frilseth, Smith & Nephew A/S, PO Box 224, Nye Vakaas vei 64, 1360 Newbru, Norway

Ms Katia Furtado, Rua Viturino Nemesio, No.2–7 Esquerdo, 1750-307 Lisbon, Portugal. Tel: +351 21 758 8288, Fax: +351 21 313 36434 kfurtado@ip.pt

Mr Lucas Garabet, GerroMed GmbH, Fangdieckstra 75B, Hamburg 22547, Germany Tel: +49 40 547 3030, Fax: +49 40 547 30331
GarabetL@Gerromed.de

Prof Stefano Gasperini, Via V Maroso, 50, c/o Bristol Myers Squibb, Div. ConvaTec, Roma 00142, Italy stefano.gasperini@bms.com

Mr K. G. Gebhardt, 2 Manchuria Villas, Wix's Lane, London, SW4 0AG, England. Tel: 020 7228 8545, Fax: 020 8725 1621

Prof Dr Heinz Gerngross, Bundeswehrkrankenhaus, Oberer Eselberg 40, D–89070, Ulm, Germany.
Tel: 00 49 931 171 2020, Fax: 00 49 937 553100

Dr Carella Gianna Rita, 'C Golgi' Geriatric Institute, Piazza Golgi 11, Abbiate-grasso (Milan) 20081, Italy.
Tel: 00 39 029 466 771 Fax: 00 39 029 496 808

Dr Walter Gianni, via Appennini 38, Rome 00198, Italy
Tel: +39 06 3034 2690, wgianni@tiscalinet.it

Mrs Elaine Gibson, 21 St Mary's Green, Kennington, Ashford, Kent, TN24 9HP, England. Tel: 01233 626837 gibse@btinternet.com

Franco Giraudi, Smith & Nephew Srl, Centro Direzionale Colleoni, Viale Colleoni 13, Palazzo Orione Ingresso 1, 20041 Agrate Brianza, Milan, Italy.

Me Anabela Gomes, Rua Teofilo Braga, 154–1o, 4435–461 Rio Tinto, Portugal.
Tel: +351 224 889 791

Mrs Ann Goodhead, Derbyshire Royal Infirmary, London Road, Derby, DE1 2QY, England. Tel: 01332 347141, Fax: 01332 254958

Dr Allison Graham, 75 Mellstock Road, Aylesbury, Bucks, HP21 7NX, England
Tel: 01296 315851, Fax: 01296 315867

Dr Jeffrey Graham, Dept of Health, Room LG24, Wellington House, Walterloo Road, London, SE1 8UG, England Tel: 020 7972 4710 Fax: 020 7972 4405

Mr David Gray, 15 Tarbothill Rd, Aberdeen, AB22 8RF, Scotland.
Tel: 01224 681818 (703125), Fax: 01224 708665 (703125)

Mr Mark Green, 1 Greenwood Avenue, Horwich, BL6 6FA, UK.

Dr Laszlo Gulacsi, Bem ter 8, H–4026 Debrecent, Hungary.

Mrs Lena Gunningberg, Department of Nursing Research and Development, University Hospital, 75185 Uppsala, Sweden. Tel: +46 18 611 3194,
Fax: +46 18 611 3025 lena.gunningberg@adm.uas.lul.se

M Susan Gwynne, C.I. Adulti, Ospedale G Pasquinucci, via Aurelia Sud 1, Massa 54100, Italy.

Dr Jeen RE Haalboom, Dept. of Internal Medicine, University Hospital, Heidelberglaan 100, Utrecht 3508, The Netherlands.
Tel: 00 31 30 250 6214, Fax: 00 31 30 253 9060

Dr Satsue Hagisawa, Qita Medical University, School of Nursing, Hasama, Qita 879-5593, Japan.

Mr Kurt Halbwachs, Smith & Nephew GmbH, Concorde Business Park D2/ Top 11, 2320 Schwechat, Austria.

Dr Ruud Halfens, Praaglaan 123, 6229 HR Maastricht, The Netherlands.

Ms Samantha Hall, Acordis Speciality Fibre Ltd. Lockhurst Lane, Coventry, CV6 5RS, England.

Ms Tracey Hamlyn, 61 Lydford Park Road, Peverell, Plymouth, PL3 4LQ, England Tel: 01752 670601

Mr Mark Hammonds, Coronary Care Unit, James Cook University Hospital, Marton Road, Middlesborough, TS4 3BW, England
Tel: 01642 854801, Tel: 01642 854196

Miss Jane Hampton, 25 Trentham St, Southfields, London, SW18 5AS England. Tel: 020 8846 6544 Fax: 020 8846 6543

Dr Carita Hansson, Dept of Dermatology, Wound Healing Centre, Sahlgrenska University Hospital, 41345 Göteborg, Sweden
Tel: +46 31 342 1000 Fax: +46 31 821 871

Prof Keith Harding, Director, Wound Healing Research Unit, UWCM, Cardiff Medicentre, Heath Park, Cardiff, CF14 4UJ, Wales, UK
Tel: 02920 682 176, Fax: 02920 754 217 HardingKG@cf.ac.uk

Ms Elizabeth Hardy, Northumbria Healthcare NHS Trust, Wallsend Health Centre, The Green, Wallsend, Tyne and Wear NE28 7PD England. Tel: 0191 220 5928, Fax: 0191 220 5943

Ms Diane Hargrove, Seton Healthcare, Tubiton House, Medlock Street, Oldham, OL1 3HS, England. Tel: 0161 652 2222, Fax: 0161 621 2627

Ms Judy Harker, Room 15 Chalmers Keddie Building, Royal Oldham Hospital, Rochdale Road, Oldham, OL1 2JH, England Tel: 0161 627 8701 Fax: 0161 627 8554, judy.harker@oldham-tr.nwest.nhs.uk

Mrs Lucy Harper, 50 Somersall Street, Mansfield, Notts., NG19 6EP, England. Tel: 01623 456063 lucy@ntlworld,com

Ms Joy Harris, Smith & Nephew Medical Ltd, PO Box 81, Hessle Rd, Hull, HU3 2BN, UK. Tel: 01482 225181 (x 2645), 01482 673106

Mr Kenny Harris, Davenant, 18a Lordsgate Lane, Burscough, Ormskirk, L40 7ST, UK

Mr William Haughton, 211 Spital Road, Bromborough, Wirral, Merseyside, CH62 2AF, England. Tel: 0151 334 8461

Mrs Linda Haywood, 25 Avalanche Road, Southwell, Portland, Dorset, DT5 2DT, England. Tel: 01305 252812

Ms Arja Heikinheimo, Kuntokatu 8, 15900 Lahti, Finland Tel: +358 3 819 4857, Fax: +358 3 819 7850 arja.heikinheimo@phks.fi

Ms Jussi Heikkila, Kuoppatie 4, PO Box 25, Helsinki, 00731 Finland Tel: +358 9 346 2574, Fax: +358 9 346 2576 jussi.heikila@icfgroup.fi

Dr Eva-Lisa Heinrichs, ConvaTec Ltd, Swakeleys House, Milton Rd, Ickenham, Uxbridge, Middlesex, UB10 8NS, England. Tel: 01895 628330, Fax: 01895 628332

Ms Taina Hemmila, Kuoppatie 4, PO Box 25, Helsinki, 00731 Finland Tel: +358 9 346 2574, Fax: +358 9 346 2576 taina.hemmila@icfgroup.fi

Mr Jan Hermkens, Weymar Straat 8, Maasbree, 5993 CT, The Netherlands. Tel: +31 77 465 2676, Fax: +31 77 465 1599 jan.hermkens@wxs.nl

Ms Hilde Heyman, Karel VD, Woestynelaan 40, 2630 Aartselaar, Belgium Tel: +31 3 289 4087

Ms Helvi Hietanen, Tonttumuorinkija 1, 02200 Espoo, Finland. Tel: +35 85 001 02947, Fax: +35 89 412 5074 hetu.hietanen@magabaud.fi

Mrs Deborah Hofman, Wound Healing Institute, Dept of Derm., Churchill Hospital, Headington, Oxford, OX3 7LJ, England Tel: 01865 228268, Fax: 01865 228233

Mrs Monica Hofmann-Rosener, HNE Healthcare, Im Hulsenfeld 19, 40721 Hilden, Germany. Tel: +49 2013 97110 Fax: +49 2013 971146 hne.hofrose@t-online.de

Mrs Helen Hollinworth, 10 Cages Way, Melton, Woodbridge, Suffolk, IP121TE, England Tel: 01473 296557

Ms Alison Hopkins, Primary Care, Mile End Hospital, Bancroft Rd, London E1 4DG, England. Tel: 020 7377 7000 (ext 4331) Fax: 020 7377 7802

Ms Hovannouhi Houniet, Nutricia Netherlands, Postbus 1, Zoetermeer, 2700 MZ, Netherlands. Tel: 00 31 353 9370

Ms Ansa Iivanainen, Potnolankatu 5, Mikkeli, 50120 Finland. Tel: +358 15 150 632, Fax: +358 15 355 6686 ansa.iivanainen@mikkeliamk.fi

Prof Agnes Jacquerye, Clinique Universitaires de Brusselles, Route de Lemik 808, 1070 Brusselles, Belgium. Tel: +32 2 555 4567, Fax: +32 2 555 3665

Sister Sian James, Wound Healing Office, East 5, Whitchurch Hospital, Park Road, Whitchurch, Cardiff CF4 7XB, UK

Mr Torsten Johansen, Smith & Nephew A/S, Naerum Hovedgade 2, 2850 Haerum, Denmark

Ms Elisabeth Jolink, Rijnstate Hospital, PO Box 9555, 6800 TA Arnhem, The Netherlands. Tel: +31 26 378 6973

Dr Wilhelm Jung, Wound Manage. Division, Smith & Nephew Medical Ltd, PO Box 81, Hessle Rd, Hull, HU3 2BN, England. Tel: 01482 673030 Fax: 01482 673106

T. Kaldijk, Academisch Ziekenhuis Maastricht, Postbus 5800, 6202 AZ, Maastricht, The Netherlands. Tel: +31 43 387 5912, Fax: +31 43 387 5142 tka@frev.azm.nl

Mr Raija Kanniainen, Perkionkuja 5B, 01670 Vantaa 67, Finland. Tel: +358 9 270 92793, Fax: +358 9 270 92798 raijakanniainen@hotmail.com

Greger Karlsson, Smith & Nephew AB, Textilvagen 7, 3tr, S–120 30 Stockholm, Sweden.

Mrs Anne Keogh, 8 Glenavon Road, Kings Heath, Birmingham, B14 5BL, England. Tel: 0121 604 2287, Fax: 0121 697 8377

Dr Morris Kerstein, 1214 Valley Road, Villanova, PA 19085, USA Tel: 001 215 762 8402 Fax: 001 215 762 8389

Mrs Penny Keynton-Hook, Department of Professional Studies, Sussex Weald and Downs NHS Trust, 9 College Lane, Chichester, PO19 4FX, England. Tel: 01203 815336 (0402 891835) Fax: 01203 815413

Mrs Brenda King, 12 Beckton Ave, Waterthorpe, Sheffield, S20 7NA, England. Tel: 0114 271 6416, Fax: 0114 271 6417, brenda.king@virgin.net

Prof Luther Kloth, Dept of Physical Therapy, Marquette University, PO Box 1881, Milwaukee, WI 53201-1881 USA Tel: 001 414 288 3381 Fax: 001 414 288 5987

Mrs Cathy Knowles, Tissue Viability Specialist, Royal Devon and Exeter Hospital (Wonford), Barrack Road, Exeter, EX2 5DW, England. Tel: 01392 402846 Fax: 01392 402774

Mr E. Koopman, Deventer Ziekenh Stg, Fesevurstraat 7, 7415 CM Deventer, The Netherlands. Tel: +31 (0)570 646 078

Me Eva Krahenbuhl, Ardo Medical AG, Gewerbestrasse 19, Unterageri, 6314 Switzerland. Tel: +41 417 57 70 70, Fax: +41 417 57 70 71 eva.krahenbuhl@ardo.ch

Prof. Andrzej Kubler, Chalublinskiego 1A, Wroclan, 50368 Poland. Tel: +48 71 328 1534, Fax: +48 71 328 5087 andrzej.kubler@anest.am.wroc.pl

Mr Erik Küppers, HNE Healthcare, Im Hulsenfeld 19, 40721 Hilden, Germany. Tel: +49 2013 97110 Fax: +49 2013 971146 hne.kueppers@t-online.de

Mr Jan van Laere, Smith & Nephew SA, Avenue du Four a Briques 3B, 1140 Bruxelles, Belgium.

Ms J Leenman, Albert Cuyplaan 17, Woudenberg LD 3931, The Netherlands. Tel: 00 31 33 286 2303 Fax: 00 31 33 693 2740

Mr Derek Lemon, 13 Victoria Road, Northampton, NN1 5ED, England. Tel: 01604 604763 Fax: 01604 604763

Miss Ruth Lester, 64 Wellington Road, Edgbaston, Birmingham, B15 2ET, UK Tel: 0121440 4937, Fax: 0121 440 7708 ruthlester@compuserve.com

Mr Nigel Lewis, Smith & Nephew Healthcare Ltd, Healthcare House, Goulton Street, Hull, HU3 4DJ, England.

Ms Sarah Lewis, 14 Lancaster Road, Walthamstow, London, E17 6AJ, England. Tel: 020 8503 3921 sarah.lewis@uclh.org

Mr Wouter Lioen, Sampli NV, Schamperij 9, B–9667 Horebeue, Belgium. Tel: 00 32 55 45 5867, Fax: 00 32 55 45 6986

Dr Christina Lindholm, Uppsala University Hospital, Uppsala, 75185, Sweden. Tel: 00 46 18 66 3087. Fax: 00 46 87 15 44 42

Dr Maarten Lubbers, Surgeon AMC, Meibergdreef 9 1105 AZ, Amsterdam, The Netherlands. Tel: 00 31 20 566 9111, Fax: 00 31 20 697 2988

Ms Yvonne Lutgens, Nieuwe Uilenburgerstraat 10B, 10011 LP Amsterdam, The Netherlands. Tel: +31 20 566 9111 Fax: +31 20 566 9221 y.h.lutgens@amc.uva.nl

Ms Gysesl Machteld, De Domk 4, Mortsel, B–2640, Belgium Tel: 00 32 3455 2660 Fax: 00 32 3457 3419

Mrs Helga Magnusson, Mölnlycke Health Care, PO Box 13080, 40503 Göteborg, Sweden

Mr Andrew Cox Martin, Dept of Medical Engineering, Salisbury District Hospital, Salisbury, Wilts, SP2 8BJ, England. Tel: 01722 425138 Fax: 01722 416227 bill@medengsdh.demon.co.uk

Dr Marco Masina, Via Andrea Costa 5, S Giorgio Di Piano (BO), 40016 Italy Tel: +39 339 305 1053, Fax: +39 051 66 44491 marc_mas@yahoo.com

Mrs Peta Matthews, Southern Cottage, Jenkins Lane, St Leonards, Tring, Herts, HP23 6NW, England. Tel: 01494 758751

Dr Stella Maurizio, Burn Unit/CTO, via Zuretti 29, Torino, 10137 Italy. Tel: +39 11 693 3423/5, Fax: +39 11 693 3425

Mr Anton Mayrhauser, Ketzergasse 39 (FA Sunmed), 1232 Vienna, Austria Tel: +43 1699 2299 Fax: +43 1699 2299-1 mayrhauser@ sunmed.at

Mr Ray McDermott, Smith & Nephew Ltd, Pottery Road, Kill O'the Grange, Dun Laoghaire, Co. Dublin, Ireland.

Dr Alistair McLeod, Huntleigh Technology PLC, 310-312 Dallow Road, Luton, LU1 1TD, England. Tel: 01582 745768, Fax: 01582 745862

Ms Mary McMahon, St Joseph's Ward, Cappagh National Orthopaedic Hospital, Finglas, Dublin 11, Ireland.

Dr Sylvie Meaume, Hopital Charles Foix, 7 Avenue de la Republique, Ivry sur Seine, 94205, France Tel: 00 33 149 594 504,
Fax: 00 33 149 594 524 sylvie.meaume@cfx.ap-hop-paris.fr

Mrs Janine Michaelides, Pindou St 6, Limassol 3035, Cyprus.
Tel: +357 574 7750, Fax: +357 574 7668 janinemichaelides@yahoo.com

Dr Julian Minns, Dept of Medical Physics, Dryburn Hosp, Durham, DH1 5TW, England. Tel: 0191 333 2220, Fax: 0191 386 5695 jminns@compuserve.com

Mr Peter Mitchell, 40-60 West Thebarton Road, Thebarton, South Australia 5031, Australia.

Ulla Moe, Product Manager, Huntleigh Healthcare, Hejreskouvej 18a, 3490 Kvistgard, Denmark. Tel: 00 45 49 138 486, Fax: 00 45 49 138 487

Dr Fabrizio Moffa, Vulnera C50, Matteotti 35, Turin 10121, Italy.
Tel: +39 011 544 747, Fax: +39 011 533 649 fmoffa@tin.it

Ms Sue Moody, Smith & Nephew Medical Ltd, PO Box 81, Hessle Rd, Hull, HU3 2BN, England.

Mrs Zena Moore, Kuldana, 11 Beech Park Avenue, Castleknock, Dublin 1, Ireland. Tel: +353 1 821 6775, Fax: +353 1 414 3576 zena.moore@amnch.ie

Ms Louise Morris, 3 Bowood Lane, St Peters, Worcester, WR5 3UT, England.
Tel: 01905 769337, Fax: 01527 517432 louise_morris@btinternet.com

Ms Libby Morrison, Worldwide Clinical Research Group, Johnson & Johnson Medical, Gargrave, North Yorkshire, BD23 3RX, England.

Mr Olavi Murros, Kuoppatie 4, PO Box 25, 00731, Finland.
Tel: +358 9 346 2574, Fax: +358 9 346 2576 olavi.murros@kolumbus.fi

Mrs Jeanette Nelson, Vibro-Pulse Ltd, Colomendy Industrial Estate, Denbigh, N Wales, LL16 5TS, UK Tel: 01745 811200, Fax: 01745 817142
epetern@aol.com

Mr Peter Nelson, Vibro-Pulse Ltd, Colomendy Ind. Estate, Denbigh, N Wales, LL16 5TS, UK Tel: 01745 811206, Fax: 01745 817142 epetern@aol.com

Ms Kaoru Nishide, Smith & Nephew KK, Shiba-Nikkei-Yuraku Bld, 1-10-13 Shiba, Minato-ku, Tokyo 105-0014, Japan. Tel: 00 81 3544 35721,
Fax: 00 81 3544 35722 kaoru.nishide@smith-nephew.com

Mrs Jane Nixon, Centre for Evidence Based Health Care, University of Huddersfield, Harold Wilson Building, Queensgate, Huddersfield, HD1 3DH, England. Tel: 01484 473645 j.nixon@hud.ac.uk

Mrs Pia Obank, Lane End Surgery, Finings Road, Lane End, Bucks, HP14 3ES, England Tel: 01494 883364

Miss Louise O'Connor, 37 Clough House Drive, Leigh, Lancashire, WN7 2GD, England. Tel: 0161 291 3227 louise.oconnor@smunt.nwest.nhs.uk

Dr Cathy O'Neill, Huntleigh Healthcare, 312 Dallow Road, Luton, LU1 1TD, England. Tel: 01582 745736, Fax: 01582 459100 cathy.oneill@hunhcare.co.uk

Sabine Onillon, Smith & Nephew AG, Hans-Huber Strasse 38, Postfach CH–Soluthurn, Switzerland.

Mrs Nwando Onugha, 3 Wood Close, Salfords, Redhill, Surrey, RH1 5EE, England. Tel: 01293 823176

Dr Cees Oomens, Eindhoven Univ of Technology, Mech Eng Dept, PO Box 513, 5600 MB, Eindhoven, The Netherlands. Tel: +31 40 247 2818,
Fax: +31 40 244 7355 oomens@wfw.wtb.tue.nl

Dr Forma Ormella, Via Carlo Porte 3, Voltorre di Gavirate, Varese 21026, Italy
Tel: +39 033 2828 443 or 730372 pamisua@tin.it

Ms Sarah Pankhurst, Wollaton Vale Health Centre, Wollaton, Nottingham, NG8 2GR, England. Tel: 0115 928 8861, 0590

Ms Angela Parlane, Flat 59, 135 Warwick Road, London, W14 8NJ, England.
Tel: 07810 026534, angelapsyd@hotmail.com

Dr Jeanne Perla, 10 Center Road, Orchard Park, NY 14217, USA
Tel: +1 716 662 8662, Fax: +1 716 662 8624 jperla@gaymar.com

Mrs Anne-Marie Perrin, 13 Pettitts Lane, Dry Drayton, Cambs, CB3 8BT, England. Tel: 01954 780467 Fax: 01954 789729

Dr Carla Pezzuto, Torino via Garibaldi 6, 10121, Italy. Tel: 00 39 011 521 5909

Dr Maria Pietropaolo, via val Trompia 56, Rome 00141, Italy
Tel: +39 06 871 92 983, Fax: +39 06 494 0594

Dr Elaine Pina, Comissao de Controlo de Infeccao, Hopital sto Antonio dos Capuchos, Alameda sto Antonio, Dos Capuchos, 1150 Lisbon, Portugal.

Mrs Monica Pittarello, Vulnera-Corso, Matteotti 35, Torino, 10121 Italy.
Tel: +39 011 544 747, Fax: +39 011 533 649 monica.pittarello@tiscalinet.it

Dr Chryssanthi Plati, Univ of Athens, Fragokklissias 12 Str, 15125 Marousi, Athens, Greece. Tel/Fax: +301 61 98 619

Mrs Fiona Preece, Staff Development Education Centre, Worcester Royal Infirmary NHS Trust, Ronkswood Branch, Newtown Rd, Worcester, WR5 1HN, England. Tel: 01905 760604, Fax: 01905 760580

Mrs Maria Priami, Univ of Athens, Fragokklissias 12 Str, Marousi, 15125 Athens, Greece. Tel/Fax: +301 61 98 619

Dr Patricia Price, Wound Healing Research Unit, Cardiff Medi Centre, Heath Park, Cardiff, CF14 4UJ, Wales. Tel: 02920 682 179, Fax: 02920 754 217
pricepe@cf.ac.uk

Mr Terence Price, Seers Bough, Wilton Lane, Jordans, Beaconsfield, HP9 2RG, England. Tel: 01494 874 589

Mr Marcus Raphael, B Braun Medical Ltd, Thorncliffe Park, Sheffield, S35 2PW, England. Tel: 0114 225 9127
Fax: 0114 225 9123 marcus.raphael@bbraun.com

Mr Claude Regnier, B. Braun Biotrol SA, 69 Rue de la Grange Aux Belles, 75010 Paris, France.

Brukhard Reis, Smith & Nephew GmbH, Medical Division, Max-Planck-Strasse 1–3, D–34253 Lohfelden, Germany

Prof Elia Ricci, Via P. Crotta 8, 10010 Cascinette d'Ivrea, (TO) Italy
Tel: +39 011 544 747, Fax: +39 011 533 649 eliaricci@tin.it

Dr Marina Ritter, Polyheal Ltd, 44 Bar Jehuda Str, Nesher, 20300 Israel
Tel: +972 4 820 7917, Fax: +972 4 820 7919 marina@polyheal.co.il

Dr Vladimire Ritter, Polyheal Ltd, 44 Bar Jehuda Str, Nesher, 20300 Israel
Tel: +972 4 820 7917, Fax: +972 4 820 7919

Mr Stefan Roales-Welsch, An der Hauptstr 36, 35287 Amoneburg, Germany
Tel: +49 (0)6421 286 2739 srowe@gmx.de

Dr Marco Romanelli, Department of Dermatology, University of Pisa, Via Roma 67, 56126 Pisa, Italy. Tel: 00 39 050 992 436 Fax: 00 39 050 551 124

Prof Lior Rosenberg, 13 Harduf Street, Omer 84965, Israel
Tel: +972 764 00880, Fax: +972 764 03033 proflior@netvision.net.il

Voula Rossetto, Smith & Nephew Medical Ltd, PO Box 81, Hessle Rd, Hull, HU3 2BN, England.

Dr Vincenzo Ruggiero, Clinica villa Bianca Martina, Franca Taranto Italie, 74100 Taranto, Italy Tel: +39 080 449 0234

Mrs Linda Russell, Queens Hospital, Burton Hospitals NHS Trust, Belvedere Rd, Burton on Trent, Staffs, DE13 0RB, England.
Tel: 01283 511511 (x 2272)

Dr David Ryan, GITU Freeman Hospital, Newcastle upon Tyne, NE7 7DN, England. Tel: 0191 284311 (x 26423) Fax: 0191 223401
David.Ryan@nuth.northy.nhs.uk

Prof Terence Ryan, Wound Healing Institute, Department of Dermatology, Churchill Hospital, Headington, Oxford, OX3 7LJ, England.
Tel: 01865 228269, Fax: 01865 228233

Dr Paini Salminen-Peltola, Kuusaankuja 2, Jarvenpaa, 04430 Finland
paivi.salminen-peltola@hus.fi

Ms Margarita Sanchez, CI Cacandvas 27/31 SN, Corbera de Llobregat, 08757 Barcelona, Spain. msanchez@icnpharm.com

Mr Bob Sandham, Smith & Nephew Medical Ltd, PO Box 81, Hessle Rd, Hull, HU3 2BN, England.

Andre Santos, Smith & Nephew Lda, Galerias do Alto da Barra, Av. Das Descobertas, Piso 3 No 59, Alto da Barra – 2780 Oeiras, Portugal.

Ms Lisette Schoonhoven, University Medical Center Utrecht, Julius Center for Health Sciences, HP001.335, PO Box 85500, 3508 GA Utrecht, The Netherlands. Tel: +31 30 250 9301, Fax: +31 30 250 5480
l.schoonhoven@jc.axu.nl

Dr Wayne Schroeder, 8023 Vantage Drive, PO Box 659508, San Antonio, 78265-9508 Texas, USA. Tel: 001 210 554 5396
Fax: 001 210 255 6988 schroedw@kci1.com

Mrs Eileen Scott, Professorial Unit of Surgery, North Tees & Hartlepool NHS Trust, Stockton on Tees, TS19 8PE, England.
Tel: 01642 624087 Fax: 01642 624165

Mr Tony Seaney, Niaraga Holdings plc, 88a High Street, Shoreham-by-Sea, West Sussex, BN43 5DB, England.

Dr Joseph Selkon, 4 Ethelred Court, Oxford, OX3 9DA, England.
Tel: 01865 764098, Fax: 01865 764098

Dr Zina Serafim, R.D. Estefania 5–3° D, Lisboa, Portugal. 1150–120.
Tel: +351 1 354 9154

Mrs Catherine Sharp, 3 Salisbury Street, South Hurstville, Sydney 2221, Australia Tel. & Fax: +61 2 958 50393 Tel: +61 2 938 53588
Fax: +61 2 938 51086 catherine 410@hotmail.com

Miss Helen Shearer, 164 Scalby Road, Scarborough, North Yorkshire, TO12 6TB, England Tel: 01723 3754525 hcs164@hotmail.com

Mr Andy Smallwood, NHS Purchasing & Supply Agency, 80 Lightfoot Street, Chester, CH2 3AD, England. Tel: 01244 586807 Fax: 01244 586828
andy.smallwood@doh.gsi.gov.uk

Ms Helen Smyth, Anglia Polytechnic University, School of Healthcare Practice, 24 Park Road, Chelmsford, Essex CM1 1LL, England
Tel: 01245 493131 (x 4142), Fax: 01245 250368 h.smyth@apu.ac.uk

Mr Javier Soldevilla, Agreda Avda de Navarra, 8-10, 4-D, Logrono, 26001, Spain. Tel: +34 41 251 392, Fax: +34 41 22 03 44

Mr Steve Spurgin, Smith & Nephew Medical Ltd, PO Box 81, Hessle Road, Hull, HU3 2BN, England. Tel: 01482-673742 Fax: 01482-673106

Mrs Julie Stevens, 11 Portland Road, Ashford, Middlesex, TW15 3BU, England. Tel: 01784 242312 Work: 020 8321 2435 Fax: 020 8321 2272

Mrs Fiona Stephens, 16 Strangford Rd, Tankerton, Whitstable, Kent, CT5 2EP, England. Tel: 07711 479668 fiona.stephens@rcn.org.uk

Dr Thomas Stewart, Gaymar Industries Inc, 10 Center Drive, Orchard Park, NY-14127, USA

Mrs Lesley Stockton, Department of Psychology, Manchester University, Oxford Road, Manchester, England Tel: 01942 682217,
Fax: 01942 681995 otlesely@yahoo.co.uk

Mrs Varda Swager, Hoshav Serufa Doan Nah, Hof Ha Carmel, 30850, Israel.
Tel: +972 4984 2928 Fax: +972 4854 2750

Dr Ian Swain, Dept of Medical Physics and Bio. Engineering, Salisbury District Hospital, Salisbury, SP2 8BJ, England. Tel: 01722 336262 (x 4065), 425263

Ms Anna-Britta Tallberg, Vaksala Svia, 75594 Uppsala, Sweden
Tel: +46 18 31 7412, Fax: +46 18 611 2460

Mrs Adrienne Taylor, Salford Community Health Care NHS Trust, The Willows Centre for Health Care, Lords Avenue, Salford M5 2JR England.
Tel: 0161 737 0330 Fax: 0161 745 8042

Dr M Barend ter Haar, BES Rehab Ltd, 9 Cow Lane, Fulbourn, Cambridge, CB1 5HB, England. Tel: 01223 882105, Fax: 01223 882105
b.e.s.rehab@btconnect.com

Mrs Susan Thomas, 3 Tylston Meadow, Liphook, Hants, GU30 7YB, England.
Tel: 01420 488999, Fax: 01420 489009 clinical@crownmed.co.uk

Ms Jean Thomson, 9 Goddards Lane, Aldbourne, Marlborough, Wilts, SN8 2DZ, England.

Mr Tore Tomter, Tordivelen 20, Hamar, N-2316 Norway.
Tel: +47 625 26272, Fax: +47 625 21211 tore@togemo.no

Dr Joan Enric Torra i Bou, Galle 5. Bis, Barcelona, 08021, Spain.
Tel: +34 3 731 0474

Mr Bart Van der Heyden, Slagmanstraat 48, 9080 Lochristi, Belgium.
Tel: +32 (0)9356 7222 Fax: +32 (0)9356 6915
bvanderheyden@attyglobal.net

Mr Edwin Van der Zee, Krommekamp 232, Harderwijk, 3848 DT, The Netherlands Tel: +31 341 4189214, Fax: +31 341 422957
vanderzee@globalxs.nl

Mrs Tracy Vernon, Doncaster Royal Infirmary, Armthorpe Road, Doncaster, Yorks, DN2 5LT, England. Tel: 01302 366666 (ext. 3359) Fax: 01302 320098

Dr Senen Vilaro Coma, Facultat de Biologia, Department de Biologia Celular, AVDA Diagonal 1645 1o Planta, 08028 Barcelona, Spain. Tel: 00 34 93 402 1550, Fax: 00 34 93 411 2967

Ms Heidi Vrijdagh, Huntleigh Healthcare, Stapelplein 70, 9000 Gent, Belgium
Tel: +32 9 265 8770, Fax: +32 9 265 8771
heidi.vrijdagh@huntleigh-healthcare.be

Ms Ann-Brigitte Vugelsang, Bogfinhevg 8, Hinnerup, 8382 Denmark.
Tel: +45 86 91 2811 anne-brig@hotmail.tele.dk

Ms Anna Watson, 72 The Paddocks, Hybreasal, South Circular Raod, Kilmainham, Dublin 8, Ireland. Tel: +353 1 473 1605

Dr K-G. Werner, Compliance Network Physicians/Health Force Initiative, P.O. Box 02 12 45, Berlin, D–10123, Germany.
Tel: +49 30 2472 1772, Fax: +49 30 2472 1773

Jan Weststrate, University Hospital Rotterdam, Room Z–646, P.O. Box 2040, Rotterdam, 3000 CA, The Netherlands.
Tel: +31 10 463 4237, Fax: +31 10 463 4234

Miss Emma Wheat, 89 Llanishen Street, Heath, Cardiff, CF14 3QD, Wales, UK
Tel: 02920 404729 ewheat@uwic.ac.uk

Mr Arthur Wheeler, 1 Samsworth Close, Castor, Peterborough, Cambs. PE5 7BQ, England. Tel: 01733 380774

Ms Ada Wimmers, Boveny Ziekenhuis, Statenjachtstraat 1, 1034 CS, Amsterdam, The Netherlands. Tel: +31 20 634 6346, Fax: +31 20 634 6730

Mrs Ann Withington, 10 Barnfield Crescent, Wellington, Telford, Shropshire TF1 2ES, England. Tel: 01952 641222

Dr Helene Wolff, Fyra Dalersgatan 32, 41319, Sweden Tel: 00 46 342 1000

Mrs Frances Worboys, 2 The Poplars, Cheshunt, Herts, EN7 6AR, England.
Tel: 01992 626100

Ms Trudie Young, School of Nursing, Glan Clwyd Hospital, Bodelwyddan, Denbighshire, LL18 5UJ, UK Tel: 01745 583910 Fax: 01745 534960

Mr Arkadiusz Zbronski, ul Kasztanowa 27, Olsztyn, 10–156 Poland.
real@real.olsztyn.pl

Mr Ireneusz Zbronski, ul Kasztanowa 27, Olsztyn, 10–156 Poland.
real@real.olsztyn.pl

Mr Jintiene Zeilstra, Academisch Zienhuis Groningen, Postbus 30001 Groningen, Secretarial Dermatologie TI 250, 97008 B, The Netherlands.
Tel: 00 31 50 361 2520 Fax: 00 31 50 361 2624 j.t.zeilstra@derm.az.nl

EUROPEAN PRESSURE ULCER ADVISORY PANEL

Membership Application Form, 2002

MISSION STATEMENT

The European Pressure Ulcer Advisory Panel's objective is to provide the relief of persons suffering from, or at risk of pressure ulcers, in particular through research and the education of the public. **The European Pressure Ulcer Advisory Panel is a registered charity, number 1066856.**

MEMBERSHIP APPLICATION **PLEASE PRINT CLEARLY**

Name: _____ _____ _____ _____

Title (Prof, Dr, etc) *First name* *Last Name* *Degrees*

Full Postal Address: _____

_____

_____ Postcode: _____ Country: _____

Tel: _____ Fax: _____

E-mail: _____

Main fields of interest: _____

_____

_____

Membership fee: **£30 per year** (September – September)
Which includes Certificate of Membership plus the *EPUAP Review*

Cheques should be made payable, in British Pounds drawn on a UK Bank, to:
EPUAP Registered Charity 1066856

And application forms should be returned to:
EPUAP Office, Wound Healing Unit
Department of Dermatology, Churchill Hospital
Old Road, Headington, Oxford
OX3 7LJ, UK
Fax: +44 (0)1865 228233

Arrangements can be made for payment by **Access**/**Mastercard**/**Visa** credit cards
(*There is a £2 service charge added for this facility*)

a) Credit card type: **Access**/**Mastercard**/**Visa** (*Please delete as appropriate*) b) Amount to be debited: **£32**

c) Credit card number: _____ d) Expiry date of credit card: _____ /_____

e) Exact name and initials on credit card: _____

f) Address to which credit card statements are sent: _____

_____

_____

g) Signature to authorise debit of annual subscription: _____

Corporate Members and Sponsors of the Fourth Open Meeting of the EPUAP

3M
Augustine Medical
B. Braun Medical S.A.
ConvaTec
Cook
Frontier Therapeutics
Gaymar Industries Inc
Hill-Rom Europe
Huntleigh Healthcare
Paul Hartmann AB
Johnson & Johnson
KAYMED
Mölnlycke Healthcare AB
Nutricia Healthcare
Pegasus Ltd
ROHO
Smith & Nephew
Tempur U.K. Ltd
URGO

Designed and produced by John Brennan at the Positif Press, Oxford
Tel: +44 (0)1865 243220 Fax: +44 (0)1865 243272
Printed by Oxuniprint at Oxford University Press

ISSN 1464–7796