Aim: The aim of this work is to review currently available mobile device apps for wound assessment.

Method: Searches on iTunes, GooglePlay and the Internet generally were conducted (up until November 2014) using the terms ‘wound care’, ‘wound management’ and ‘wound assessment’. Apps which had a description available in English, which were wound-specific, and allowed the assessment of any type of wound were eligible for inclusion. This work was supported by a Manchester Integrating Medicine and Innovative Technology (MIMIT) Innovation Award.

Results / Discussion: A total of 49 apps were initially identified. From these, 34 were excluded as they were not wound specific; or were only focused on providing information on types of wounds, were teaching aids for nurses/health professionals, or offered wound-related product information. Of the 15 remaining wound-specific apps, 8 were free of charge to access, whilst those with a cost ranged from £0.69-£27.99. Eleven allow photographs of the wound to be taken; ten allow transmission of the image from the clinician to the electronic patient record, and five allow transmission between the patient and the clinician.

Conclusion: A range of mobile device apps are available which provide useful information and facilitate wound assessment. However, very few apps exist which permit the transfer of clinical images or data between patient and clinician. The development of this type of technology may prove useful in aiding diagnosis and clinical decision making, as well as in the surveillance of post-operative wounds.
FIRST NATIONAL EXPERIENCE OF A MULTIDISCIPLINARY E-HEALTH PLATFORM FOR HIGH QUALITY WOUND CARE ADVICE AND TREATMENT

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Thursday, May 14, 2015

E-poster session: e-Health, Home Care, Nutrition, Pain

Aim: Increasing number of elderly patients presenting complex chronique conditions in conjunction with skin lesions and wounds has lead to raising needs for tissue viability specialist remaining insufficient. The required interdisciplinary approach and necessary communication between professionals represent additional obstacles. To respond to these difficulties and increase the effectively of wound care, a multidisciplinary e-health solution was developed.

Method: A telemedicine software application was developed allowing standardized documentation of wounds accessible to all implicated professionals. In addition, through this secured e-health platform, non specialized medical staff or even patients are able to ask for a multidisciplinary evaluation of a wound by submitting precise information, then initiate the proposed treatment and receive the necessary materials at home. An e-health follow-up or proposal for a visit to the specialized wound center completes the offer permitting an individualized and effective approach. The e-health developed platform was evaluated with regards to patient’s satisfaction, acceptance to implicate medical staff and efficacy of delivered services.

Results / Discussion: High patient satisfaction and acceptance is achieved as well as implication and motivation by the team. This interdisciplinary combined e-Health tool permits reduction on the time required to access specialized wound care and allows to rapidly initiate a care plan or adapt the existing one.

Conclusion: We believe that a multidisciplinary e-Health platform is a good support to effective modern wound care and should be offered by all specialized wound care centers.
Aim: To assess the performance of nursing students in a knowledge test before and after their participation in a distance learning module on topical therapy for “skin anatomy” and “chronic wounds healing process” using a Virtual Learning Environment*.

Method: Quasi-experimental (pre and post-test) study with a quantitative analysis.

Results / Discussion: Study participants were 37 students from the last year of the Nursing Undergraduate Course in a public higher education institution in Brazil, 95% female, mean age of 23.16 years. The total percentage of correct answers relating to questions about "skin anatomy" before and after the course "Topical therapy for chronic wounds" was 61.6% in the pretest and 70.3% in the post-test. While the overall percentage of correct answers on "healing process" in the pre and post-test increased respectively from 58.9% to 64.6%. There was a statistically significant increase in the mean number of correct answers obtained in the knowledge test after the intervention, and the students had lower performance on specific issues for the healing of chronic wounds.

Conclusion: The findings indicated gaps in the knowledge of students about the items assessed "skin anatomy" and "healing process" of chronic wounds. The use of the Virtual Learning Environment* may constitute a support strategy to strengthen and broaden the access of nursing undergraduates to knowledge on relevant themes for the nursing care.

* VLE Moodle
In the hospital of Paimpol 50 kilometres far away from the main town of the department Saint-Brieuc, we have developed a consultation then a specialised station of chronic wounds, now fourteen beds and soon sixteen. This was particularly possible through the development of synchronized telemedicine. Thanks to synchronized telemedicine, a vascular surgeon specialised in chronic wounds can help the doctors who take care daily of the in-patients to solve the different problems of dressings, pain, etiology etc.

Synchronized telemedicine consists of a visit in the Paimpol hospital through a videoconference station which can be transported from room to room as if the surgeon was present and a consultation for ambulatory patients, conduced the same way: the surgeon asks the patient about pain, walking, etc. then analyses the wound through the high definition camera the nurse holds which can show the different aspects of the wound. The surgeon at Saint-Brieuc has a laptop computer which is connected to the patient file where she can write her conclusions and prescriptions.

At this time about 1800 consultations have been realised. Only one person asked for a classic consultation. This is a very positive experience for the patients near Paimpol who can be seen by a specialist without leaving their town and for the surgeon remaining at Saint-Brieuc and avoiding one and a half hour trip. Now we work to develop synchronized consultation in three others hospitals of the area.
Aim: To build and validate a "software" for evaluation and treatment of wound.

Method: Methodological Research conducted in three phases: development of a "software"; quality assessment and validation of face and content. The evaluation of quality was obtained through frequency distribution. To analyze the content validity was used Content Validity Index, considering the valid item 0.80 of agreement between judges and for face validity was used percent agreement. Participated in the study 14 nurses "experts" and 08 nurses of the Family Health Units (users). The development of "software" was due to literary references related to the topic wounds and wound dressings and computerization was performed by the layered architecture. The quality evaluation process was performed according to ISO / IEC 9126-1 establishing the quality criteria of "software".

Results / Discussion: The attributes usability, efficiency and functionality were considered very good by more than 80% of participants. In content validation all the modules presented Content Validity Index greater than 0.80 and in the face validation more than 80.0% of the judges agreed that the program modules have clarity, intelligibility and appropriate form of presentation.

Conclusion: The assessment of the quality and content and face validation suggest that the "software" is a quality tool valid for use in the nursing care setting.
Aim: The aim is to improve quality of wound treatment for patients in an outpatient setting. There are many advantages to treating patients with complex wounds in a non-hospital environment, especially if they are frail and elderly. To organize their care a wound bed preparation model was adapted and staff received education on the use of the model.

Method: Case ascertainment was used to evaluate the results obtained and cases are presented to discuss these results. For the treatment of complex wounds frequently a multidisciplinary and structured approach is required. The wound bed preparation model was implemented involving the different disciplines.

Results / Discussion: The aim of wound bed preparation is to create an optimal wound-healing environment with a well vascularised wound bed, removing necrotic tissue and effectively managing exudates. For debridement a monofilament debrider* was used which was wetted with either saline or an antibacterial and algaecide** depending on the wound bed condition. If required, such as in venous leg ulcer and lymphedema patients the skin was also debrided, removing scales. For exudates management a super absorbent dressing*** or a foam dressing**** was used. If required compression was applied using a rigid system*****; a two-layer cohesive system****** or a tubular******* compression system.

Conclusion: Communication is key when organizing effective wound management. The adapted wound bed preparation model showed to be a useful tool for organizing wound treatment in an outpatient setting.

*Debrisoft
**Polihexanide
***Vliwasorb
****Suprasorb P
*****Rosidal sys
*******Rosidal TCS
********Actico Silk
They are all products of Lohmann & Rauscher
[EP280] COMPLEX WOUND CARE IN LIMBURG-BELGIUM, RESULTS OF THE SURVEY OF HOME CARE NURSES.

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Thursday, May 14, 2015

E-poster session: e-Health, Home Care, Nutrition, Pain

Aim: This study examined three problems related to complex wound care in the home care setting. The problems which can be found in the literature, do they actually occur in Limburg? (Belgium)

• Is there a lack of knowledge at the home care nurses about wound care?
• Is there a multidisciplinary approach by the home care nurses to wound care?
• Does the financial compensation covers the cost of the work done or not?

Method: Through an online survey were 391 home nurse asked about the above problems.

Results: The basics of wound care can do much better, 60% of respondents had less than 73% correct answers on the test. Nurse scored particularly poorly on the knowledge questions about pressure ulcers, venous and arterial ulcers. This kind of complex and specific wounds is nevertheless regularly cared for by the nurses. Nurses who have completed the training for wound care nurse reference score significantly better on the knowledge test. Most of the wound care treatments are set by the general practitioner and physician specialists. Almost everyone gets by trouble with a wound care help of the reference nurse or wound care specialist. Home nurses who have completed advanced training, have less people to ask for help than nurses who do not attend training. For each type of wound care, there are 18 financial scenarios elaborated. We have namely (3 estimates of the time of a treatment) X (3 estimates of the displacement time) X (2 estimates of the cost).

Conclusion: The basic knowledge on wound care can be better. There is need for an adapted nomenclature for complex and specific wound care.
Aim: Wounds are a major problem to patients and health care systems, global population is aging rapidly, corresponding to an increasingly elderly population and an increase in the number of individuals with chronic disease, which is likely to grow further in future. The prevention of avoidable health-related complications, such as pressure ulcers is more important than ever. Rights to health care are realized generally poor level satisfaction among citizens. One of the key problems is reflected in the fact that the educational system in Bosnia and Herzegovina is not in accordance with the requirements of the labour market. The aim of the education programme (VCC Academy - Elderly Care) is the development and promotion of the theoretical knowledge and skills necessary to the holistic approach to the offering of care services to patients with chronic wounds as in the stationary institution, primary health protection and house care conditions. The complex needs of individuals with wounds, and therefore health professionals, social caregivers, and family members should be included in the care team with the patient at the centre of all decision-making. A holistic, interdisciplinary approach in wound care will help improve a patient’s quality of life, manage symptoms and offer treatment of chronic wounds and conditions.

Method: Education program including:

- Basic service of adult care, senior citizens and persons with disability. Maintaining personal hygiene, complete care for the immobile and heavily mobile patient, environment, family training, bathing the immobile or semi – mobile patient in the bed or in a bathtub, daily and weekly personal hygiene to the patient, bathing, hair washing, hygiene of the mouth cavity, nail clipping, changing clothes to the patient, sorting the patient’s bed, changing swaddling bands
- Services of care with special competences: 1. An overview of wound care and how treatment needs to be both palliative and curative; 2. The importance of addressing wound pain; 3. Options for wound treatment that assist in odour control; 4. Ways wound treatments can help control infection

Results / Discussion: 1. Implementation EU Program of Home Care in the Bosnia and Herzegovina; 2. Improving Quality of life for patients and for their members of family; 3. Health Service at the patients with Chronic wounds; 4. Cost benefit for patients and society; 5. Possibilities of Cross Boarding Collaboration.
Conclusion: The implementation of the EU Program of Education (VCC Academy for Elderly Care), which participated in II European Business Forum on Vocational Training, which was organized by the European Commission in Brussels, decreasing unemployment among young people and improving the cooperation between the education sector and the business world presented the latest research on competence gaps between education system and the labour market in Europe, is the investment to the future of AWMinB&H.
There are over 1300 different Home Care organizations in the Netherlands, all with different methods of working. One of the largest groups has become quite famous due to their innovative approach of delivering homecare by small self-managing teams. This approach as proven to be both cost effective and very popular by everyone involved.

Aim: Pilot study to standardise and minimise the number of wound care dressings in homecare environment regardless of organisation. Polymeric membrane dressings (PMDs) were chosen as they are versatile and can be used on a large variety of wound conditions.

Method: Two different homecare groups participated. Several different wound types were included. We looked at healing and ease of use as well as the cost of treatment. The TIME model was used to create a common base. Dressing changes were performed at home, usually 2-3 times a week.

Results / Discussion: The nurses found the dressing easy to use and time saving as there was often no need to cleanse the wound at dressing changes due to the built in wound cleanser. Many of the patients commented on pain relief. Debridement seemed faster than normal and no wound infections were observed.

Conclusion: In spite of the different methods of working depending on which homecare organisation was involved, it went very smoothly to only use PMDs on all their wounds. The main issue were the pharmacists that sometimes expedited other dressings claiming they were “the same”. This sometimes caused stalled healing until the correct dressing could be used again.
THE INSERTION OF A NOVEL SUPER-OXIDIZED SOLUTION ON TOP OF STANDARD TREATMENT IN THE HOME CARE MANAGEMENT OF POST-SURGICAL LESIONS OF THE DIABETIC FOOT REDUCES RE-INFECTIONS AND SHORTENS HEALING TIMES

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Thursday, May 14, 2015

E-poster session: e-Health, Home Care, Nutrition, Pain

Aim: We investigated if a novel superoxidized solution (SOS) characterized by free chlorine species with stabilized hypochlorous acid (HClO) in high concentration (>95%) combined with acidic (pH<3) and oxidizing features (RedOx 1100mV)*, on top of standard treatment, is safe and effective in reducing re-infections in post-surgical DFU.

Method: We studied 25 consecutive DF outpatients (Group A; 22 Type 2/3 Type 1; Age 67.3±12.1 yrs, Duration of diabetes 14.7±9.9 yrs; HbA1c 7.9±1.1%) recently dismissed by our department with a post-surgical, non-ischemic and non infected lesions (area 8.9±6.5 cm²) left to heal by secondary intent. Patients were followed on an outpatient basis, with monthly control visits. All the patients were instructed to deliver one spray of SOS every 2 cm² of the DFU’s area at any dressing change. Patients, compared to a saline-managed group (Group B), were followed up to complete re-epithelisation or for a maximum of 6 months and the number of re-infections (RI) was taken as primary endpoint. Secondary endpoints were number of debridement procedures (DP), healing rate (HR) and healing time (HT).

Results / Discussion: All patients completed the study. Group A had significantly less RI (3 vs 12; p<0.05), less DP (1 vs 10; p<0.05), and a faster HT (64.9±43.8 vs 147.4±88.8 days; p<0.01) than Group B; no difference in HR and adverse events was observed.

Conclusion: The novel SOS solution provided an effective protection against re-infections in DFU patients, reducing the necessity of DP and possibly fastening their HT, with a safety profile similar to saline solution.

*Nexodyntm (APR s.a., Balerna, CH)
Aim: In Home Care, necrosis removal is a most challenging treatment phase. In many clinical situations a surgical procedure is impossible, as is referring the patient to an outpatient clinic or to hospitalization. Various factors influence the topical treatment choice: The patient’s clinical conditions, his/her living environment and the dressings/materials available to the nurse. One of the most commonly used home care dressings is a non-adherent viscose dressing impregnated with propylene glycol (PEG) containing 10% povidone-iodine (PVP-I). It has reduced costs, but requires frequent changes: therefore several visits by the nurse.

The study objective is to demonstrate that by using a bacterial binding (DACC), hydrogel impregnated acetate dressing**(A), the dressing change frequency is reduced and necrosis removal is faster than by using the PVP-I impregnated dressing*(B).

Method: The two dressings have a different mode of action: the hydrogel impregnated dressing with DACC is a new concept of antibacterial product which acts without releasing in the wound an active ingredient. The viscose gauze dressing impregnated with PEG containing the disinfectant PVP-I has a wide antimicrobic action.

The study population is patients with necrotic wounds of varying sizes, and situated in different body parts. 30 patients are recruited for each group of dressings. Endpoints are frequency of dressing changes and time of necrosis removal.

Results/Discussion:

- Group A: Dressing change: 2/week; Necrosis removal: Average 15 days
- Group B: Dressing change: 2/week; Necrosis removal: Average 30 days

Conclusion: Using the advanced, hydrogel-impregnated, bacterial-binding dressing optimized nursing time and resulted in faster necrosis removal, compared with the standard treatment.

*INADINE®

**Cutimed®Sorbact® gel
EP285 COMPLETING THE AUDIT CYCLE – A COMMUNITY WOUND CARE AUDIT REVISITED

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Thursday, May 14, 2015

E-poster session: e-Health, Home Care, Nutrition, Pain

Aim: In 2012 the authors presented the 2011 results of a community wound care audit¹. To complete the audit cycle, re-audit was completed in May 2014. This presentation compares key results and highlights further action points.

Method: Audit. Working with industry* information sessions delivered to staff in four Community Health Partnerships. Over a 4 week period, a data form was completed for each wound identified and updated if the dressing choice changed. Completed forms were collated and put through a systems data base to capture the information.

Results / Discussion:
2014 – 2036 wounds
2011 – 2177 wounds

- Pressure ulcers reduced
- Improved wound infection identification
- Reduction in all antimicrobial dressings
- Formulary compliance improved and within 80/20 expectation

Areas identified by the audit which could be improved were:
- Review provision of leg ulcer assessment. Leg ulcer numbers significant in chronic wound group (>13weeks). Consider possible cause of these wounds not improving.
- Local wound barriers. Appropriate referral
Conclusion: Clinical audit provides a cycle of continuous improvement and allows clinicians to benchmark their own practice and compare their performance against set standards. It is an integral component of clinical governance, and contributes to meeting the requirement of “Leading Better Care – Delivering for Patients”\(^2\). The results of the audit will be disseminated to the staff who participated, and to other key stakeholders.

*Convatec

1) Primmer L, Ropper R. (2011) NHS Community Wound Care Audit: Working in partnership with industry to clinically and cost effectively improve services, Poster Presentation at EWMA

Aim: The aim was to investigate whether a disease-specific nutritional intervention for treating chronic limb wound associated with diabetes is more beneficial than the standard care alone.

Method: In the test group were 11 patients in the control group were 10 patients. Average age of 62 years. Patients had been also previously treated with trophic disorders associated with diabetes. It was a three-month, follow-up, observational trial. In the test group the patients consumed 400 ml disease specific formula per day. Pictures had been taken about wounds and test sheets filed in about the most significant changes on a monthly basis.

Results / Discussion: The test group: Average wound size was at the beginning 10.2 cm², and after 3 months 1.53 cm². Average wound circumference at the beginning was 12.23 cm, while after 3 months 4.49 cm. Full healing in the case of 4 patient (92-100%). Control group: Average wound size was at the beginning 11.89 cm², and after 3 months 12.27 cm². Average wound circumference at the beginning was 14.21 cm, while after 3 months 14.56 cm. We recorded stagnation or worsening (5-140%) in the case of 7 patients. In the test group who received nutritional therapy, we observed the improvement of the wounds in the same weather conditions and the general condition and exercise capacity of patients also improved.

Conclusion: The standard chronic wound therapy combined with nutrition therapy is more beneficial than alone the standard therapy for treating chronic limb wound associated with diabetes.
Aim: To identify the benefits to patients and clinicians when using Silicone Medical Adhesive Removers as part of the dressing change regime. The study was in line with recommendations from the International Best practice Guidelines for skin and wound care in EB*.

Method: This study looked at how use of Silicone Medical Adhesive Removers impacted on patients, their family members and clinical professionals involved in their care. It was carried out with the EB Nursing teams in the UK, the Netherlands, Spain and New Zealand.

Factors considered were:

- Reduction in time taken for dressing changes
- Reduction of skin stripping
- Enhancement of patient experience of dressing changes

Results / Discussion: The results indicate that the use of SMARs had a positive impact on the respondents in regard to all of the areas investigated and this has been the experience of all respondents across the countries involved. It also highlighted the progressiveness of EB clinicians’ attitudes regarding dressing change practice as well as the collaborative working practices of specialist nurses across the world.

It is expected that the results of this study will provoke questions being asked as to why such products as these with subsequent benefits are not being employed for general wound care.

Conclusion: SMARs have an important part to play in reducing pain and trauma at dressing changes for patients with Epidermolysis Bullosa.

*Results identified in ‘Improving the patient Experience using finoderm Protect and finoderm Release’ - J Griffin, Wounds UK 2014
Aim: Pain is a subjective, complex and unpleasant sensation. Pain at wound dressing or special dressing procedure was unavoidable. This study is to determine the efficacy of pain control with anesthetic spray* during instrumental debridement.

Method: It was a prospective, double-blinded control study with two groups - control and study groups. This study was conducted in Anne Black Out-patient Wound Clinic from June to December 2013. Patients who had partial/deep partial thickness wounds with over 5/10 score in horizontal colour Numeric Pain Rating Scale (NPRS) and required to have instrumental debridement, either scraping by blunt forceps or trimming necrotic tissue by scissors, were eligible to be the study cases. If patient agreed to join the study after receiving explanation, verbal consent was collected. Patient could be stopped from the study for any adverse effect. Surgical wound, ischemic ulcer and neuropathy wound were not included. Illiterate was also excluded.

Before instrumental debridement, all cases' pain score were measured by an assistant using NPRS (0-10). One minute before procedure, 5 anesthetic spray* was sprayed over the wound bed for all study group cases, while the control group cases used 5 normal saline (NS) spray instead.

Results / Discussion: Total 30 cases were recruited, age from 37-80 (14 males; 16 females), 15 cases were assigned to control group and 15 cases belonged to study group. For control group, their mean age was 59.7 (SD±2.9) and the study group was 61.3 (SD±3). No patients quit during the study.

Anesthetic spray* significantly decreased the NPRS score from the mean 8.6±0.27 before treatment to 6±0.24 at post procedure, whereas control group from 8.8±0.2 to 8.6±0.13. In 15 patients in study group, the number of patients who NPRS scores decreased by ≥2 were 13 (86.7%). However, in control group, the NPRS score decreased by ≥2 was 0%. The reduction is highly significant in study group compared with the control group (30% vs 4.5%).

Table: 1 Horizontal Colour Numeric Pain Rating Scale; Control group vs Study group

<table>
<thead>
<tr>
<th>NPRS score</th>
<th>Control Group</th>
<th>Study Group</th>
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<tbody>
<tr>
<td></td>
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<tr>
<td></td>
<td>Control Group n=15</td>
<td>Study Group n=15</td>
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<tr>
<td>----------------</td>
<td>---------------------</td>
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<tr>
<td><strong>Pain before procedure Mean (SD)</strong></td>
<td>8.8 (+0.2)</td>
<td>8.6(+0.27)</td>
</tr>
<tr>
<td><strong>Pain after procedure Mean (SD)</strong></td>
<td>8.6(+0.13)</td>
<td>6(+0.24)</td>
</tr>
</tbody>
</table>

Colour NPRS 1-10 ;0: No pain; 10: Severe pain

**Conclusion:** Anesthetic spray* spray is a safe; convenient and effective measure for pain relief during instrumental debridement. It can decrease the patient discomfort and increase the effectiveness of treatment. The direct benefit of pain relief on wound healing rates still requires more detailed study in future.

* Xylocaine (10%) spray