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Understanding "undisturbed wound healing" in clinical practice – a global survey of healthcare professionals

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Summary (60-100 words giving brief outline of content)

This paper presents data from a global survey that explored wound care professionals' understanding of the concepts, "undisturbed wound healing" and "dressing wear time" and evaluated whether this understanding is related to respondents' geographical location, profession or specialty. The type of wounds treated, typical and maximum length of time that a dressing is worn, and dressing change frequency were also explored. Knowledge about the meaning behind the two concepts was poor in almost 50% of respondents, suggesting clinical practice and provision of evidence-based wound healing principles vary significantly and further investigation as to how knowledge of these concepts impacts clinical practice is warranted.

(96 words)

It is generally accepted that a moist environment provides the optimal setting for wound healing and new tissue formation (Wokalek & Ruh, 1991; Sharman 2003). Wound care is costly (Ubbink et al, 2014) and selection of the most appropriate treatment option is not always straightforward, but necessarily involves maximizing the patient's and wound's healing capacity without interrupting or traumatising the healing process. "Undisturbed wound healing", a relatively new concept, is now widely referred to in the clinical management of both acute and chronic wounds (Stephen-Haynes, 2015), though a recent focus group and survey of wound care providers suggested that the meaning of this phrase was perceived differently from clinician to clinician (unpublished data). In a recent literature review, Brindle (2019) explored the themes of undisturbed wound healing and proposed four key considerations that should guide its practical application and improve outcomes: the patient, the caregiver, care of the wound and economics (Box A). In the selection of wound dressings, the healthcare provider (HCP) should take into account how the products will impact the wound, the patient and their caregiver's response to care, the provider's time and resource allocation and the total cost of care (Davis 2015; Brindle 2019).

Survey rationale

HCPs' understanding of and engagement with the processes involved in undisturbed wound healing can directly influence the outcome of treatment. To date, there is little evidence of the understanding and views of HCPs with regard to undisturbed wound healing and various other terms, such as "stay-on-ability" and "extended-wear-time." Following feedback from clinicians with regard to the use of Mepilex® Border Flex (Comfort) (Rook et al, 2019), the authors decided to conduct an online survey which would be aimed at wound care professionals worldwide, to assess their understanding of these terms and how they applied these in their clinical practice. We hoped that the data might identify factors that are important in relation to the delivery of undisturbed wound healing and which might inform the development of future wound management guidelines.

Materials and methods

The survey and questions were designed by Mölnlycke Healthcare (Gothenburg, Sweden), generated using the online platform, Survey Monkey (www.surveymonkey.com). Emails to raise awareness of the survey among wound care practitioners worldwide were sent out to all subscribers of Wounds International/Wounds UK journals, by the publisher OmniaMed Communications (London, UK; a medical education company) and, additionally, an e-blast (large number of emails) was sent out to all subscribers of HMP Communications (Malvern, PA 19355, USA; a healthcare communications and education company, publishing medical journals across a range of medical specialties). The 13-question survey (not all respondents were required to answer Q8) went live on 8 November 2018 and data were collected up to and including 18 January 2019. A draft of the survey can be found online as part of the Supplementary material to this paper. Basically, respondents were requested to provide their profession, speciality, geographical location and practice environment(s). Respondents were also requested to report types of wound encountered, dressing change frequency and the factors and challenges influencing it, and typical and maximum number of days that a dressing on a wound of a given type would be left in place. Separate information was elicited for non-infected and infected wounds. Responses to these items were summarised across all wound types for comparison across profession, geographical region and speciality. Respondents were also requested to report their understanding of the terms "dressing wear time" and "undisturbed wound healing".

Statistical analysis

Low frequency-categories were combined for use in analyses of variance (ANOVA), to assess the significance of any differences in responses in different levels of the factors represented. A series of χ^2 -squared tests for association were conducted on the data, using knowledge level as the outcome, and considering all geographical, professional, speciality and practice environmental factors as predictors. Any factor indicating a substantive relationship with the outcome was carried forward into a multiple logistic regression analysis. Variables in this model showing no substantive relationship with the outcome were removed to recast the final model as a parsimonious model.

Results

Descriptive summary

Data were collected from a maximum of 1673 respondents, representing a response rate of XX% Not all respondents answered all of the questions they were required to respond to. Most respondents came from Australia/New Zealand, the British Isles or North America: these three regions amounted to about 80% of all responses (Table 1, Figure 1). Of the respondents, just under 80% were nurses (including specialist nurses, such as tissue viability nurses (TVNs), nurse educators etc.) with smaller numbers of doctors (7.4%) (including surgeons) and allied health professionals (AHPs) (7.3%) (mostly podiatrists; also physiotherapists and other health professionals) also responding. Small numbers of other professions were represented, including, for example, care assistants and marketing managers.

The most common specialities were wound care (35.9%) and home care (12.6%). Around 24% of all respondents did not choose any of the available options (summarised as *Other* in Table 1). Stated specialities among these respondents included a large number of low frequency responses, such as community nurse, orthopaedic nurse, aged care, oncology etc. The most commonly stated practice environment was a hospital ward or department (35.2%), with patients' homes also commonly recorded (28.6%). Respondents reported treating several wound types. The most commonly reported wound type was a superficial pressure ulcer, reported by 923 (55.2%) of respondents. Many other wound types, including diabetic foot ulcer (DFU), venous leg ulcer, mixed leg ulcer and skin tear, were seen by around 50% of respondents. Full thickness/3rd degree burns were treated by only 13.4% of respondents (n=225).

Typical and maximum lengths of time to change dressing

Change of dressing frequency was specified in around 40% of participants' wound care protocols and sometimes specified in protocols used by about 28% of respondents. Other than the protocol, dressing change frequency was influenced by: wound exudate (type and amount), wound condition, wound odour, signs of infection and type of dressing among others (see Table 1). The typical and maximum length of time (days) for which dressings

would be left undisturbed by respondents treating different types of infected and uninfected wounds are summarised in Table 2 and Figures 2 and 3. Not surprisingly, the typical number of days that a dressing was left in place was shorter for infected wounds than for non-infected wounds (Table 2); typically, 1–2 days less than for the corresponding non-infected wound. Dressings for non-infected, closed surgical wounds (4.3 days) and skin tears (3.95 days) were typically left in place for the most days. Dressings were left in place for the least number of days for moisture lesions (2.05 days) and deep pressure ulcers (2.21 days). There was less variation in the length of time dressings were left in place on infected wounds; around 2 days was typical for all types of wound, with the shortest length of time being 1.58 days for 3rd degree burns. The types of non-infected and infected wounds on which dressings were left for the shortest time were 3rd degree burns, moisture lesions and deep pressure ulcers.

The mean typical wear time for non-infected and infected wounds from the key geographical areas and from respondents of different professions and specialities is summarised in Tables 3 and 4, with key parameters from the ANOVA procedures.

Differences in wear time were statistically significant (P<0.001) for both infected and non-infected wounds, by geographical region, profession and specialty (Figures 4–6). Longer wear times were recorded by respondents based in the British Isles and Europe; by AHPs and by those who were not recorded in the main professional categories and by podiatrists. This latter finding may reflect the specific and limited types of wounds generally treated by podiatrists. The narrow confidence intervals for the wear times reported by nurses and wound care specialists (Figures 5 and 6) reflect the large number of the survey sample who were wound care nurse specialists.

Understanding of dressing wear time

Respondents were able to select more than one option for their understanding of 'dressing wear time' as there was no, one 'right' or 'wrong' answer (Table 5). The greatest proportion (59.1%) of respondents selected "the length of time a dressing is serving a purpose (e.g. antimicrobial action, moisture absorption, etc.)" Around 30% of respondents selected "the length of time a dressing remains in situ, which is often dictated by multiple factors". Just 63/1673 respondents (3.8%) did not really know the meaning of dressing wear time.

Understanding of undisturbed wound healing

Knowledge of the meaning of the term: "undisturbed wound healing" was recorded as *Poor* in 796 respondents (47.6%); and *Good* in 877 respondents (52.4%). The two options with the most "agree/strongly agree" responses were "Undisturbed wound healing is promoting a moist healing environment that avoids maceration and wound desiccation" and "Undisturbed wound healing is minimising the need for frequent dressing changes and leaving the dressing in situ for as long as possible"

Relationship between knowledge of undisturbed wound healing and geographical location, profession and practice environment

A geographical location of Australia/New Zealand or the British Isles; professional categories of *Nurse* and *Other* (i.e. not doctor or AHP) and practice environment of *Hospital outpatient clinic* were revealed to be significantly related to the outcome in the screening χ^2 tests for association. These factors were carried forward for inclusion in a multiple logistic regression model. All factors in this model were substantively associated with the outcome, so no further refinements were made to the model. Model parameters are summarised in Table 6.

The odds of good knowledge about undisturbed wound healing in respondents based in Australia or New Zealand were about 28% higher than the corresponding odds in respondents based elsewhere in the world. The odds of good knowledge of undisturbed wound healing in respondents who were not categorised as nurses, doctors or AHPs was about 50% lower than the corresponding odds in respondents who were categorised in one of these professions. The proportion of respondents with good or poor knowledge of undisturbed wound healing is summarised in Figures 7 and 8, with respondents partitioned by those who were based in Australia/New Zealand or elsewhere; and by those who were nurses, doctors or AHPs or who had other categorisations.

Discussion

To our knowledge, this is the first survey to evaluate the understanding and views of HCPs worldwide in relation to the wound care concepts, 'undisturbed wound healing' and 'dressing wear time'.. A large number of responses were received, mainly from participants in North America, the British Isles and Australia/New Zealand, and most of these individuals

were nurses specializing in wound care, practising most commonly in a hospital ward/department or in the patient's home. The spread of data reveals that there is potential ambiguity around both of these concepts, implying that in clinical practice, all those involved in wound care need to be very clear about which attributes or aspects of care they are trying to get across. Furthermore, these findings indicate that a consensus of opinion is needed for these two concepts.

In practice, dressing wear time is related to the type of dressing used, the wound condition itself (and associated signs) and any protocol-specified change frequency. One of the aims in wound care today, is to use dressings that, once in situ, provide undisturbed healing; too many disturbances to the wound can delay healing, or even lead to adverse events that can affect the patient, such as introducing infection. Less than half of all respondents in this survey said that the frequency of dressing change was specified in their wound care protocol. If that were not the case, they used their clinical judgement to determine whether or not a dressing needed changing (for example, if the wound was malodorous). Modern foam dressings, such as the Mepilex® range (Mölnlycke Healthcare), are highly absorbent and promote a moist healing environment (Rippon et al, 2012). Mepilex[®] dressings using Safetac[®] soft silicone technology, in the contact layer, overcome the issue of damage to the wound and peri-wound tissue, while still possessing a level of adhesion that safely holds the dressing in place. The tissues remain undisturbed and are not damaged when the dressing is removed (Barrett 2012; Rippon et al, 2012). Alongside clinical improvements is the fact that if dressing change frequency is reduced, HCP resources are also reduced, ultimately leading to cost-savings.

In this survey, nurses in Australia/New Zealand appeared to have the best knowledge of the two concepts compared with nurses in other parts of the world. Globally, all wound care HCPs must take responsibility for their continuing professional development (CPD) in order to keep up with changes in wound care, such as new guidelines and concepts, changed algorithms or novel dressings. However, a 2014 literature review on nurses' knowledge of the care of venous leg ulcers showed that nurses lacked knowledge of the evidence base, such that nursing care was not conducted in accordance with the evidence (Ylönen et al, 2014).

For all types of wound care, there should, ideally, be a national wound care strategy followed by all practitioners. In the UK, however, such a strategy is still in its infancy. The

need for a national wound care strategy was acknowledged in a meeting chaired by Lord Hunt in November 2018 (Ousey, 2018) when it was deemed essential for multi-disciplinary groups, both academic and clinical, to work together to develop a strategy that could be integrated into practice to improve patient outcomes. In Australia, however, an initiative started around 25 years ago seems to have had a significant impact on wound care. In 1993, the Australian Wound Management Association (AWMA) was formed, growing to 3000 members from all disciplines involved in wound management (Sandy-Hodgetts & Sussman, 2016). Collaborating with local and global organisations, towards a national strategy for wound care, AWMA has supported the development of a variety of documents (including several sets of clinical guidelines) which have educated and guided the wound care community towards optimal practice.

This survey has several limitations: first, language barriers – the survey was written in English and it is possible that respondents whose first language was not English may have not understood or may have misunderstood some of the questions/responses leading them to respond in an inaccurate way, not representative of what they might have answered in their own language. Second, it is theoretically possible that individuals may have been able to respond to the survey more than once.

Conclusion

Given the lack of consensus on the two wound care concepts that were integral to this survey, it can be challenging for HCPs to communicate and make informed decisions regarding wound care across patient populations, particularly in light of the many wound care dressings now available. A lot of effort has gone into ascertaining the best clinical practice to support wound treatment, with "extended wear time" becoming an accepted dressing attribute key to undisturbed healing. It is now imperative for a consensus of opinion to be sought regarding "undisturbed wound healing" and "dressing wear time" so that care of the patient remains central to optimized care.

Conflict of interest statement

The survey was sponsored by Molnlycke Health Care.

Acknowledgments

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Box A. "Undisturbed wound healing:" the key considerations guiding the practical application of wound care. Adapted with permission (Brindle, 2019)

Patient acceptability and comfort – selection of a dressing that is comfortable, does not cause pain whilst worn or changed, or anxiety and stress, and which has extended wear time

Care of the wound – selection of a dressing that is gentle on the wound bed, that does not damage or adhere to the fragile tissues or extra-cellular matrix and which has effective anti-bacterial activity

Provision of caregiver confidence – selection of a dressing that permits the caregiver to see that dressing change is based on clinical evaluation (and not dressing failure) which will help to build trust between the provider, the patient and the caregiver.

Cost-effectiveness – selection of a dressing that reduces overall cost of care, though unit cost may be more expensive, through high clinical performance, avoiding unnecessary dressing changes, or inability to conform to difficult locations (e.g. the heel)

Table 1. Descriptive characteristics of the survey respondents (N=1673).

Variable	Frequency
Geographical region (n=1659)	
Africa	23 (1.4%)
Asia/Oceania (not Australia/New Zealand)	106 (6.3%)
Australia/New Zealand	526 (31.4%)
British Isles (UK or Ireland)	455 (27.2%)
Europe (not UK or Ireland)	157 (9.4%)
North America (Canada or USA)	356 (21.3%)
South and Central America	36 (2.2%)
Not recorded	14 (0.8%)
Profession (n=1667)	
Nurse/TVN/CWOCN	1367 (81.7%)
Doctor	125 (7.5%)
Allied Health Practitioner	130 (7.8%)
Other/ not recorded	45 (2.7%)
	(=1.75)
Speciality (n=1668)	
General Practice	159 (9.5%)
Home Care	211 (12.6%)
Hospital Medicine	91 (5.5%)
Podiatry	85 (5.1%)
Surgery	194 (11.6%)
Wound Care	626 (37.4%)
Other	302 (18.1%)
	(20.27.5)
Practice environment (n=1671)	
Patients' home	478 (28.6%)
Community clinic	295 (17.6%)
GP Surgery	194 (11.6%)
Nursing/residential care home	345 (20.6%)
Specialist wound care clinic	357 (21.3%)
Hospital outpatients' clinic	320 (19.1%)
Hospital ward/department	589 (35.2%)
Wound type treated	
Burn – superficial/partial/2 nd degree	589 (35.2%)
Burn – full thickness/3 rd degree	225 (13.4%)
Diabetic foot ulcer	900 (53.8%)
Arterial leg ulcer	791 (47.3%)
Venous leg ulcer	874 (52.2%)
Mixed leg ulcer	855 (51.1%)
Pressure ulcer – deep	813 (48.6%)
Pressure ulcer – superficial	923 (55.2%)
Surgical wound – closed	790 (47.2%)
Surgical wound – dehiscence	814 (48.7%)
Traumatic wound – skin tear	925 (55.3%)
Traumatic wound – other	724 (43.3%)
Moisture lesion	720 (43.0%)
Reasons stated for dressing change ¹	
Clinical setting	452 (27.0%)
Resource availability	364 (21.8%)
Patient preference	547 (32.7%)
Erratic patient attendance	234 (14.0%)
Patient compliance	573 (34.2%)
Wound aetiology	612 (36.6%)
Wound condition	904 (54.0%)
Wound exudate type and amount	1026 (61.3%)

Wound location	575 (34.4%)
Wound odour	706 (42.2%)
Periwound condition	665 (39.7%)
Signs of infection	861 (51.5%)
Risk of infection	519 (31.0%)
Product labelling/ manufacturer's guidelines	439 (26.2%)
Dressing type used	800 (47.8%)
Dressing adherence and integrity	667 (39.9%)
Dressing-related pain	466 (27.9%)
Cost	356 (21.3%)

 $^{{}^{1}\!\}text{Respondents}$ were permitted to state more than one response.

Table 2. Summary of typical and maximum time dressings left on non-infected and infected wounds.

	Mean typical time (days)		Mean typical time (days)		Mean maximum	n time (days)
Wound type (n=1116)	Non-infected wounds	Infected wounds	Non-infected wounds	Infected wounds		
Burn – 2nd degree	2.89	1.71	4.73	2.70		
Burn – 3rd degree	2.29	1.58	3.71	2.47		
DFU	2.78	1.79	4.40	2.78		
Arterial leg ulcer	2.94	1.81	4.56	2.71		
Venous leg ulcer	3.31	1.96	5.22	3.01		
Mixed leg ulcer	3.07	1.91	4.87	2.91		
PU – deep	2.21	1.64	3.60	2.54		
PU – superficial	3.42	2.14	5.06	3.23		
Surgical wound – closed	4.36	2.17	5.81	3.20		
Surgical wound – dehisced	2.18	1.65	3.60	2.53		
Skin tear	3.95	2.13	5.67	3.19		
Traumatic wound	2.80	1.88	4.69	2.96		
Moisture lesion	2.05	1.61	3.28	2.47		

Table 3. Typical wear times (days, mean(SD)) and ANOVA parameters in non-infected wounds by grouping variable.

Variable	Typical wear time (days): non-infected wounds	F-ratio	df	P value
Region		57.9	3,1073	<0.001
Australia/New Zealand	2.99 (1.06)			
British Isles/Europe	3.54 (1.51)			
North America	2.50 (1.18)			
Rest of the world	2.71 (1.21)			
Profession		10.5	3,1071	<0.001
АНР	3.78 (1.76)			
Doctor	2.73 (1.69)			
Nurse	3.00 (1.23)			
Other	3.17 (1.46)			
Speciality		7.31	6,1069	<0.001
GP	3.16 (1.17)			
Home care	3.03 (1.16)			
Hospital medicine	2.49 (0.967)			
Podiatry	4.02 (1.92)			
Surgery	3.02 (1.57)			
Wound care	2.98 (1.21)			
Other	3.05 (1.39)			
ANOVA = analysis of variance; AHP = allied health professional; GP = general practitioner; SD = standard deviation				ion

Table 4. Typical wear times (days, mean (SD)) and ANOVA parameters in infected wounds by grouping variable.

Variable	Typical wear time (days): infected wounds	F-ratio	df	P value
Region		28.5	3,955	<0.001
Australia/New Zealand	1.77 (0.758)			
British Isles/Europe	2.28 (1.28)			
North America	1.51 (0.732)			
Rest of the world	2.10 (1.19)			
Profession		14.4	3,953	<0.001
AHP	2.61 (1.54)			
Doctor	1.68 (1.20)			
Nurse	1.88 (0.943)			
Other	2.40 (1.57)			
Speciality		7.96	6,951	<0.001
GP	1.98 (0.884)			
Home care	1.97 (0.993)			
Hospital medicine	1.56 (0.677)			
Podiatry	2.79 (1.55)			
Surgery	1.76 (1.04)			
Wound care	1.87 (0.987)			
Other	1.97 (1.13)			
ANOVA = analysis of variance; AHP = allied health professional; GP = general practitioner; SD = standard deviation				tion

Table 5. Understanding of 'dressing wear time' (n=1051).

Possible meaning of dressing wear time	Frequency (n)	Percentage of respondents*
The length of time a dressing is intended to stay in situ as recommended by the manufacturer	247	23.5
The length of time a dressing remains <i>in situ</i> , which is often dictated by multiple factors	317	30.2
The length of time a dressing is serving a purpose (e.g. antimicrobial action, moisture absorption, etc.)	621	59.1
The length of time a dressing remains clinically in situ (without rolling, leaking, etc.)	103	9.8
I don't really know what 'dressing wear time' means	63	6.0

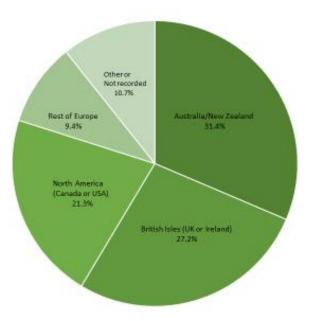
^{*}This column does not necessarily add up to 100, as respondents were permitted to select more than one answer.

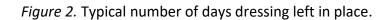
Table 6. Logistic regression parameters.

Variable	P value	OR	95% CI for OR
Geographical location – Australia/New Zealand	0.043	1.28	(1.01, 1.61)
Geographical location – British Isles	0.054	0.791	(0.622, 1.00)
Professional category - Nurse	0.180	1.21	(0.915, 1.61)
Professional category - Other	0.046	0.498	(0.251, 0.988)
Practice Environment – Hospital Outpatient clinic	0.021	1.35	(1.05, 1.74)

CI = confidence interval; OR = odds ratio

Figure 1. Geographical region where the respondents were based (N=1673). Total number of respondents to this question: n=1659.





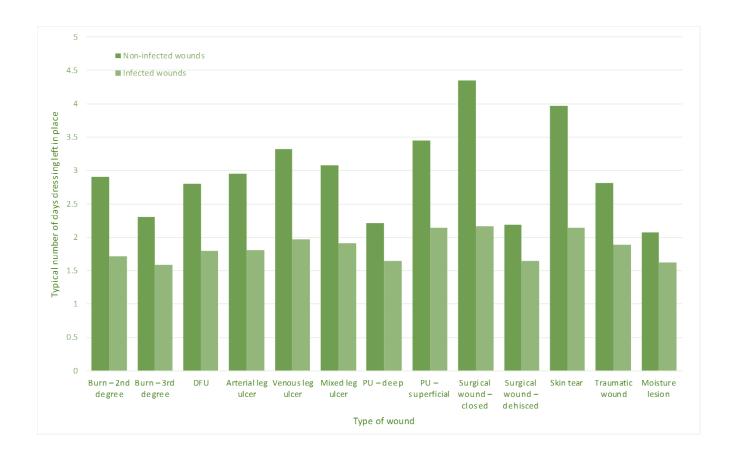


Figure 3. Maximum number of days dressing left in place.

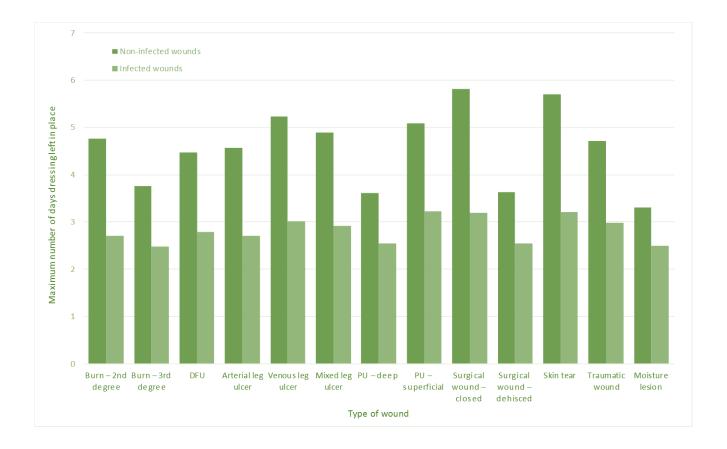


Figure 4. Typical wear times for non-infected and infected wounds partitioned by geographical area of respondent.

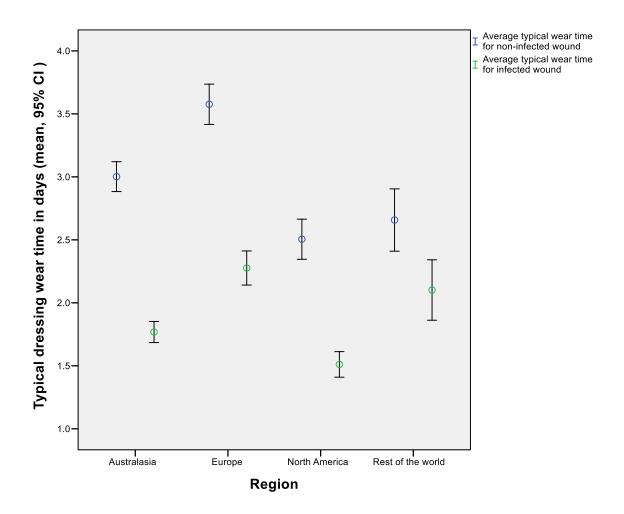


Figure 5. Typical wear times for non-infected and infected wounds partitioned by respondent profession.

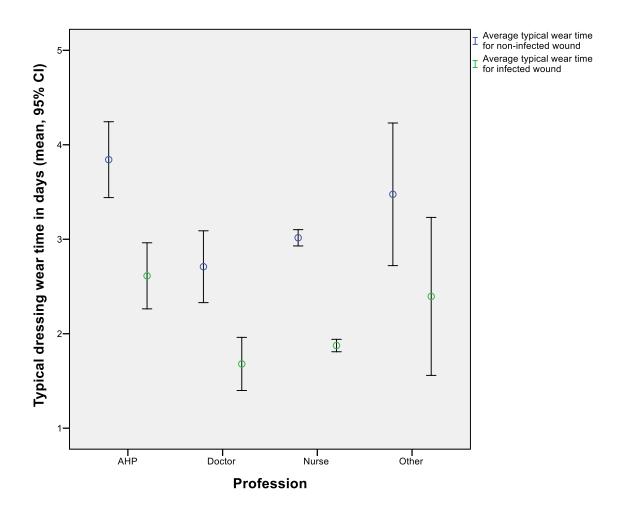


Figure 6. Typical wear times for non-infected and infected wounds partitioned by respondent speciality.

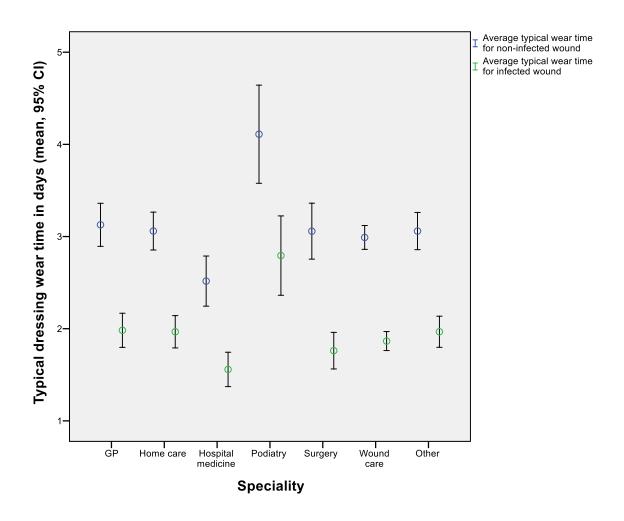


Figure 7. Knowledge of undisturbed wound healing in respondents based in Australia/New Zealand and elsewhere.

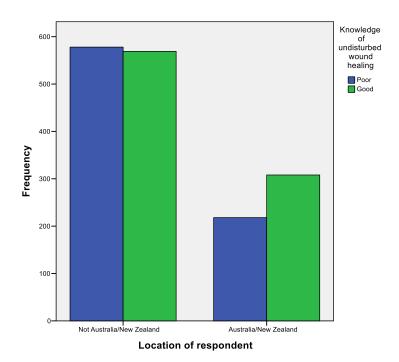
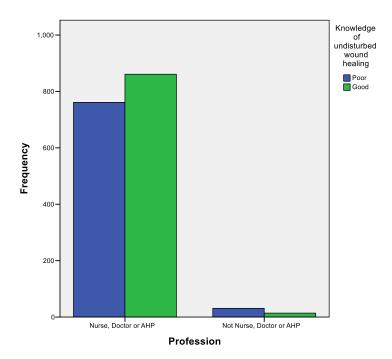


Figure 8. Knowledge about the concept of "undisturbed wound healing" in respondents who were nurses, doctors or AHPs and those who had other categorisations.



Supplementary material 1: the Survey

1. In which geographical region do you work?

Africa, Asia/Oceania (not Australia/New Zealand), Australia/New Zealand, British Isles (UK or Ireland), Europe (not UK or Ireland), North America (Canada or USA) and Central/South America (including Mexico)

2. What is your profession?

Nurse, Doctor, Allied Health, Other

3. What is your specialty?

General Practice, Home Care, Hospital Medicine, Podiatry, Surgery, Wound Care, Other

4. What is your main practice environment?

Patient home, Community clinic, GP surgery, Nursing/residential care home, Specialist wound care clinic, Hospital outpatients' clinic, Hospital ward/dept

5. Do your wound care protocols specify frequency of dressing change?

Yes, No, Sometimes, Not recorded

6. Other than wound care protocols, what determines how frequently you change dressings?

Clinical setting/environment, patient preference, patient compliance, wound condition, wound location, peri-wound condition, risk for infection, dressing type used, dressing change related pain, not recorded

7. Do you have challenges in meeting specified dressing change frequencies?

Yes, occasionally; yes, often; yes, always; no

8. If yes to Q7, what are the challenges?

Dressing selection, patient demands, wound characteristics, workload, other

9. What types of wound do you encounter in your practice?

Burn - superficial partial or deep partial (second degree), Burn - full thickness (third degree after excision/debridement), Diabetic foot ulcer, Leg ulcer – arterial, Leg ulcer – venous, Leg ulcer – mixed; Pressure ulcer –deep, Pressure ulcer – superficial, Surgical wound – closed, Surgical wound - dehisced Traumatic wound - skin tear, Traumatic wound – other, Moisture lesion

10. What are the typical and maximum number of days that dressings are left in place on non-infected, non-necrotic, non-complex wounds? Numerical response, from 0 upwards

11. What are the typical and maximum number of days that dressings are left in place on infected, necrotic complex wounds? Numerical response, from 0 upwards

12. Which option best describes what the phrase 'dressing wear time' means to you?

Length of time a dressing is intended to stay in situ as recommended by the manufacturer, length of time a dressing remains in situ, which is often dictated by multiple factors, Length of time a dressing is serving a purpose (e.g. antimicrobial action, moisture absorption, etc.), length of time a dressing remains clinically in situ (without rolling, leaking, etc.), I don't really know what 'dressing wear time' means

13. How strongly do you agree with the following statements describing 'undisturbed wound healing'?

Undisturbed wound healing is promoting a moist healing environment that avoids maceration and wound desiccation; Undisturbed wound healing is avoiding chemical, physical or microbiological disturbance; Undisturbed wound healing relates to minimising patient pain, stress and anxiety at dressing changes; Undisturbed wound healing is preventing tissue damage during dressing application and/or removal due to excessive dressing adhesion; Undisturbed wound healing is minimising the need for frequent dressing changes and leaving the dressing in situ for as long as possible; I don't know what 'undisturbed wound healing' means. **OPTIONS:** Strongly disagree, disagree, not sure, agree, strongly agree