Wounds International global webcast on TIME to revisit wound bed preparation

Q&A

Below are selected answers from the global webcast on ‘TIME to revisit wound bed preparation’ (December 2012), which is based on the recently updated TIME framework and was supported by Smith and Nephew. If you have any questions relating to this webcast, please contact Kathy Day, Publisher at Wounds International, email: kathy.day@woundsgroup.com

Question:
I’ve been using silver dressings on a patient for one month and there has been no improvement. What is the next step?
Answer:
Re-assess the patient, and take into consideration the clinical signs and symptoms of infection. The diagnosis of infection is a clinical decision and it is important to identify if the infection is systemic or local to the wound bed. Systemic infection should be treated with antibiotics after taking a wound swab. If the infection is local and has not responded to silver, then consider a different antimicrobial such as cadexomer iodine or PHMB. Additionally remember to cleanse and debride the wound. Refer to the International consensus on 'Appropriate use of silver dressing in wounds' on Wounds international (http://woundsinternational.com/clinical-guidelines/international-consensus-appropriate-use-of-silver-dressings-in-wounds)

Name: Sunitha
Location: Doha

Question:
In routine clinical practice, are there any signs or symptoms to indicate a biofilm? Do we need the diagnostic tool for biofilm in routine practice?
Answer:
Scientists around the world are working on a simple diagnostic for biofilm presence. Whoever succeeds may win a Nobel Prize!
Wounds with a high bioburden will almost certainly have a related biofilm, and maintenance debridement is advised when healing is stalled.

Name: Sompop
Location: Thailand

Question:
Is honey used a lot in wound care?
Answer:
Honey has become more popular in recent years. It is used as an antimicrobial and debriding agent.

Name: Bart Verlinde
Location: Belgium
Question:
What is the rationale for keeping the wound bed moist?
Answer:
Moist wound healing has been shown to accelerate wound healing by 50%, is less painful for the patient and also improves scar tissue. However chronic wound fluid is detrimental to wound healing as it contains elevated levels of MMPs and, therefore, excess wound exudate should be controlled either by absorbent dressings or negative pressure wound therapy (NPWT).
Name: Rijo
Location: New Zealand

Question:
Is recurring debridement the same as maintenance debridement?
Answer:
Not quite. Recurrent debridement aims to keep the wound free of slough and necrotic tissue, and needs to be undertaken whenever indicated. Maintenance debridement is a term coined by Dr Walcott in the USA, where he maintains superficial cleansing of open wounds on a regular basis to reduce the impact of early biofilm formation. Remember that the biofilm also extends below the wound surface.
Location: Australia

Question:
Does the two-week challenge apply to all silver products?
Answer:
Yes. Then the patient, the wound and the management approach should be re-evaluated.
Location: New Zealand

Question:
In wounds suspected of having biofilms, can you recommend the use of cadexomer iodine and if so, for how long? Will you apply nanocrystalline silver later in high-risk patient?
Answer:
There is some in vitro evidence to support the use of cadexomer iodine to help prevent the formation of biofilms in chronic wounds (Pseudomonas, Staph aureus) and mixed species typical of pressure ulcers (Staph aureus, S. epidermidis) and diabetic foot ulcers (Staph aureus, P aeruginosa, VRE). There is also some in vitro data to support the use of nanocrystalline silver to help prevent the formation of biofilms (P. aeruginosa and Staph aureus) so this treatment could be effective if used in line with the manufacturer’s guidelines.
Name: Sompop
Location: Thailand

Question:
How long should silver be used for?
Answer:
It depends on whether the wound is chronic or acute. For chronic wounds, it is recommended that an antimicrobial dressing should be used for two weeks initially and then the wound, the patient and the management approach should be re-evaluated. If after two weeks there is improvement then the silver dressing should be discontinued. If there is no improvement then consider changing the dressing to one that contains a different antimicrobial agent.
Name: Ikhlas Ibrahim
Location: Doha
Question:
When using NPWT, does gauze filler dry the wound too much? Would a seaweed-based gauze, that is soft and easily manipulated, be better in this case?

Answer:
This is not something that has been reported. Generally NPWT creates a wound healing environment and the exudate from the wound prevents the gauze from adhering to the wound.

Name: Jannie
Location: Australia

Question:
How much wound care can be delegated to nursing and non-medical staff?

Answer:
Wound care should be delegated to the most appropriate professional based on their knowledge, skills and experience.

Name: Radmila Lozo
Location: Belgrade

Question:
Which debridement method is best for diabetic foot wounds?

Answer:
You should always undertake debridement when it is indicated, but the method used will depend on what you have available and the methods you are familiar with.

Location: Australia

Question:
Do you think having tools like WOUNDCHEK™ (Systagenix) to determine activity levels of proteases in wounds are helpful for clinicians in making appropriate treatment choices for patients with chronic wounds?

Answer:
Yes. There is increasing and convincing evidence that over-expression of proteases in wounds, which have been shown to delay healing, should be addressed. These diagnostic tests are being developed to help select an appropriate dressing to manage excessive protease levels.

Name: Violet Butters
Location: Glasgow

Question:
Caroline, you spoke about protease measurement in the non-progressing diabetic foot ulcer. Is there a simple diagnostic tool at clinical level for determining protease levels?

Answer:
The role of diagnostics is developing and a point-of-care test has been developed to check for elevated protease activity at the wound bed. I would suggest reading the international consensus document 'The role of proteases in wound diagnostics'. You can find this on the Wound International website here: http://www.woundsinternational.com/clinical-guidelines/the-role-of-proteases-in-wound-diagnostics

Name: Fiona
Location: Ireland
Question:
Is maggot debridement therapy relevant to TIME? If yes, which types of wounds might need this type of treatment?
Answer:
Larval therapy can be used in most wounds that need debridement when no other method is available and provides appropriate wound bed preparation. In particular, there is support for their use in small deep necrotic diabetic foot ulcers.
Name: Hanuma Gangineni
Location: Melbourne, Australia

Question:
Is it acceptable to graft a wound with a suspected biofilm?
Answer:
Grafting can take place, but debridement should take place first to remove the biofilm.
Name: Karen Mbaabu
Location: Nairobi Kenya

Question:
What is the role of silver dressings used with compression dressings?
Answer:
There is no specific role. They should be used when indicated for colonisation/local infection, with or without compression
Name: Karen Mbaabu
Location: Nairobi Kenya

Question:
What timeframes are considered acceptable for the healing of venous ulcers with no arterial disease?
Answer:
Simple venous leg ulcers, which are wounds less than 10cm in any one dimension and present for a year or less should heal within a 12-week period. However, complex venous leg ulcers make take longer. A reduction in wound size in the first four weeks of treatment is generally a good indicator of healing.
Name: Radmila Lozo
Location: Belgrade

Question:
I have been told that silver can cause sensitivity. How would we recognise this? Is there a protocol for the length of time silver can be used when it is healing the wound?
Answer:
Avoid using silver in patients who are sensitive to it. I would recommend following the manufacturer’s instructions for the silver product. If the wound has responded to silver in two weeks (the ‘two week challenge’) then it can be discontinued.
Name: Sarah Brocklesby
Location: Bristol, UK
Question:
You speak of different levels of efficacy or strength of silver dressings. When talking about the two-week challenge is it beneficial to use the ‘strongest silver’ for a wound with a high bacterial load, and if so, which one would this be?

Answer:
In practice, the factors most likely to influence choice of silver dressings are availability and familiarity, the additional needs of the patient and the wound (eg levels of exudate and condition of the wound bed), whether a secondary dressing is required and patient preference.
I would suggest reading the international consensus 'Appropriate use of silver dressings in wounds' available on the Wounds International website:

Name: Bron
Location: New Zealand

Question:
What is the best option for removing slough to keep the wound bed clean other than surgical debridement?

Answer:
Look at the TIME document. You should choose the method available and with which you are competent.

Name: Rijo
Location: New Zealand

Question:
Dr Leaper, could you please define recurrent debridement again? Is this performed at every dressing change?

Answer:
If there is a clinical indication for debridement it should be undertaken at every dressing change. Maintenance debridement addresses the recurrence of the biofilm and critical colonisation, which delay wound healing.

Location: Australia

Question:
In your opinion, what would be the ideal characteristics of a wound dressing?

Answer:
The dressing should be appropriate for the type of wound problem. For example, an absorbent dressing can be used for an exuding wound or a debriding agent for sloughy or necrotic tissue. In addition, dressings should be:
- Acceptable to the patient
- Stay in place
- Be comfortable
- Provide increased wear time
- Evidenced based
- Cost effective.

Name: Carl
Location: Leeds
Question:
In the recent consensus document on appropriate use of silver dressings it is stated that silver dressings should not be used during pregnancy or lactation. Are you aware of any supporting research to back this statement, as it was not referenced?

Answer:
We are not aware of any supporting evidence, however, these are the guidelines given in the instructions for use by many dressing manufacturers. There are other antiseptics available which may be suitable.

Name: Alan
Location: New Zealand

Question:
Some people have said to stop using silver dressings at two weeks even if it has begun to reduce infection and infection is still present. If this were the case, would it not be correct to continue to use the silver until the wound is no longer infected?

Answer:
After two weeks the patient and the wound should be re-assessed. If clinical signs and symptoms of infection are present then the silver dressing can be continued or consider changing to another antimicrobial dressing. Long-term use of silver dressings should be avoided.

Question:
Is there a standard protocol for dressing use that can be used globally for all wounds?

Answer:
Many countries have different protocols and wound care formularies. However the TIME framework is a useful tool that is used across the world to guide decision-making when selecting wound dressings and therapies for patients. See the recently published paper on the TIME concept.

Name: Raani
Location: Jersey

Question:
When we use silver, does the amount of silver contained in the dressing matter?

Answer:
When the need for a silver dressing arises please consider the needs of the patient and wound, and chose an appropriate dressing. Evidence should also be utilised to determine the most appropriate dressing, as outcomes are the most important factor, not levels of silver. Remember to use the ‘two week challenge’

Name: SL
Location: Australia

Question:
You said that when wound dehiscence occurs that this might be due to biofilm. Is there a way to prevent this from occurring?

Answer:
There is some evidence that NPWT can reduce the risk of dehiscence.

Name: Jannie
Location: Australia
Question:
Many thanks for a very informative talk! Do you consider the use of sterile saline for cleansing during dressing changes to aid healing?
Answer:
Wound cleansing and debridement are an essential element of wound bed preparation. Two recent Cochrane reviews have summarised methods that are used for wound cleansing. Please also refer to the recently published TIME paper.
Name: Helen Moakes
Location: Cambridgeshire, UK

Question:
Just to be clear, if the bioburden of the wound is clearly reducing with an antimicrobial dressing at two weeks, but there is still improvement to be made with the bioburden – can the same antimicrobial dressing be used post two weeks?
Answer:
When antimicrobial products are used in infected wounds the infection should be treated as per the clinical protocol. If there are still clinical signs of infection and the dressing is indicated for this type of wound then the use of an antimicrobial dressing can be used for longer than two weeks and until the signs of infection have passed. If there is persistence in clinical signs of infection, then the clinician should re-evaluate other barriers to the healing, such as need for debridement and adequate perfusion.
Name: Alan
Location: New Zealand

Question:
Is the use of compression bandaging up to a maximum of one week compatible with the treatment of venous leg ulcers with biofilm or acute colonisation?
Answer:
Yes with appropriate antimicrobial use.
Name: SN
Location: Australia

Question:
How would you treat a necrotic heel where the skin is unbroken?
Answer:
You need to treat the underlying cause, eg pressure offloading, and protect the skin. It is likely that this wound will breakdown and then you need to choose your debridement method based on your knowledge, skills and patient choice.
Name: Ann
Location: Ireland

Question:
Is critical colonisation the same as local infection?
Answer:
Yes and no!! I think critical colonisation is now a recognised term, but it cannot be measured. It used to be called pre-infection, but it is not the same as invasive infection, the signs of which are also woolly and open to validation. Untreated critical colonisation usually progresses to infection.
Location: South Africa
Question:
How would you treat a cancerous wound on the forehead, which is gradually increasing? The patient is in long-term care and is unable to undergo surgical intervention.
Answer:
I would want to know who has made the decision that the patient is not suitable for surgical excision. This should be made by the multi-disciplinary team in conjunction with the patient and his/her family. Local wound management should concentrate on symptom control such as management of malodour, exudate and patient pain and discomfort.
Name: Ann
Location: Ireland

Question:
What do you think of using silver (eg Acticoat, Smith & Nephew) for burns?
Answer:
There are five trials that have shown the value of Acticoat in burns (see Smith & Nephew website). Its main value is in early and effective management of infection.
Name: Helen Murphy
Location: Australia

Question:
Why are swabs unhelpful in identifying biofilm? Is taking a swab for culture and sensitivity helpful in order to control this?
Answer:
Microorganisms envelop themselves in a protective biofilm called a glycocalyx. They are not planktonic and are protected from host defence and antimicrobials. They also prevent samples being taken, which can grow organisms. Specialised microscopy and molecular techniques are required to isolate or show their presence.
Name: Ethan Watters

Question:
Is there any health economic data and TIME?
Answer:
It's an area for further investigation.
Name: Brigite
Location: Belgium

Question:
Is there a place for paw paw ointment in managing biofilm in a chronic wound?
Answer:
I know of no data to support this. The TIME paper gives recommendations of how to manage biofilms.
Name: Jude Desjardins
Location: Australia

Question:
Is there good evidence for using low-level laser therapy in wound care?
Answer:
We are still waiting for Grade A evidence.
Name: Liz
Location: Gauteng South Africa
Question:
Are the NPWT guidelines freely available?
Answer:
Yes these have been published
- Bike-Sorensen et al (2011) Treatment variables
- Runkel et al (2011) Traumatic wounds and reconstruction

Note: The guidelines may be available through your local Smith & Nephew rep. They are also available through university and hospital libraries although they are not free to download. Note that Runkel et al was renamed Krug et al.

Question:
I am interested in learning more about how to incorporate TIME into our wound management formulary. Where can I find further information?
Answer:
The recently published paper on the TIME concept will guide you on the most up-to-date dressings and technologies that can go on your formulary. Additionally, a number of papers have been published on the use of TIME in clinical practice with case study examples that may be useful.

Question:
Where are we able to access the article regarding the updated TIME concept (the one that was recently published), if we haven't got access to the journal?
Answer:

Name: Ethan Watters
Location: Australia

Question:
When I use Acticoat silver dressing it sometimes produces a slimy film on the wound. Could this be biofilm?
Answer:
Acticoat has been shown to prevent the formation of biofilms (in vitro) so it is unlikely to be a biofilm.

Name: Suzana
Location: Brazil
Question:
David, what are your recommendations for biofilm prevention for those at risk? How do we know who is at most risk of a biofilm forming?
Answer:
Biofilms are probably present in all open wounds at all stages of healing. They are clinically relevant when there is stalled healing. When there is co-morbidity (eg out of control diabetes) or local complications (eg ischaemia with arterial disease) then a case could be made for a more preventative aggressive stance using maintenance debridement or an appropriate antimicrobial agent.
Name: Paul Bainbridge
Location: Nottingham

Question:
Should I suspect a biofilm in any wound that is not healing?
Answer:
Yes and consider an appropriate method of treatment.
Location: Scotland

Question:
How is the two-week silver treatment applied in wound care?
Answer:
The two-week silver treatment pathway recommendation can be found in 'Appropriate use of silver dressings in wounds' on the Wounds International website. It recommends identifying the infection, two weeks of treatment with a silver dressings then re-assessment of the patient and the wound. It applies to all wound types where infection has been identified.
Name: Anne
Location: Australia

Question:
What is the most important component of TIME?
Answer:
All the components of TIME are important and overlap for successful wound healing. It will depend on the problem at the wound bed as to the priority of the application of the TIME element, eg if the wound is highly exuding then managing the M will be the main priority.
Location: London

Question:
How can you tell the difference between slough and a biofilm?
Answer:
Slough is a mixture of fibrous exudate, necrotic tissue and bacterial products, which you can see. Biofilm is the bacterial glycocalyx, which needs specialised microscopy or molecular techniques for recognition.
Location: Glasgow
Question:
What is the specific treatment for a wound in a diabetic patient?
Answer:
Each patient with a diabetic foot wound is unique and different. Management should focus on good diabetic control, pressure offloading and then identifying and treating the problem at the wound bed.
Name: Nozizwe Buthelezi
Location: South Africa

Question:
How can I manage patient expectations if the wound is non-healing?
Answer:
Clinicians need to work with the patient to decide if wound healing is a realistic expectation. Most wounds will heal with the correct interventions, but a small percentage of wounds do not heal and this is difficult for the patient to accept. Patients are often more accepting when all options have been explored and a decision has been made by the multi-disciplinary team. The patient-agreed plan needs to address symptom control and improved quality of life and wellbeing.
Name: Ann
Location: Southampton

Question:
When a wound needs debriding, how best to balance the needs of the patient with resources/cost?
Answer:
Effective debridement need not be expensive. It needs doing as the resource/costs are worsened without it in the long term. The simplest and most effective method should be used which you are competent to deliver. Look at the TIME document to review the wide range of methods available.
Name: C
Location: Italy

Question:
I would like to thank you for this interesting broadcast. The responses are highly technical – is there a low cost approach for those living in countries with limited resources? In the Ukraine they are exploring ‘phage’ therapy, which directly pre-dates bacteria therapy. Can we expect any other hopes from there?
Answer:
Phage therapy is not widely used or even recognised outside the Ukraine.
Name: Thomas
Location: France

Question:
Puede ser traducido al Española?
Answer:
Hay documentos disponibles en Española en la pagina "Resources".
Location: ESPAÑA
Question:
How effective is silver in the treatment of biofilms? In that the bacteria are encased in a matrix of polysaccharides, does silver penetrate this matrix to reach the bacteria, and then destroy it?
Answer:
Like all antiseptics, silver has poor penetration of established biofilm, but once the biofilm is debrided then certain silver products may prevent its reformation and be an effective topical antimicrobial treatment.
Name: G.
Location: Brazil

Question:
Have there been any studies comparing PHMB, silver, iodine and honey and their ability to remove/prevent biofilms?
Answer:
We are not aware of any published clinical studies that have compared all of these agents. Some in-vitro studies have been published with varying results. Greg Schultz has done a good study and his presentation can be viewed at:
Name: Jo
Location: USA

Question:
Should cultures also be taken to identify infection, not just clinical signs?
Answer:
It is usual to make the diagnosis using the clinical signs and symptoms. A swab should only be taken if the wound is not responding to treatment, the host is immunosuppressed and the wound is not progressing as expected, or if a 'bad bug' was suspected. The swab results can be very misleading and must be interpreted carefully with good knowledge of the patient's overall condition. Any swab will grow bacteria, some of which may cause infection, however their presence in or around the wound does not necessarily signify infection.
Location: Ontario

Question:
I have been asked about routine swabbing of wounds at a certain stage (ie 2). Are you suggesting that you recommend a swab only after the two-week trial of antimicrobials (or before)?
Answer:
There should never be ‘routine’ swabbing of wounds. Only when you suspect an infection and want to use antibiotics should a swab be taken. A swab may also be indicated when an ulcer is in a stalled state and you wish to know if there is a persistent organism present, such as Staph aureus or Pseudomonas. Microbiological proof of success is difficult because of biofilm presence.
Name: Terry
Location: Saskatchewan Canada

Question:
Can silver and a honey preparation be used in combination?
Answer:
I would not usually use a combination of two antimicrobial agents especially as both have a broad spectrum of activity. Recent information is however suggesting that there may be a place for rotating the antimicrobial eg two weeks of silver then two weeks of honey. This is mentioned in a
recent Best Practice Document. Please refer to manufacturers’ instructions for use and clinical protocols for local guidance.
Name: Donna DeChant
Location: U.S. Cleveland Ohio
Question:
In practice, how do I decide whether to use antibiotics or not, ie balance antimicrobial resistance and the drive to rely less on systemic antibiotics against the prophylactic benefits such as preventing attachment of biofilms? How should we decide whether to use them or not on a specific wound?
Answer:
The need for systemic antibiotics is a clinical choice and should be reserved for local and systemic infection. Biofilm removal depends on adequate maintenance debridement. Topical antiseptics may help to prevent reformation of biofilm.

Question:
Is it true that taking a wound swab is not helpful when you suspect inflammation as you can get a negative result even if the wound is positive?
Answer:
If the inflammation is believed to be the result of elevated microbial burden then a swab may be useful in determining the causative organism and in so doing inform subsequent treatment. If no infection is suspected then a swab would be unlikely to inform treatment further.
Name: Tom Verbist
Location: Belgium

Question:
Can you describe what method you are advocating for wound measurement: when should a ruler be used and should this be head to toe for length and side to side for width OR do you use longest length regardless of position?
Answer:
I would suggest that a local agreement should be reached, as there is no evidence to say that either way is better. What is important is that there is a consistent approach within a service and especially that there is consistency with the same patient. Personally I would measure the longest length, but the chart used in my area of practice allows you to show this using a clock face.
Name: Jodi Quinlan
Location: Alberta, Canada

Question:
Can you please provide further information regarding the use of PHMB as a topical antiseptic? Thank you.
Answer:
There are some useful resources on Wounds International that refer to PHMB. If you go to www.woundsinternational.com and type in PHMB in the search area it will bring up a range of materials.
Name: Dr Rose Pignataro.
Location: University of South Florida

Question:
Excellent webcast. It is fantastic to see that TIME is not only still relevant and applicable to clinical practice, but is being evolved further. This was an excellent complement to the original and more recent publications on TIME. It is great to recalibrate TIME against the more recent treatment

Answer:

Thank you for your great feedback.
Name: John Gregory
Location: UK

Question:
Is there ever a time when we want to keep a wound dry? Eg lower leg, venous ulcer in old scar tissue (burns), severe CVD.

Answer:
Ischaemic digits are always kept dry as there is little benefit in trying to rehydrate them. In some cases necrotic eschar on heels may be left intact (this was identified in the NPUAP / EPUAP 2009 guidelines). Other reasons for leaving a wound dry would include when rehydrating the wound serves no benefit to the patient. For example, a necrotic pressure ulcer in a patient in the end stages of life or where rehydrating the wound may compromise overall objectives of care, or if rehydrating a foot/heel wound reduces capacity to mobilise in a patient post CVA where regaining mobility is a greater priority. Otherwise the principles of moist wound healing are generally followed.

Name: Kathleen Cooper
Location: Sointula, B.C.

Question:
Should I try topical treatments before starting antibiotics?

Answer:
This depends. If there is spreading local or systemic infection antibiotics must be considered. High bioburden (critical colonisation) without infection deserves a trial of topical antiseptic therapy without the need for antibiotics. Both can be used when bioburden is out of control.

Question:
Do you think that implementing wound assessment using TIME principles would be effective for all wounds in a home care setting, and re-assessing if wounds do not heal?

Answer:
The TIME framework is not care-setting specific and can be used to assess chronic wounds within the home setting. The framework can be used following initial assessment to re-assess a wound to determine which factors may still be contributing to non-healing.

Name: Susan F. Jørgensen
Location: Denmark

Question:
What is your recommendation for wounds that are not epithelialising (end stage of wound healing)?

Answer:
It depends what the problem is. If the wound is fully granulated, but epithelial tissue is not progressing over the surface, and once you have excluded obvious issues such as the presence of a biofilm, you need to review the level of hydration. Sometimes using a dressing that keeps the wound just moist can increase the tendency to re-epithelialise. Over-hydration can prevent the wound edges from migrating. The purpose of TIME is to help identify barriers to healing.

Name: Farhadian Mansoura
Location: Iran
Question:
What would be the frequency of dressing changes during the two-week challenge?
Answer:
That would need to be a clinical decision based upon factors such as exudate level, patient concordance, product(s) used etc. Refer to instructions for use for further details of wear time.
Name: Emily Marra
Location: Victoria, British Columbia

Question:
How are physical therapy modalities effective in treating biofilms?
Answer:
They are all effective but as biofilms exist under the wound-granulating surface, or if there is colonisation (which there always is as it is impossible to sterilise a wound) they soon reform. Maintenance debridement is recommended at dressing changes, particularly if healing is stalled.
Name: Maesperanza Herrera
Location: Sacramento, CA, USA

Question:
Silver dressings are not available in our FP10 formulary (I work in primary care). Is there enough evidence available to change this?
Answer:
There is a reasonable body of evidence to support the use of silver dressings. You will probably find that the reason these are not included relates to the perceived cost of this category of products. You would need to include information on cost effectiveness as well as evidence of efficacy if you were to make a proposal to include these products. Please refer to the silver consensus guidelines available on Wounds International for further information.
Name: Gerda
Location: Wales

Question:
With regards to the wound edge, when would you debride this area? With regards to tissue management, when would you debride eschar? Would you soften it first with an enzyme before sharp debridement?
Answer:
There are gentle methods of debridement, which you can take to the wound edge without damaging it. I would always debride eschar unless it was dry, painless and uninfected in a patient who was in the last few weeks of life. I have little experience of enzymes, but the use of a hydrocolloid/hydrogel can help to soften hard eschar.
Name: Valerie Parayno
Location: Washington, USA

Question:
In the case study of the lower leg, why did you use silver for two weeks followed by compression and not use silver for seven days and compression at the same time?
Answer:
Following the two week challenge, the infection which originally prompted the use of a silver antimicrobial had resolved, meaning the silver dressing was no longer necessary or appropriate.
Question:
Durante cuánto tiempo se mantienen las larvas en el lecho de la herida para realizar un buen desbridamiento? ¿Cómo se obtienen dichas larvas? 

How long should larvae be kept in the wound bed? How do I get hold of the larvae?

Answer:
The maggots are sourced from a commercial company in the UK. It is important that maggots are only used from a company, which produces the larvae specifically for medical use as they are bred and transported in sterile conditions and a specific strain of fly Lucilia is used. In Europe the strain Lucilia Sericata is used and in Malaysia Lucilia Cuprina. These strains are specifically chosen as they selectively feed on dead tissue and will not cause further damage. Please refer to instructions for use and local clinical protocol.

Name: Ana Mª Burgos
Location: Madrid- Spain

Question:
How can I download the updated ‘TIME’ table?

Answer:
This can be downloaded from the Resources tab of the webcast, or can be found in the on-demand versions at http://www.woundsinternational.com/webcasts/webcast-time-to-revisit-wound-bed-preparation

Name: Elizabeth Way, RN
Location: USA

Question:
Have you any recommended resource material or images to educate front-line staff on the different type of wound edges? I am an educator for wound care in my area and find that staff struggle with these concepts (eg attached, detached, rolled etc). I have some images that I use, but would welcome additional input.

Answer:
I am not aware of many freely available images other than via internet sources such as Google. Most clinicians protect their images as they have been obtained with specific levels of consent, for example for use in patient records only or teaching purposes only. There is a slide deck freely available on the International Wound Infection Institute site, which does contain some images of wounds, which you may find helpful, but in reality it is best to have your own images as you then know the patient history and the story behind the wound.

Name: Jodi
Location: Alberta, Canada

Question:
What is the best way to treat a biofilm - silver, PHMB or cadexomer iodine?

Answer:
I am not aware of any clinical studies comparing these directly. Many have invitro evidence showing varying results. Greg Schultz has a published paper on this. See http://www.woundsinternational.com/webcasts/understanding-biofilm-based-wound-care-what-you-need-to-know

Name: Geisa
Location: Brazil
Question:
What is the relationship between wound infection and closure times?
Answer:
Wound infection may cause delay to closure rates, but this is not a simple question to answer as there are many other factors involved.
Name: Assem Mohammad
Location: Qatar-Hamad Medical Corporation

Question:
We are increasing our use of NPWT and would like to know if you practice the two-week challenge for the use of silver dressings for NPWT as well. Typically we use for one week and reassess.
Answer:
Any therapy should have a realistic time set for review and evaluation; this may vary according to the wound and the treatment objective. Generally speaking two weeks would be a reasonable period at which to review efficacy.
Name: Jodi
Location: Alberta, Canada

Question:
You mentioned using antiseptics for a stalled stage 4 sacral wound. How long can Dakin’s solution be used in a wound?
Answer:
I personally would not use a hypochlorite such as Dakin’s in an open wound, although some plastic surgeons do like to use hypochlorite solutions to prepare a clean wound bed prior to grafting. There is a new generation of chlorine-containing products, which are alleged to be less toxic while being effective at preparing the wound bed and treating biofilms.
Name: Maesperanza Herrera
Location: Sacramento, CA, USA

Question:
When rehydrating a wound bed to soften eschar, what is the best way to protect the surrounding skin to avoid maceration?
Answer:
A barrier film (applied via a swab, cream or spray) in combination with a suitable secondary dressing can help to prevent maceration. It is important to avoid applying excessive quantities of the hydrating agent and ensuring that the chosen agent stays in place and is not displaced by patient activities, eg weight-bearing. Always follow local clinical protocol and instructions for use
Name: Kathleen Cooper
Location: Sointula, B.C.

Question:
Is it advisable to debride an arterial ulcer caused by severe PAD?
Answer:
This is a very specialised area and needs the attention of the whole PAD multidisciplinary team. Inadvisable debridement may worsen the arterial ulcer. While waiting for revascularisation, arterial ulcers need to be kept relatively dry with close regard and treatment of infection.
Name: Gerda
Location: Wales
Question:
David, which is the best antiseptic that we could use for biofilms caused by *Pseudomonas*?
Answer:
I would only try and treat *Pseudomonas* if it were persistent or clearly related to stalled healing. If there is a high bioburden, then treatment with silver, PHMB or cadexomer iodine should be assessed closely for infection, when antibiotics need to be considered.
Name: Elena
Location: Spain

Question:
According to your experience, when a local infection is suspected and a topical antiseptic is indicated, which one is the first option, silver or cadexomer iodine?
Answer:
If there is infection, antibiotics should be considered and a swab should be sent in for sensitivities. In the meantime, start antiseptic dressing therapy. Nanocrystalline silver may be good for a fast response, but in general there are good research papers suggesting silver and cadexomer iodine may also be a good choice.
Name: Pilar Algilaga
Location: Castellon, Spain

Question:
How can you get IWJ?
Answer:
You will need to subscribe via their website (Wiley). Some articles are available for free.
Name: Bincy
Location: NZ

Question:
Do you think it would be effective to assess all wounds (not just chronic wounds) using TIME principles – ie in home care?
Answer:
By focusing the assessment on the four key elements, the TIME framework can be usefully applied to any wound healing by secondary intention, as it aids the clinician in interpreting the status of the wound bed and identify potential barriers to healing that may need to be addressed should the wound fail to progress to healing.
Name: Susan F. Jørgensen
Location: Denmark

Question:
Professor Leaper, a common trend says that ‘Where there is pus, there is a must for debridement’. What is your point of view about this please?
Answer:
Not sure what you mean by pus, because pus means there is an abscess that needs adequate drainage. If you mean necrotic tissue or slough, then yes, use debridement that is complete and rapid.
Name: Assem Mohammad
Location: Qatar-Hamad Medical Corporation
Question: Why is it better for clinicians to use gauze rather than foam on a patient who has a painful wound?
Answer: Presumably your query relates to using gauze with NPWT? It has been observed that the granulation tissue does not grow into the gauze in the same way it may do with foam, making the removal of the interface material is less traumatic.
Name: Reginald
Location: Bahamas

Question: What is the mechanism of action by which silver breaks down the structure of the biofilm (eg by releasing ionic silver destroying the cell membrane)?
Answer: Silver acts at membrane level and then at certain aspects of the bacterial cell metabolism. It can prevent reformation of biofilm, but like all antiseptics cannot adequately treat established biofilm without concomitant debridement.
Location: Brazil

Question: I have not heard of using honey as an agent in treatment of wounds - how does it work?
Answer: Honey is used as both a debriding agent and an antimicrobial. There is a Made Easy document on using one of the honey products on the Wounds UK website (http://www.wounds-uk.com/made-easy/medihoney-dressings-made-easy---products-for-practice) and a Made Easy document on Using Antimicrobials on the Wounds International website (http://www.woundsinternational.com/made-easys/antimicrobial-dressings-made-easy) which you may find useful.
Name: Cindy Hurley
Location: Salisbury, MD (USA)

Question: How does cadexomer iodine treat biofilm?
Answer: The mechanism is unknown, but cadexomer iodine was shown to be effective invitro in a recent study by Greg Schultz.
Name: Shibon
Location: Sri Lanka

Question: Do you have to wait until the infection is resolved before applying compression therapy? If the silver takes seven days to release, can the two not be used together at the same time? Thanks
Answer: Please refer to local clinical guidelines. Some people may wait until an infection is resolving before reapplying compression - this relates more to the management of pain than anything else. If the leg is inflamed it is likely to be very painful and the patient will not usually tolerate the application of compression. It is also likely that you would want to observe the wound and surrounding skin more frequently if the wound is infected. Once the infection is starting to be controlled and the pain has reduced, it is fine to use the dressing under compression.
Question:
Is there any link between the prolonged use of silver dressings and increased risk of infection with *Pseudomonas*?
Answer:
There has been no evidence of this in the extensive trials of silver in burns and open wounds.

Thank you for your support
Kathy Day, Publisher, Wounds International