

## Wound Infections: RFI Response Form

Please complete the below information, and email this to TIP\_team@acc.co.nz by 3pm, Wednesday 1 February '17.

Respondent's Details		Enter answer below
1. Please provide the following details about your organisation.	Name of organisation	New Zealand Nurses organisation
	Website of organisation	<a href="http://www.nzno.org.nz">www.nzno.org.nz</a>
	Physical address	Level 3, Crowe Howarth Building, 51 Willis Street, Wellington 6140
Contact Person during the RFI		Enter answer below
2. Please provide the following details about the nominated contact person that ACC will liaise with concerning this RFI.	Name	Marilyn Head
	Position / Role	Senior Policy Analyst
	Email	marilynh@nzno.org.nz
	Phone number	04 494 6372
Supplier capabilities and ideas		Enter answer below

3. Please tell us about your organisation and outline your organisation's core competencies.

NZNO is the leading professional nursing association and union for nurses in Aotearoa New Zealand. NZNO represents over 47,000 nurses, midwives, students, kaimahi hauora and health workers on professional and employment related matters. NZNO is affiliated to the International Council of Nurses and the New Zealand Council of Trade Unions.

NZNO promotes and advocates for professional excellence in nursing by providing leadership, research and education to inspire and progress the profession of nursing. NZNO represents members on employment and industrial matters and negotiates collective employment agreements.

NZNO embraces te Tiriti o Waitangi and contributes to the improvement of the health status and outcomes of all peoples of Aotearoa New Zealand through influencing health, employment and social policy development enabling quality nursing care provision. NZNO's vision is *Freed to care, Proud to nurse*.

4. Please detail how you can reduce the incidence and severity of wound infections.

In relation to the approach(es) you recommend, please detail:

- The idea / proposal, including expected outcomes and benefits (why should we do this??)
- Evidence that supports the effectiveness of this idea / proposal
- Approaches to implementing
- Indicative resourcing requirements (staff time, supplies etc)
- Approach to reporting / monitoring progress
- How it impacts:
  - Indirect reach, which focuses on people's awareness of a particular programme
  - Direct reach, which measures the number of people affected by the programme
- Limitations
- Key risks, including possible health and safety issues

Feel free to list multiple possibilities. (Answer in a separate appendix if you wish).

Please note that ACC must comply with Section 263 of the Accident Compensation Act 2001, which requires that ACC promote measures to reduce the incidence and severity of injury in New Zealand - these measures are to be undertaken and funded only if they are likely to result in a cost-effective reduction in actual or projected levy rates or Non-Earners' Account expenditure.

The following information and suggestions have arisen from consultation with experienced and expert nurses, primarily from NZNO's College of Primary Health Care Nurses (CPHCN), Infection Prevention and Control Nurses college (IPCNC) and Enrolled Nurse Section; and from NZNO's professional nursing, policy and research advisers.

The treatment, planning and management of wounds to prevent and reduce infection, is a core nursing competency, which lies at the heart of the nursing scopes of practice. Nurses are regulated under the Health Practitioners Competence Assurance Act 2003, and are trained and educated to assess, treat and manage wounds, and refer to medical colleagues as appropriate. Regulation assures high quality, efficient, evidence-based best practice and patient safety. The management of wounds is incorporated into both specialist wound care nursing roles and all general nursing roles and specialties. See, for instance, the Nursing Council (NC) approved postgraduate qualification for [Wound Care Nursing](#) and the District [Nurse Knowledge and Skills Programme](#) (CPHCNZ). Nurse Practitioners (NP), Registered Nurses (RN), including clinical nurses specialists (CNS) in conjunction with Enrolled Nurses (EN) are responsible for developing wound care plans, coordinating and monitoring treatment and providing ongoing assessment for individuals; they provide direct care/treatment and education, including simple infection control strategies, and may also direct or delegate care/treatment tasks to eg health care assistants.

Nursing levels of staffing have been shown to have a direct impact on wound care. Currently it is very clear to members that wound care is being rationed and compromised across all health service levels, the effect of which is to increase both the risk of infection and the healing time. ACC contracts Assessment Reports/ Treatment Plans for Woundcare but it is not clear how often they are audited, or whether DHBs and/or private providers have been challenged to ensure that ACC gets the outcomes required. The safety and effectiveness of woundcare programmes is highly dependent on having the right workforce; sufficient nursing levels and skillmix should be the starting point for any programme to improve the efficiency and effectiveness of woundcare.

Barriers to equitable access to health services, which can include ACC funded services, is evidenced by entrenched health disparities, and exacerbated by lack of access to

	<p>'assimilable' information (eg multimedia, multilingual) and affordable woundcare products (which are also rationed). Inequity must be addressed for both ethical and practical reasons: the greatest benefit comes from universal low cost interventions (eg information) which 'raise the threshold' for specialised intervention. The broad context of inequity in which 'low level' reduction woundcare needs to be considered, requires a new holistic approach to health care and practitioners with a depth of knowledge, skills and leadership. This fits the NP scope of practice ideally (See "other information" section below). NPs often work across traditional workforce boundaries to prevent disease and manage people's healthcare needs. See for instance the <a href="#">Evaluation report of a Nurse Practitioner Model in Aged Care</a> (Peri K., Boyd M., 2013) and, more specifically, <a href="#">Designing the Future of Wound Care: The role of the nurse practitioner</a> (Maclellan, Gardner, Gardner, &amp; A, 2002)</p>
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	<p>Woundcare must also be considered in the context of the increasing incidence of infectious and chronic disease and patients with comorbidities. It is important that in addition to public education and information, patients are provided with a <b>Package of Care</b>, not woundcare alone. Nurses in all settings are aware that, besides clinical access issues, many patients are unable to fill prescriptions or follow the care plan, and are confused and adversely impacted by uncoordinated healthcare from different practitioners and services. Narrowly targeted contracts mean that practitioners are often limited to addressing one health issue, when it is clear that a more holistic approach is necessary – as outlined in the Ministry of Health’s 2007 Publication “<a href="#">Meeting the needs of people with Chronic conditions</a>” which we recommend to your attention.</p> <p>Woundcare must also be considered in the global context of antimicrobial resistance (AMR) due to the overuse of antibiotics including in the treatment of acute and chronic wounds. Compromised persons, however, are more likely to develop chronic low grade infections related to bacterial biofilms (see “Other Information” section below). Early intervention is the key to all wound care, i.e. recognising signs and symptoms of firstly inflammation and secondly when a wound is changing from acute to chronic (a biofilm will have formed in 80% of all chronic wounds), and referring or treating appropriately. Early intervention requires good public health programmes and the clinical skills and oversight of a regulated health practitioner. We note that wound education and treatment process at present indicates that wounds should be treated with minimal interruption to the person’s own immune/healing process. The host has bacteria on their skin with a degree of resistance unknown and the effect of co-morbidities impacting on chronic wound healing. Any wounds to the skin e.g. acute wounds, surgery and or fitted devices are a potential for colonisation from the host’s or others bacterium to invade. Any co-morbidity, inclusive of age-related symptoms, e.g. diabetes, poor circulation, extremely dry skin, lymphedema, immune deficiency, malnutrition especially in the elderly, Irritable Bowel Syndrome and Crohn’s Disease can have a major impact on wound healing.</p> <p>NZNO suggest the following need to be considered in the development of a programme for reducing the incidence and severity of wound infections:</p>
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	<ol style="list-style-type: none"><li>1) A uniform approach, a coordinated national public health programme, improved and consistent health workforce training and education (eg GPs, Practice Nurses, and Community workers) and a team of Nurse Practitioners, would eliminate an ad-hoc approach to wound and antibiotic management.</li><li>2) Adequate workforce levels and skillmix, in particular for nursing, are essential to reducing wound infection. (Note: NZNO is happy to discuss)</li><li>3) Conduct a multimedia, multi lingual and mainly pictorial Wound Care Educational Program Drive incorporating national and local television, radio, print and social media eg a phone app, to promote simple infection control strategies: eg Wash and dry hands, clean the wound and around with clean water; look for increased pain, health, redness, weeping; apply an antimicrobial, preferably iodine based; and <b>cover the wound for 24-48 hours.</b></li><li>4) Liaise with the Environmental Science and Research Institute (ESR) to promote public awareness of the increasing number of cases and risk of antimicrobial resistance (AMR). This is particularly important for those working in the education, health, agriculture, cleaning, and environmental sectors. It is also important for international sourcing of food since AMR is higher than New Zealand in most countries we import food from. Note the recommendations, supporting documents and tools to implement the <a href="#">WHO Global Action Plan on Antimicrobial Resistance, 2015</a> and support the development and implementation of a national action plan for New Zealand.</li><li>5) Primary Health Education: Poor nutrition is known, but not proved, to be a determinant to poor wound healing. Hygiene, Skin Care, Nutrition and Simple Wound Care education in the school curriculum is essential.</li><li>6) In terms of the treatment of acute wounds, if the person is compromised, s/he would benefit from early intervention and application of an inexpensive short acting antibacterial dressing e.g. Betadine, perhaps preventing further bacterial complications. Complex or Chronic wounds are certainly at risk of having a biofilm and will need longer to recover, however by disrupting the bacterial wound bed with an enzymatic or autolytic debriding agent, Negative Pressure Wound Therapy and applying the appropriate anti-microbial dressing, wound healing can proceed even without the use antibiotics.</li></ol>
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	<p>a. Cost effective dressings can consist of simple treatment initially with diluted Iodine liquid, which interrupts the bacteria and then applying (a Smith &amp; Nephew product), Slow Release Iodine, Cadexor Iodine, (Iodosorb), which slowly debrides the slime/film. Cuticerin holds the iodisorb over the wound and manages the moisture level. Secondary dressings are used to draw excess exudate away from the wound. Checking always for Iodine Allergy before treatment.</p> <p>b. A high level of exudate requires a high absorbency product to maintain a consistent moisture level that draws the excessive exudate away from the wound reducing maceration. As the exudate reduces a lower density and less expensive dressing is used.</p> <p>c. Iodosorb is used till it is noted that the slime and mucous has reduced revealing pink epithialization whereby the biofilm has been reduced and the person's own healing process is maintained. Maintenance anti-microbial e.g. a silver dressing may be used till the wound is totally healed.</p> <p>7) We also draw your attention to the International Wound Infection Institute's most recent international consensus update of <a href="#">Wound Infection in Clinical Practice: Best practice principles</a>.</p> <p><b>References</b>  MacLellan, L., Gardner, G., Gardner, A., &amp; A, M. L. G. G. G. (2002). Designing the future in wound care : the role of the nurse practitioner, <i>10</i>(3).  Peri K., Boyd M., F. S. and S. Y. (2013). <i>Evaluation of the Nurse Practitioner in Aged Care</i>. Palmerston North. Retrieved from <a href="http://www.midcentraldhb.govt.nz/Publications/AllPublications/Documents/NP_aged_Care_15NM.pdf">http://www.midcentraldhb.govt.nz/Publications/AllPublications/Documents/NP_aged_Care_15NM.pdf</a></p>
<p><b>Pricing</b></p>	<p><b>Enter answer below</b></p>
<p>5. Please provide a high level overview of the potential costs involved. If there are start-up costs versus on-going costs, please detail these separately. Please include:</p> <ul style="list-style-type: none"> <li>• Cost of implementation</li> </ul>	<p>N/A</p>

<ul style="list-style-type: none"> <li>Costs against its projected future benefits based on past experience (expect to see a reduction in treatment injuries over time)</li> </ul>	
<p><b>Other information</b></p>	<p><b>Enter answer below</b></p>
<p>Please detail any further information you believe may assist ACC.</p>	<p>NURSE PRACTITIONERS –<a href="#">Competencies for the NP scope of practice</a>, Nursing Council of New Zealand</p> <p>Nurse practitioners are expert nurses who work within a specific area of practice incorporating advanced knowledge and skills. They practise both independently and in collaboration with other health care professionals to promote health, prevent disease and to diagnose, assess and manage people’s health needs. They provide a wide range of assessment and treatment interventions including differential diagnoses, ordering, conducting and interpreting diagnostic and laboratory tests and administering therapies for the management of potential or actual health needs. They work in partnership with individuals, families, whanau and communities across a range of settings. Nurse Practitioners prescribe medicines within their specific area of practice. Nurse Practitioners also demonstrate leadership as consultants, educators, managers and researchers and actively participate in professional activities and local and national policy development.</p> <p>BIOFILM: A “Biofilm” is any group of microorganisms in which cells stick to each other on a surface. These adherent cells are frequently embedded within a self-produced matrix of extracellular polymeric substance (EPS). Biofilms can be both harmful and essential for the microbiology of the earth’s existence.</p> <p>IUPAC definition. (International Union of Pure and Applied Chemistry):</p> <p>Aggregate of microorganisms in which cells that are frequently embedded within a self-produced matrix of (EPS) adhere to each other and/or to a surface.</p> <p>Note 2. The self-produced matrix of extracellular polymeric substance, which is also referred to as “slime”, is a polymeric conglomeration generally composed of extracellular biopolymers in various structural forms. Formation of a biofilm begins with the attachment of free-floating microorganisms to a surface. If the colonists are not immediately separated from the surface they can anchor themselves more permanently using cell adhesion structures. Once colonization has begun the biofilm grows through a combination of cell division and recruitment.</p>

	<p>Polysaccharide matrices typically enclose bacterial biofilms. <u>In addition to the polysaccharides, these matrices may also contain material from the surrounding environment, including but not limited to minerals, soil particles and blood components such as erythrocytes and fibrin.</u> The final stage of biofilm formation is then only to change in shape and size.</p> <p>Bacteria living in a biofilm usually have significantly different properties from free-floating Planktonic or non- aggregating bacteria of the same species. The dense and protected environment of the film allows them to cooperate and interact in various ways. One benefit of this environment is increased <u>resilience</u> to detergents and antibiotics, as the dense extracellular matrix and the outer layer of cells protect the interior of the community. Multi drug <u>tolerance/resilience</u> or antibiotic <u>tolerance</u>, (this is different to “Multidrug Resistance”), is not caused by mutant microbes, but rather by microbial cells that exist in a transient, dormant, non–dividing state.</p> <p>Biofilms typically cause chronic infections that persist despite adequate Antibiotic therapy and the host’s innate and adaptive defense mechanisms. Chronic infections are characterized by persistent and progressing pathology due to the host’s inflammatory response surrounding the biofilm.</p> <p>Re: Hoiby, N., Bjonsholt, T., Givska, M., Mokin, S., and Diofu, O., Antibiotic Resistant Bacterial Biofilms. <i>Int J Antimicrob Agents</i>. 2010; 35: 322 -332</p> <p><b>CLINICAL SIGNS OF A BIOFILM</b></p> <ul style="list-style-type: none"><li>a) Clinical Signs of infection.</li><li>b) Medical Hx of biofilm –predisposing condition e.g. co-morbidities of diabetes, poor vascular circulation, dry skin, Lipedema, CVA, Age, Immune deficiency diseases, malnutrition.</li><li>c) Persistent infection i.e. more than 7 days.</li><li>d) Failure of AB treatment and recurrence of the infection, particularly if evidence is provided that the same organism is responsible on multiple time points – typing of the pathogen.</li><li>e) Documented History of evidence of AB failure.</li><li>f) Systemic signs and symptoms of infection that resolve with AB therapy only to recur after therapy has ceased.</li><li>g) Microscopic evidence – fluid tissue samples.</li><li>h) Positive culture.</li></ul>
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	<p>i) Specific immune Response to identified microorganisms (e.g. P. Aeruginosa antigens in Cystic Fibrosis), if the biofilm infection has been present for more than 2 weeks.</p>
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