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1. Comparison of SenSura Mio Concave and standard flat appliance
President’s message

Future under construction

Elizabeth A. Ayello
PhD, RN, CWON, ETN, MAPWCA, FAAN
WCET® President, 2018–2020

This is the last President’s message for 2018 that commemorates the 40th anniversary of the founding of the WCET®. The year began with then President Susan Stelton thanking all who have served the WCET®. In issues 2 and 3, I talked about some of the history of WCET® and people in the past who helped shape this organisation. Their dreams and efforts created the vibrant association that is today’s WCET®. But it is now time to turn our attention to the future.

Vanna Bonta, writer and actress, said “dreams are the food of human progress”. WCET® has some big dreams and is making great progress to realise those dreams. Let me tell you a little about WCET’s future, which the Executive Board (EB), committees and advisory panel members are working diligently to achieve.

In this Journal issue, you will read about the results of the WCET® 2017 membership survey. The EB has implemented many of the suggestions that you, our members, want. This includes a prorated membership fee for new members for the first time they join the WCET®. This allows those who join later in the year to pay a reduced amount, but they must join up for the next year at the same time. The amount is prorated by each issue of the WCET® Journal. For example, if a new member joins after the third issue of the WCET® Journal has been mailed in 2018 to members, they would pay the prorated amount of £7 plus £25 for 2019 membership fee for a total amount of £32 (see Figure 1).

One of the recurring survey participants’ comments was the need for WCET® to have more educational resources such as webinars and printed materials, including the International Ostomy Guideline and the two pocket guides translated into languages other than English (LOTE). WCET® already has posted on our website, a webinar on “How patients’ and nurses’ diverse cultures affect nursing care” in English and Spanish by Larry Purnell and the 3M-sponsored “Skin Tears” in Portuguese and English by Vera Santos. In celebration of World Ostomy Day on 6 October 2018, Hollister sponsored a webinar by Jan Colwell on “Management of Peristomal Complications — The Latest Evidence”, which was translated into Chinese by Yajuan (Julie) Weng. Denise Hibbert, Education Chairperson and her committee have been working very diligently and are planning even more webinars in multiple languages, including translating the “Management of Peristomal Complications” into Spanish. Thank you, Denise Hibbert, Jen Wood, all our webinar speakers and translators, as well as our industry partners for their sponsorship. Because of all of your combined efforts, WCET® is able to make these valuable educational webinars available. Denise Hibbert and the Education Committee are also planning a WCET® resource on incontinence care. Laurent Chabal, Jenny Prentice and I continue to work on the second edition of the International Ostomy Guideline (IOG). WCET® is pleased that, once again, Hollister is sponsoring the revision of the IOG. If you have ideas for new educational materials or wish to sponsor a webinar or other educational initiatives, please contact Denise Hibbert.

The WCET® Journal is changing for 2019. This is because members want the WCET® Journal to once again attempt to achieve Medline indexing. In order to do this, Greg Paull, our publisher, and Jenny Prentice, WCET® Journal Editor, have developed a plan to reconstruct the format of both the WCET® Journal and the Bulletin. Beginning in 2019, members will find that both the WCET® Journal and Bulletin have been redesigned. One of the biggest changes will be the renaming of the WCET® Bulletin to include the byline — The Official Magazine of the WCET®. Some sections now in the Journal will move to the Bulletin. One example is the International Delegate (ID) page with the flags and the current format of the roll of honour. Information about the IDs and donors
will still be in the Journal, but it will look much different. All authors of WCET\textsuperscript{o} Journal manuscripts must include a conflict of interest statement and keywords. No advertisements can be in between the pages of an article. Association information, including the President’s message, Congress update, et cetera, will move to an Association news update section of the Journal. Of great importance to achieving Medline indexing will be a reimagining of the Journal Editorial Board page. All these changes are necessary to illustrate to Medline the scientific rigour of the WCET\textsuperscript{o} Journal.

We are delighted that the WCET\textsuperscript{o} Journal will also continue to be the official journal of the International Inter-professional Wound Care Group (IIWCG). WCET\textsuperscript{o} remains extremely grateful to our journal Sustaining Partners: Coloplast, Hollister, Dansac, Welland and Calmoseptine for continuing to support the English version of the WCET\textsuperscript{o} Journal.

Thanks to the efforts of Jen Wood, WCET\textsuperscript{o} has just launched its online store. Members and non-members can go on the WCET\textsuperscript{o} website and order the WCET\textsuperscript{o} educational written materials, such as the International Ostomy Guideline (IOG) in either book or electronic PDF format, the Ostomy Pocket Guide on complications or stoma siting. Karen Bruton and the Publications and Communications Committee are reviewing the website to see what improvements (if any) are needed to make the WCET\textsuperscript{o} website even more user-friendly. Denise Hibbert and the Education Committee are also planning a WCET\textsuperscript{o} resource on incontinence care.

Construire l’avenir

Voici le dernier message de la Présidente pour 2018, année qui a commémoré les 40 ans de la création du WCET\textsuperscript{o}. L’année a débuté par un mot de Susan Stelton, alors Présidente, remerciant tous les membres, qui ont servi le WCET\textsuperscript{o}. Dans le numéro 2 et 3 du Journal, j’ai évoqué certains aspects de l’histoire du WCET\textsuperscript{o} et des personnes qui ont contribué à façonner cette organisation. Leurs rêves et leurs efforts ont fait que le WCET\textsuperscript{o} est maintenant une association dynamique. Mais il est maintenant temps de se trouver vers l’avenir. Vanna Bonta, écrivaine et actrice, disait “Le progrès humain se nourrit des rêves”. Le WCET\textsuperscript{o} a de grands rêves et progresse à grand pas pour les réaliser. Permettez-moi, de vous parler un peu de l’avenir du WCET\textsuperscript{o} que les membres du Comité Exécutif (CE), des Commissions et du Comité Consultatif s’emploient à atteindre avec diligence.

Dans ce numéro du Journal, vous trouverez un article concernant les résultats de l’enquête réalisée auprès des membres du WCET\textsuperscript{o} en 2017. LE CE a déjà implémenté nombre des suggestions que vous avez émises. Parmi celles-ci, des frais de cotisation qui sont, pour les nouveaux membres, calculés de façon proportionnelle selon le moment de l’année elles/ils ont rejoint l’association. Ainsi, les personnes qui sont devenues membres plus tardivement payeront moins pour l’année en cours tout en restant membre pour au moins une année de plus. Ce montant de cotisation figurerà dans chaque numéro du Journal du WCET\textsuperscript{o} en tenant compte de ce prorata. Ainsi, par exemple, si un nouveau membre a rejoint le WCET\textsuperscript{o} après l’envoi postal du numéro 3 du Journal aux membres, elle/il ne devra payer qu’une cotisation d’un montant de £7 pour l’année 2018 et de £25 pour l’année 2019, soit un total de £32. Voir la figure 1.

Un des commentaires récurrents des participants à l’enquête était le besoin d’avoir des conseils de ressources éducatives dans d’autres langues que l’Anglais; des séminaires en ligne et des brochures telles que les Recommandations Internationales sur les soins aux personnes stomisées et nos deux livres de poche. Le WCET\textsuperscript{o} a déjà mis en ligne, sur notre site web, le séminaire en ligne de Larry Purnell.


Nous sommes ravis que le Journal du WCET® continue d’être le journal officiel du Groupe International et Interprofessionnel en soins de plaies (IIWCG). Le WCET® est extrêmement reconnaissant à nos partenaires financiers du Journal que sont Coloplast, Hollister, Dansac, Welland et Calmoseptine pour continuer de soutenir la version anglaise du Journal du WCET®.

Merci aux efforts de Jen Wood qui ont permis la mise en ligne de la boutique virtuelle du WCET®. Les membres et non membres peuvent y accéder depuis le site du WCET® et commander des ressources éducatives éditées par le WCET® comme les Recommandations Internationales sur les soins aux personnes stomisées (IOG), en version électronique pdf ou papier, le guide de poche sur les complications stomiiales ou celui sur le repérage des stomies. Karen Bruton et la Commission Publications et Communications examinent actuellement le site web pour voir quelles améliorations pourraient être faites (s’il y en a) afin d’en rendre la navigation encore plus conviviale. Denise Hibbert et la Commission Education planifient également une ressource du WCET® en lien avec les troubles de la continence.

Dee Waugh, la Coordinatrice des congrès et des rencontres, en collaboration avec Jen Wood, est actuellement en train de travailler avec les membres de l’association des Infirmier-e-s Stomatathérapeutes du Royaume Uni (ASCN-UK) afin de poursuivre l’organisation de notre congrès commun qui aura lieu à Glasgow en 2020. La trésorière du WCET®, Alison Crawshaw, qui habite en Ecosse, est un membre de son comité d’organisation. Arum Pratiwi et la Fondation Norma N. Gill® sont actuellement en train de réviser les formulaires de demande de bourses. Merci de prendre connaissance de la bourse Marylyn McManus qui est disponible pour les membres africains du WCET®.
C'est un honneur et un privilège pour moi en tant que votre Présidente de soutenir cette équipe de bénévoles exemplaires qui travaille sans relâche pour le WCET®. Le WCET® va continuer d’avancer en 2019. Comme vous pouvez le constater, un grand nombre de personnes œuvrent ensemble pour poursuivre la réalisation du rêve de Norma. Comme le relève Colin Powell «Un rêve ne devient pas une réalité par magie, cela demande de la sueur, de la détermination et du travail acharné». Alors rejoignez-nous dans ce travail bénévole pour le WCET®.

Cordialement,
Elizabeth

未来正在建设中

这是纪念WCET®成立40周年在2018年最后的一次主席信息。今年开始时主席Susan Stelton感谢所有为WCET®服务的人。在第2和第3期中，我谈到了WCET®和过去曾帮助建设这个组织的人的一些历史。他们的梦想和努力创造出了今天的WCET®。但这充满活力的组织。但现在是时候把注意力转向未来了。作家和女演员Vanna Bonta说“梦想是人类进步的食物”。WCET®有一些重大的梦想，并且在实现这些梦想方面取得了很大的进步。让我告诉你一点关于WCET®的未来，它是执行委员会（EB）, 委员会和顾问小组成员正在努力实现的目标。

在本期期刊中，您将了解到WCET®2017年会员调查的结果。执行委员会已经实施了许多您的建议。这包括新会员首次加入WCET®时按比例分配的会员费。这允许那些在今年晚些时候加入的人支付较少的金额，但他们必须同时加入作为明年的会员。金额分配按每期WCET®期刊作比例。例如，如果新会员在2018年第三期WCET®期刊邮寄给会员后加入，则他们将按比例支付7英镑加上2019年25英镑的会员费，共计32英镑。见图1。

<table>
<thead>
<tr>
<th>WCET®新会员费用</th>
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<tr>
<td>1月1日-3月31日</td>
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<tr>
<td>3月2日-5月31日*</td>
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<td>6月1日-8月31日*</td>
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<td>9月1日-10月31日*</td>
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<td>11月1日-12月31日*</td>
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</table>

* 由于总会的范围可能根据Greg Paull的财务支出的时间而有所改变

Figure 1

此经常性调查参与者们的评论之一是WCET®需要更多的教育资讯，如网络研讨会和印刷品。包括国际造口指南和翻译成英语以外语言的两份袋装指南（LOTE）。

我们很高兴WCET®期刊也将继续成为国际跨专业伤口护理组（IWCG）的官方期刊。

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网络研讨会是我们的重要活动，我们计划在失禁护理方面提供更多的网络研讨会。如果您对新的教育材料有构想或希望赞助网络研讨会或其他教育活动，请联络Denise Hibbert。

**关于合作伙伴**

我们已经和多家公司建立了合作伙伴关系，并将定期推出新活动。如果您想了解更多信息，请访问我们的网站。

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口袋装指南或造口定位的袋装指南。Karen Bruton和出版和通讯委员会正在审查网站，看是否需要改进（如果有的话），以使WCET®网站更加易于使用。Denise Hibbert和教育委员会也计划在失禁护理方面提供WCET®资讯。

Dee Waugh，会议协调员以及Jen Wood正在忙着沟通，并将与英国造口护士协会（ASCN-UK）的成员会面，探讨2020年10月在格拉斯哥召开的联合大会。WCET®财务主管，Alison Crawshaw居住在苏格兰，她也是会议组委会的成员。Arum Pratiwi和Norma N. Gill基金会正在忙着审查奖学金申请表，寻找关于非洲WCET成员的Marylyn McManus奖学金的信息。

根据在吉隆坡大会上的投票结果，宪法咨询小组正在研究撰写宪法修改建议，即将副主席的头衔替换为President-Elect以及有一个四年任期的执行委员会和委员会主席。

作为您的主席，我很荣幸地带领这支出色的志愿者团队，他们为WCET®不知疲倦地工作。WCET®在2019年将向前继续发展。正如您所看到的，它需要许多人的共同努力才能继续将Norma的梦想变为现实。我们还有很多工作要做。正如科林鲍威尔说:“通过魔法，梦想不会成为现实，它需要汗水，决心和努力工作”。所以，请加入我们WCET®的志愿工作。

此致

伊丽莎白
Editorial

Medline indexing: Aspiring to reach for the stars

Scientific journals are recognised as important contributors for the dissemination of new knowledge in relation to research or practices within a specialty field. Their impact on society in general is vast. From a health perspective, individual practitioners, specialty groups, researchers, health planners, patients and governments have all benefited from the experiences of others and pragmatic knowledge published.

Philosophical Transactions was the first scientific journal to be published on 6 March 1665. The ‘Royal Society of London for Improving Natural Knowledge’ was granted permission to establish the journal by King Charles II to inform the Society’s Fellows, other scholars and the public of current scientific discoveries. Philosophical Transactions remains the oldest journal in publication. The principles of scientific writing and peer review are attributed to Henry Oldenburg, the founding Editor of Philosophical Transactions.

In 1980, the WCET® newsletter ‘Newsline’ became the WCET® Journal, which has continued to inform and educate clinicians worldwide on stoma, continence and wound management. The WCET® Journal is currently indexed in CINHAL (Cumulated Index to Nursing and Allied Health Literature), which emphasises nursing and the allied health disciplines.

In her current President’s message, Dr Elizabeth Ayello identified WCET®’s members’ desire from the 2017 membership survey to apply for Medline indexing, the purpose of which would be to “validate the scientific rigour behind publication of the WCET® Journal”. Medline is the largest sub-set of PubMed and encompasses all the biomedical fields. The majority of Medline Indexed articles are peer-reviewed. An earlier application for Medline indexing was not successful.

Additional to the requisite changes identified by the president, our publisher and I are reviewing publishing processes to strategically position the Journal to be Medline-compliant. These processes include: scrutinising the aims and scope of the Journal; reviewing guidelines for authors; and, reviewing the composition of the Editorial Board and peer reviewers to demonstrate international representation across the relevant disciplines of medicine, nursing, researchers, and allied health within the fields of wound, ostomy and continence. Having a highly skilled Editorial Board and pool of peer reviewers will assist us to evaluate and maintain the rigour, integrity and quality of articles published. Data captured within ScholarOne will be revised to meet Medline indexing criteria. These strategies will assist us to ‘reach for the stars’ and maximise the success of our submission to Medline.

Achieving Medline indexing will benefit the WCET®, WCET® members and contributing authors. Indexed journals are deemed to be of a higher scientific quality compared to non-indexed journals. Medline indexing may also lead to the WCET® Journal having a higher impact factor. Trends in impact factors are used to compare or rank the importance of journals within a specialty field by measuring how many times an article is cited by other authors within a specified period. High impact factors from an academic perspective are attractive to authors who may cite these to substantiate which journal to publish in or in which they have published to increase their academic standing.

In order to improve our Journal’s impact factor and increase the rate at which articles within the Journal are cited by others, we will be seeking to raise the bar with the quality and variety of articles published as well as seeking opportunities for translation into different languages to broaden our exposure.

All WCET® Journal Editors have acknowledged that writing for publication can be daunting, especially for new authors or authors where English is not the author’s primary language. Furthermore, writing for publication is a learned skill, whether writing a literature review, a case study, describing the aims, objectives and results of research studies or reformatting oral or poster presentations into a journal article.

To overcome these barriers, all WCET® Editorial teams have willingly mentored authors by providing constructive advice on article writing, guidance on grammar and sentence structure to improve writing skills overall and to guide authors through the peer review and publication processes. Writing workshops have been presented at previous WCET®
Congresses and publishing tips are available via webinar on the WCET® website.

Wonderful feedback supporting the above approach has been received. From Pat Walls, “Many thanks for all your assistance with this paper... it (now) sounds so interesting” (Pat Walls, Personal Communication, 2018).

“On behalf of the authors, I wish to express our appreciation for having our work published in a reputable journal like yours. It’s been a wonderful experience working with you” (Ogbogu Chinonye Juliet, Personal Communication, 2018).

“Thank you so much for the encouragement — I am very much a novice!” (Naomi Houston, Personal Communication, 2018).

The Editorial Team looks forward to supporting all authors to produce premium articles that will elevate the WCET® Journal’s status and improve our chances of being Medline indexed.

Regards,

Jenny

REFERENCES


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The following members have very generously given donations to help fund NNGF scholarships:

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Gregory Paul – Australia
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NNGF
Application of wound bed preparation theory in the management of a severe extravasation injury in a neonate: A case study

ABSTRACT

A common complication associated with pre-term infants in neonatal intensive care units are extravasation injuries (EI), which are a significant cause of iatrogenic morbidity and mortality.

This case study describes the management of severe extravasation injuries in a premature infant. The theories and principles of wound bed preparation such as debridement of necrotic tissue, infection control through reduction of wound bioburden, moisture balance and promotion of epithelial migration were employed to facilitate wound healing. After two months of careful wound care, the wound healed completely. There was no functional or cosmetic impairment and no scar formation: an excellent result overall.

Keywords: Premature infant, neonate, infusion extravasation, moist wound healing, wound bed preparation.

INTRODUCTION

Intravenous infusions are common clinical drug delivery methods. Extravasation injuries (EI) are caused by the unintentional leakage of infused fluid (vesicant solution or medication) into the surrounding tissues outside the normal vascular pathway as a result of the intravenous (IV) access device piercing or being dislodged from the vein.

The terms ‘premature infants’, ‘immature infants’ or ‘neonates’, refer to infants with a gestational age of between 28 and 37 weeks, a birth weight of less than 2500 g or a length of less than 47 cm.

Extravasation injuries are frequent adverse events in neonates that increase morbidity and mortality. Neonates are more likely to have EIs because of their immature skin and increased permeability of the stratum corneum, small fragile blood vessels, poor venous integrity and lack of subcutaneous tissue. They may also require longer periods of intravenous therapy. The incidence of EIs in neonates is reported to be between 2.4% and 70%, with approximately 93% of EIs occurring in neonates aged between 26 and 28 weeks' gestation.

The most frequently used anatomical sites for intravenous access in infants are the cubital fossa, forearm, dorsum of the hand and dorsum of the foot, as the skin and subcutaneous tissues are thinner at these locations. Subsequently, these are also the most common sites for EIs.
The degree of tissue damage from EIs is related to numerous factors\textsuperscript{5,13,14} (Table 1).

There are many common IV solutions and medications that predispose to EI, such as: cardiovascular active, anti-arrhythmia and thrombolytic agents; antibiotics (for example, penicillin, vancomycin); high concentrations of potassium supplements; anti-tumour drugs; and, blood and platelets. Parenteral nutrition is the most common cause of EIs in infants. All these agents irritate the venous endothelium, increasing the risk of venous rupture\textsuperscript{5-7,10,14,15}.

Once IV infusion leakage occurs, quick effective remedial treatment measures must be taken, otherwise leakage of IV fluids may cause blisters leading to skin necrosis, with significant risk of functional and cosmetic impairment, such as tendon and nerve damage, acute limb compartment syndrome and limb amputation. Hepatic and cardiac injuries may also occur. Premature infants are unable to verbalise pain or exhibit other cues to indicate discomfort in the event of fluid extravasation\textsuperscript{2,7,10,12,14,16,17}. Tissue impairment from a vesicant may evolve over time, becoming apparent 48–72 hours after the extravasation occurs\textsuperscript{6,12}. Claims of medical negligence may also arise due to the adverse consequences of EIs\textsuperscript{18}.

Table 2 provides a method of classifying EIs to facilitate clinical management\textsuperscript{14}.

CASE STUDY

Patient overview and presenting complaint

The patient was a premature female infant of 26+3 weeks of gestational age, with a birth weight of 960 g. Two days after birth, the infant was diagnosed with neonatal necrotising enterocolitis. On 8 January 2017 at 3.30am, under general anesthesia the infant underwent a bowel resection, with formation of an ileostomy to remove the segment of necrotic bowel as well as flushing and drainage of the abdominal cavity.

Table 2: Staging of EI according to clinical findings

<table>
<thead>
<tr>
<th>Stage</th>
<th>Characteristics and clinical findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Painful intravenous site</td>
</tr>
<tr>
<td></td>
<td>No erythema</td>
</tr>
<tr>
<td></td>
<td>No swelling</td>
</tr>
<tr>
<td>II</td>
<td>Painful intravenous site</td>
</tr>
<tr>
<td></td>
<td>Slight swelling (0–20%)</td>
</tr>
<tr>
<td></td>
<td>No blanching</td>
</tr>
<tr>
<td></td>
<td>Good pulse below infiltration site</td>
</tr>
<tr>
<td></td>
<td>Brisk capillary refill below infiltration site</td>
</tr>
<tr>
<td>III</td>
<td>Painful intravenous site</td>
</tr>
<tr>
<td></td>
<td>Marked swelling (30–50%)</td>
</tr>
<tr>
<td></td>
<td>Blanching</td>
</tr>
<tr>
<td></td>
<td>Skin cool to touch</td>
</tr>
<tr>
<td></td>
<td>Good pulse below infiltration site</td>
</tr>
<tr>
<td></td>
<td>Brisk capillary refill below infiltration site</td>
</tr>
<tr>
<td>IV</td>
<td>Painful intravenous site</td>
</tr>
<tr>
<td></td>
<td>Very marked swelling (&gt;50%)</td>
</tr>
<tr>
<td></td>
<td>Blanching</td>
</tr>
<tr>
<td></td>
<td>Skin cool to touch</td>
</tr>
<tr>
<td></td>
<td>Decreased or absent pulse*</td>
</tr>
<tr>
<td></td>
<td>Capillary refill &gt;4 seconds*</td>
</tr>
<tr>
<td></td>
<td>Skin breakdown or necrosis*</td>
</tr>
</tbody>
</table>

The theory of wound bed preparation encompassing the TIMES (Tissue, Infection, Moisture, Edges, Surrounding skin) framework focusses on clinicians actively intervening to stimulate wound healing through the removal of necrotic tissue, prevention of infection, reducing excessive wound moisture, controlling oedema, improving wound bed vascularity, promoting advancement of wound edges to close the wound and preservation of the peri-wound skin\textsuperscript{19,20}. Methodical assessment and preparation of the wound bed enhances the ability of dressing products to assist wound healing processes\textsuperscript{21,22}.

This case study describes the presentation and management of a neonate with severe EIs. The EIs were managed by adhering to wound bed preparation theory and practices. The wound healed completely without limb dysfunction or scar contracture. Most importantly limb amputation was avoided.

Table 1: Common causes of EI
During the operation an IV infusion delivered by an infusion pump was inserted into the infant’s left leg to administer IV fluids of 4:1 liquid sodium (GS) solution of 10% + 10% potassium chloride fluids, a total of 36 ml.

Systemically, the infant recovered well from her surgery. A physical examination identified the following parameters: T 35.5°C; HR 130 times/min; BP 48/26 mmHg; SPO2 89%; weight 1050 gm and she was awake and reacting well to stimuli. She had an endotracheal tube and was mechanically ventilated. The abdomen was slightly distended, with weak bowel sounds. An indwelling abdominal cavity drainage tube was patent and the abdominal dressing was intact, with no obvious bleeding or exudate. The ileostomy was functional and covered by a one-piece pouch.

Post-operatively and once the infant was back on the ward it was noticed her left lower extremity at the IV infusion site was swollen and the skin was dark purple on the front and inside of the lower leg. Her skin integrity was further impaired with blisters present on her ankle and the skin on her feet and toes was dark red. There was swelling on the back of the foot (Figure 1). Her skin temperature was also lower than normal. On palpation, the dorsal pedis artery pulse beats were weak.

According to the American Academy of Infusion Nursing Society (INS) criteria, these symptoms were indicative of IV infusion EI.

Ultrasound of the dorsal pedis artery showed a subcutaneous effusion of the lower extremities, disruption of the blood supply to the skin and that left fascia compartment syndrome could not be excluded. On medical review, microsurgery was discounted and the consulting surgeon recommended conservative treatment of the patient's lower limb and EIs.

**INTERVENTIONS AND WOUND MANAGEMENT PLAN**

**Overall management**

Following a comprehensive review of the overall condition of the child, a conservative approach was adopted to reduce the occurrence of further complications, which included:

1. Stopping the IV infusion into the left leg immediately, pulling out the needle, and compressing the catheter insertion site for about 5 minutes.

2. Facilitating the reduction of oedema and discharge of fluid from subcutaneous tissue in the left leg around the IV infusion site by using a #11 sterile surgical blade to puncture oedematous tissue at 5 mm apart to a depth of 3 mm or less. After the puncture sites were made, clear liquid exudate was gently expressed. Prior to this procedure, the infant was given analgesia of Fentanyl 22 μg/Kg intravenously and the wound and peri-wound skin was disinfected using 5% povidone iodine.

3. Reduce the diffusion of the extravasation exudate into the deep tissues and re-soak the skin, irrigating the infusion site with a 5 ml syringe containing saline using a 24-gauge venous indwelling needle, then dry with a sterile gauze.

4. Covering the wound with a hydrofibre silver dressing and gauze, which had the double function of controlling infection and absorbing fluid exudate.

5. Elevating the limb to 45° to further reduce swelling of the lower limb and promote drainage and circulation of the lower extremities.

A PICC catheter was placed under the arm to establish venous access throughout the treatment period. Antibiotics were given according to culture and sensitivity by IV infusion.
to prevent bacterial (for example, Meridien south pin 0.020g q8h) and fungal infections.

Infusions of suspended red blood cells to correct anaemia and dopamine to improve circulation were given as well as vitamin K1 intramuscular injections (QuTing preventing haemostatic) to prevent bleeding. The infant's body temperature was maintained between 36°C and 37°C (there was less than 1°C difference in temperature between daytime and night-time). To prevent cross-infection, stringent hand hygiene was enforced for all health workers coming into contact with the infant.

The nursing objectives for managing the infant’s EIs were to:

1. Reduce absorption of exosmosis, prevent infection, and promote wound healing.
2. Reduce scar formation and prevent limb dysfunction.
3. Strengthen communication with family members regarding the management of the infant’s wounds to avoid medical disputes.

WOUND MANAGEMENT PLAN

General wound assessment and management

A comprehensive wound assessment was undertaken at each dressing change, which included recording: wound measurements in accordance with international methods (length x width x height cm); colour of the wound bed; the amount and type of exudate; the amount of slough or necrotic tissue within the wound; whether there was any undermining; and the condition of the wound edges and peri-wound skin. A digital camera was used to take photos of the wound to assist with recording wound healing progress.

On evaluation of the above parameters at each dressing change, decisions were made as to which dressing products were used on the wound and peri-wound skin to facilitate wound healing.

Debridement of necrotic tissue and prevention of infection

By 11 January, the oedema within the left leg had substantially subsided. However, dry gangrene, which was hard and leathery, had formed on the surface of the wound (Figure 2). As this gangrenous tissue was impairing wound healing and adding to the potential for local and systemic infection, this layer of avascular tissue needed to be carefully debrided.

The debridement method chosen was autolytic debridement due to the age of the infant and nature of the wound. The dressing procedure was as follows:

1. Disinfect the wound and surrounding skin with 5% povidone iodine.
2. Flush and cleanse the wound and surrounding skin with sterile normal saline and sterile gauze to remove any loose necrotic tissue.
3. A hydrocolloid dressing was placed on the wound. The size of the dressing was cut at least 0.5–1 cm bigger than the wound area. The hydrocolloid would facilitate autolytic debridement as well as maintaining a moist wound bed\(^9,16,25\) (Figure 3).

The wound was closely monitored during the debridement process. It was noted over time that while the eschar gradually softened, and the densely adherent slough became moist and loose in appearance, absorption of the wound fluid led to further significant limb and foot oedema (Figure 4). Therefore, the dressing was changed to an absorbent foam dressing\(^27\). At each dressing change, the amount of necrotic tissue removed was documented. After several dressing changes, the colour of the tissue within the wound bed changed from black to yellow, then to red. Processes to stimulate autolytic debridement were discontinued when all necrotic tissue was removed from the wound bed. The humidity of the incubator was maintained between 55% and 65%, thus preventing dryness affecting autolysis.

**Promoting deposition of granulation tissue and epithelialisation**

A review one month later on 12 February identified the wound had markedly improved. Localised redness and oedema had obviously reduced. The wound exhibited approximately 25% granulation tissue and 75% yellow necrotic tissue, with a moderate amount of light-yellowish exudate. There was no malodour, the skin temperature was normal and new epithelial tissue could be seen (Figure 5).

At this point, the nursing foci was to prevent further oedema, maintain moisture balance within the wound, promote the growth of granulation tissue, and endeavour to reduce scar formation as the wound continued to heal.

The wound management regimen to maintain moist wound healing at this point involved: continuing to clean the wound with sterile normal saline and gently patting it dry. To facilitate moisture balance, prevent infection and encourage deposition of granulation tissue, a silver-impregnated foam dressing was applied to areas of healthy wound bed. A thick hydrocolloid cut to size was used to stimulate autolytic debridement of the remaining necrotic tissue\(^27\). An anti-allergy tape was used to secure the dressing and the dressing was changed every 2 to 3 days.

By 17 February, the entire wound bed was covered with red granulation tissue. Ten days later, on 27 February, the wound edges were rapidly epithelialising. A thin hydrocolloid dressing was applied to accelerate the final stages of healing and to protect newly deposited epithelial tissue\(^9,16,25\) (Figures 6 and 7).

**DISCUSSION**

Neonates, especially those of a gestational age less than 27 weeks, suffer from systemic immature organ development, which may result in temporary or permanent physiological and anatomical defects. Impairments such as immature epidermal skin barrier, immunity and thermoregulation systems are common. An immature epidermal skin barrier results in more fragile skin, greater susceptibility to irritants and increased risk for percutaneous absorption of IV or topical agents\(^5-9,16\). Further, as the stratum corneum is thinner, with reduced barrier function in preterm infants less than 34 weeks’ gestation, it allows water to pass from the body to the outside and substances applied to the skin to be absorbed proportionally to the degree of immaturity\(^9\).

Under these circumstances, the chances of premature infants experiencing EIs are increased due to the factors identified in Table 1. Furthermore, the narrow lumen of blood vessels and the relatively slow rate of blood perfusion both increase the duration of IV solutions in the blood vessels, which may exacerbate associated irritation of the blood vessel walls, increasing their susceptibility to EIs.
The management of this infant’s EI was predicated on the theory of wound bed preparation and TIMES. The removal of necrotic tissue is an important part of wound bed preparation. Necrotic tissue is avascular tissue that supports bacterial growth and forms a barrier that interferes with wound repair. Therefore, it needs to be removed to decrease the bio-burden within the wound, prevent infection and allow the wound to heal.

The timing and type of wound debridement in EIs is very important. In the early stage of IV extravasation, it is advisable to immediately and effectively reduce the absorption of leaked IV fluid within the subcutaneous tissues, which is enhanced by the permeability of neonates’ immature and fragile skin structures. As autolytic debridement agents liquefy necrotic tissue it was important in this case to use super-absorbent dressings to contain the exudate to reduce further oedema within the lower extremities and foot.

It was also important to ensure the area of necrosis was clearly defined and limited in depth, so as to avoid injury to normal tissue from autolytic and conservative sharp debridement methods. Furthermore, it was imperative to protect the blood vessels, nerves and tendons in the process of debridement, to avoid functional injury.

Compared with other debridement methods, autolytic debridement is usually considered a safe but slower method of debridement method, which is seen as more suitable for children or infants as it often negates the need for surgical intervention and is less painful.

Management of a wound is a dynamic process, and the astute clinician should frequently reassess the wound with regard to wound bed factors, clinical characteristics of the wound and peri-wound skin and consider these parameters, with regard to the patient’s condition overall. The use of wound care dressings and other products should be modified accordingly.

There is a lack of consensus on the local management of EI wounds in neonates. Where, however, EIs result in moderate to severe swelling, blanching, pain at the site with skin that is cool to the touch, with or without decreased or absent distal pulses and evidence of tissue necrosis, the use of an aqueous gel followed by the application of a hydrofibre sheet covered by a hydrocolloid dressing has been suggested as a reasonable approach to management.

Tissue necrosis caused by IV leakage, is a serious, often avoidable adverse event in neonates and infants. Medical and nursing staff should be aware of the risk factors for EI and closely observe IV sites for symptoms of EI. Avoidance of serious complications such as scar contracture, limb dysfunction and amputation are primary considerations. At the same time, communication with the families of patients with EI is important to ensure they understand the causes and management of EIs to avoid the occurrence of medical disputes.

SUMMARY
This article has highlighted one case of a neonate with severe skin necrosis caused by peripheral IV extravasation. The EI injury was managed by wound bed preparation theory, including debridement of necrotic tissue, infection control measures, maintenance of moisture balance and promotion of the epithelial migration processes. The outcome was positive. The wound healed completely, with no limb dysfunction or scar contracture. Most importantly, limb amputation was avoided.

REFERENCES
Pressure injury prevention: A shared inter-professional responsibility by enhancing pressure injury knowledge among resident physicians

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ABSTRACT

Aim: This clinical intervention study had three aims, which were to: enhance resident physicians’ knowledge on conducting health and psychological histories when assessing pressure injuries; assess resident physicians’ knowledge and clinical practice in assessing and staging pressure injuries; and to develop an educational intervention on recognising and managing the associated risk factors in pressure injury aetiology.

Methods: A quasi-experimental interventional pre/post-test study design was used to assess resident physicians’ knowledge of pressure ulcers. A needs analysis of bedside assessment skills required by resident physicians to assess pressure injuries was undertaken. Theoretical learning and experiential clinical teaching methods were used in combination to assess and enhance resident physicians’ understanding of pressure injuries aetiology and management.

Results: Resident physicians’ theoretical knowledge of pressure injuries improved from 40% to 82% post theoretical teaching. Improved clinical practice in the assessment and staging of pressure injuries by resident physicians after implementation of supervised bedside teaching was observed.

Conclusion: This study demonstrated that resident physicians’ knowledge, assessment and management of pressure injuries and role within the inter-professional team was enhanced through the implementation of theoretical learning and supervised bedside clinical teaching strategies.

INTRODUCTION

From the patients’ perspective, the burden of pressure injuries is substantial due to the significant impact they have on the health-related quality of life of affected individuals. Pressure injuries develop as a result of a combination of individual and environmental influences, resulting in significant costs of treating those pressure injuries to patients and health-care systems. These factors underscore the need for a combined approach from health professionals, each working within their own scope of practice jurisdictions and the policy decision-makers within the health-care systems, to take coordinated action in order to prevent, treat and heal pressure injuries more effectively and efficiently.

The burden of pressure injuries as a chronic disease is far-reaching and onerous. Average costs associated with the treatment of a Stage 4 PI and related complications in the United States are $129,248 for a single episode of hospitalisation. Regardless of a person’s level of risk, all patients should receive preventative pressure injury care and interventions to prevent skin breakdown adding to morbidity and mortality. High-risk conditions do not make the development of pressure injuries inevitable; rather the management of risk factors that lead to tissue breakdown plays an important role to ensure that not all high-risk individuals will eventually develop pressure injuries.
BACKGROUND

The National Pressure Ulcer Advisory Panel (NPUAP) defines a pressure injury as “localized damage to the skin and/or underlying soft tissue usually over a bony prominence or related to a medical or other device. The injury can present as intact skin or an open ulcer and may be painful. The injury occurs as a result of intense and/or prolonged pressure or pressure in combination with shear forces”.

Additionally, the NPUAP added co-factors such as nutritional status, micro-climate and the innate ability of the patient to achieve bodily equilibrium to also have a role in the eventual formation of pressure injuries. As this international guideline was developed in conjunction with all the major continental pressure injury working groups, it is the guideline adopted by Sheikh Khalifa Medical City (SKMC) where this study was conducted. The NPUAP pressure injury staging system was used as teaching instrument in this study (Table 1).

Due to the cost burden associated with healing skin breakdown once it has occurred, the international trend is to focus on preventing pressure injuries before they can achieve bodily equilibrium.

Table 1: Pressure injury stages according to the National Pressure Injury Advisory Panel 2014 guideline taught to residents

<table>
<thead>
<tr>
<th>Clinical presentation</th>
<th>Stage</th>
<th>Description of definition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>Intact skin with non-blanchable redness of a localised area usually over a bony prominence. The area may be painful, firm, soft, warmer or cooler as compared to adjacent tissue.</td>
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<tr>
<td></td>
<td>2</td>
<td>Partial thickness loss of dermis presenting as a shallow open ulcer with a red/pink wound bed, without slough. May also present as an intact or open/ruptured, serum-filled blister.</td>
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<tr>
<td></td>
<td>3</td>
<td>Full-thickness tissue loss. Subcutaneous fat may be visible but bone, tendon or muscle is not exposed. Slough may be present but does not obscure the depth of tissue loss. May include undermining and tunnelling. The depth of pressure ulcer varies by anatomical location.</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Full-thickness tissue loss is present with visible exposed bone, tendon or muscle. There may be slough or eschar on some parts of the wound bed. If shear forces were present, it may include undermining and tunnelling. The depth of pressure ulcer varies by anatomical location.</td>
</tr>
<tr>
<td></td>
<td>Unstageable</td>
<td>Full-thickness tissue loss in which the base of the ulcer is covered by slough and/or eschar in the wound bed. Until the slough and/or eschar is removed, the true depth, and therefore correct stage is not known.</td>
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<tr>
<td></td>
<td>Deep tissue injury</td>
<td>A purple or maroon localised area of discoloured intact skin that may also presents with a blood-filled blister due to damage of underlying soft tissue from pressure and/or shear. The area may be preceded by tissue that is painful, with swelling (oedema) redness (erythema), warmer or cooler as compared to adjacent tissue.</td>
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</table>
pressure injury development, and staging of pressure injuries. Assessment, identifying and ameliorating risk factors for resident physicians about processes for pressure injury risk study, therefore, was aimed at enhancing the knowledge of young and upcoming medical fraternity at SKMC. This care of pressure injuries was deemed to be lacking in the care but the knowledge of correct staging, assessment and education and participate in workshops for pressure injury. Nurses and some medical staff at SKMC receive regular occurrence as a result of poor nursing practices nursing problem; the implication being that pressure injuries take, as historically pressure injuries were viewed as mainly a nursing to include doctors as well. This was a bold step to roles and responsibilities for prevention beyond the realm of improvement of preventative initiatives by expanding the

Global prevalence and incidence of pressure injuries have remained essentially the same in the past 30 years with the highest incidence rates among older adult patients and patients with spinal cord injuries. Overall, within SKMC our setting compares favourably with hospital-acquired pressure injury incidence rates reported around the world. The incidence of pressure injuries at SKMC in 2017 are presented in Table 2, where it clearly depicts that despite the presence of an aggressive preventative algorithm (Figure 1), hospital-acquired pressure injuries still occur in our setting, although in limited numbers. This served as the trigger for formal prevention initiatives by expanding the roles and responsibilities for prevention beyond the realm of nursing to include doctors as well. This was a bold step to take, as historically pressure injuries were viewed as mainly a nursing problem; the implication being that pressure injuries occurred as a result of poor nursing practices.

Nurses and some medical staff at SKMC receive regular education and participate in workshops for pressure injury care but the knowledge of correct staging, assessment and care of pressure injuries was deemed to be lacking in the young and upcoming medical fraternity at SKMC. This study, therefore, was aimed at enhancing the knowledge of resident physicians about processes for pressure injury risk assessment, identifying and ameliorating risk factors for pressure injury development, and staging of pressure injuries so their development can be avoided. Further, to facilitate active engagement of the resident physicians in bedside care from an inter-professional perspective and reduce any negativity on the issue of pressure injuries.

**Study aims: setting achievable goals**

The main purpose of this study was to raise the awareness of SKMC house staff (junior resident level) of the importance of the key principles of pressure injury assessment and management to enable them to be active participants of the inter-professional team in addressing pressure injury-related outcomes positively.

The first goal of this study was to enhance resident physicians’ knowledge on how to conduct a detailed health and psychological history as part of the initial assessment of a person with a pressure injury. Another goal was to assess their knowledge in conducting a detailed bedside assessment of the patient that involved completing a pressure injury risk assessment as well as staging pressure injuries present. The last goal was to establish an educational intervention on how to identify and mitigate the associated risk factors in pressure injury aetiology.

**METHODS**

An intervention methodology was used to conduct this study, which comprised the selection and adoption of a study framework, convening a study working group, pre/post-test written assessments of pressure knowledge, a needs assessment incorporating focus groups with key decision makers and the involvement of resident physicians in the development of an educational strategy.

**Focus-PDCA group discussion**

To facilitate the process of this study, the Plan, Do, Check, Act (PDCA) methodology was chosen. This quality framework aligned strongly with the governance systems of both SKMC and SKMC’s corporate body (SEHA — Abu Dhabi Healthcare Services Company). In addition, in order to address any perceived or actual gaps identified as a result of study outcomes the coordinating study team felt the PDCA intervention methodology approach was the preferred tool for implementation of the project. Figures 2 and 2a outline the process steps that underpin this study.

Through brainstorming, our inter-professional working group identified important stakeholders required for the completion of the project. Their roles and responsibilities were streamlined and clearly identified to have strong team collaboration (Figure 3).

**Knowledge assessment**

A pre/post-test format was used to assess resident physicians’ knowledge on pressure injury risk assessment and management and wound healing. The written test comprised five multiple-choice questions (Tables 3 and 3a).
Needs assessment: clinical focus groups

Two focus groups were conducted in this study. The initial focus group activity involved the Department of Internal Medicine’s supervisor and senior physicians, together with the wound care nursing group, senior managers of the medical-surgical units and a representative from the quality department. Brainstorming revealed that resident doctors are reluctant to approach the patient at the bedside in fear of doing something wrong. This indicated that resident physicians lack self-confidence in their knowledge and clinical skills that need to be applied to bedside care.

The second separate focus group was conducted with the resident physicians only. They identified their knowledge...
and skills gaps to be risk assessment for pressure injuries, accurate assessment and classification of pressure injury stages and recognition of the importance of the role of the medical profession in supporting preventive strategies to avoid complications rates in the facility.

As this information was perceived as a crucial link in the provision of inter-professional care of a patient with skin integrity needs, it was decided to provide an educational program for the resident doctors. Classroom education was followed by direct bedside grand rounds, together with the senior wound care nurses who functioned as mentors. In the initial focus group, the questions for the pre/post-tests was decided on after the educational content was agreed upon. This multipronged approach was chosen to ensure triangulation of resident physicians’ actual knowledge of skin-related conditions was translated into clinical practice at the bedside. Further, to ensure consistent use of the approved

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**Figure 2: The PDCA quality intervention process for this study**

- **PLAN**
  - INVESTIGATE
    - Brainstorming meeting targeting the needs of resident physicians
    - Identify their role in assessment for patient at risk for pressure injuries to prevent skin breakdown
    - Clarify the objectives and methodology
    - Identify team roles

- **DO**
  - ENLIGHTEN & IMPLEMENT
    - Improved the pressure injury risk assessment through a pre-set questionannaire
    - Developed the assessment forms to document teaching
    - Developed a PI prevention educational leaflet
    - Statistical Analysis of the educational intervention

- **CHECK**
  - EVALUATE & VALIDATE
    - Gather and analyze results of needs analysis questionannaire
    - Design the training session content
    - Communication of the team regarding content
    - Education intervention process

- **ACT**
  - CORRECT & STANDARDIZE
    - Review post-test feedback
    - Address revisions in the system process if needed
    - Implementation of inter-professional pressure injury risk assessment actions

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**Figure 2a: Methodological process followed for educational intervention**

- Questionnaire for knowledge assessment → Bedside assessment of physicians (needs analysis) → Educational leaflet for healthcare professionals
  - Pre-test evaluation ↓ Educational sessions for physicians → Post-test evaluation
Braden Scale for pressure injury risk assessment and wound assessment, staging and management strategies for pressure injuries already followed in the hospital.

Theoretical education program

An education program on pressure injuries was developed for the resident physicians, based on the results of the pre-test knowledge questionnaire and resident physicians focus group needs analysis. Components of the education program therefore addressed:

- Risk factors for pressure injuries (as stipulated within the Braden Scale for Predicting Pressure Sore Risk).
- The effects of malnutrition, being fully bed- or wheelchair-bound, impaired perfusion and oxygenation.
- Impact of either a pre-existing pressure injury or stage 1 skin damage.
- The NPUAP pressure injury staging system (as this underpins the SKMC pressure injury staging policy).
- Basic wound care principles.

The education program was of one hour’s duration and was delivered by the authors.

Educational leaflets on pressure injuries were developed to enhance the content of the education program and contained information on the Braden Scale, SKMC Pressure prevention pathway, how to conduct a patient assessment with cues for asking appropriate questions and illustrations on the NPUAP pressure injury staging system.

Clinical teaching

A clinical practice component at the bedside was added to the theoretical education program in a similar format to that of a clinical round. In these rounds, each resident physician group was supported by a member of the teaching team (the authors and senior wound care nurses) to bring the theoretical component into direct context at the bedside of patients with pressure injuries. This educational component was initiated after the educational sessions. The aim was to give the residents a practical opportunity to implement their understanding of pressure injury staging at the bedside in a real-life patient care scenario with wound assessment based on the lecture and educational leaflets received.

Data analysis

The focus group responses were collectively categorised into three action items namely: a structured educational intervention, a pre/post-test, and bedside clinical teaching to expose resident physicians to a holistic teaching experience using multiple approaches. Simple descriptive statistics were used to analyse results of the pre/post-test questionnaires.

Study approval

Approval to conduct the study was obtained from the SKMC Residency Program Director. The wound care team was also consulted regarding the perceived value of the study to sustain good practice in pressure injury prevention by resident physicians. Resident physicians provided verbal agreement to participate. Ethical approval was not deemed necessary as the study was educational and of low risk.

RESULTS

Pre/post-test knowledge questionnaire

A total of 25 resident physicians participated in the pre/post-tests. The pre-test score showed respondents achieved an average score of 40%. Following the education session for the resident physicians, the overall post-test score improved to 82% (Table 4). A 100% improvement in knowledge was not achieved with this one intervention only.

Clinical exposure analysis

Assessment of the clinical component was undertaken by the senior wound care nurse assigned to each clinical group and was done at the bedside. Only when resident physicians achieved 100% in determining the correct Braden score at the bedside, were they deemed competent in completing a risk assessment and could partake in the feedback discussion that followed thereafter.

All 25 residents took part in feedback discussion that consisted of themselves, the study investigators and the senior wound care nurses. This provided a prospective feedback scenario where discussing the bedside experience allowed the last remaining theoretical gaps that existed to be corrected and filled. As all resident physicians were encouraged to physically touch patients when completing the Braden assessment, it not only comforted patients who felt well looked after, the resident physicians verbalised increased confidence to conduct closer-to-the-patient care away from an office-only environment.
Educational intervention outcomes
The theoretical education program resulted in an increase of resident physicians’ knowledge of pressure injuries as indicated by the results of the pre-post-test questionnaires.

DISCUSSION
As health care professionals, our study team was vested in reducing the incidence and complication rates of pressure injuries in SKMC. A contributing factor, it was felt, was the perception of a gap in knowledge among the resident physicians about the prediction, classification, prevention and management of pressure injuries. In addition, the study group identified the lack of an organised structural education program for resident physicians on pressure injury prevention, routine pressure injury care and clinical wound management to manage pressure injuries.

Table 3: Knowledge questionnaire

Q1) which of the below is NOT a type of chronic wound as per World Healability Classification?
   a) Maintenance wound
   b) Healable wound
   c) Non-healable wound
   d) Progressive wound

Q2) Which of the below scale is NOT used in assessment for healing of pressure ulcer injuries?
   a) Waterlow scale
   b) Braden scale
   c) PUSH scale (Pressure Ulcer Scale for Healing)
   d) Norton scale

Q3: Entry of bacteria or other micro-organisms into a previously clean or sterile wound or skin is called:
   A: Colonisation
   B: Contamination
   C: Critical colonisation
   D: Infection

Q4. Patients should be assessed for pressure ulcer risk at which of the following intervals?
   A. An admission assessment is sufficient
   B. An admission assessment and a repeat assessment in 24 hours
   C. An admission assessment and a repeat assessment in 48 hours and every other day thereafter
   D. An admission assessment and a repeat assessment in 48 hours and at intervals based on severity and lability of the patient’s illness

Q5: A 42-year-old T-12 paraplegic patient presents with a two-month history of a left ischial pressure ulcer, Stage III by your examination. Which of the following is TRUE regarding this patient?
   A. Prompt muscle flap closure is warranted to prevent progression to Stage IV
   B. A swab culture of the wound that grows S. aureus warrants treatment with systemic antibiotics for six weeks prior to surgery
   C. The presence of significant necrotic tissue and foul drainage warrants a separate operative debridement prior to definitive closure of the wound
   D. A bone scan should be ordered to rule out osteomyelitis
   E. The superior gluteal musculocutaneous flap is the first choice for closure of this wound
Table 3a: Sample questions and findings in the resident physician pressure injury pre-test post-test

<table>
<thead>
<tr>
<th>Question</th>
<th>Possible answers</th>
<th>Finding</th>
<th>Correct answer</th>
</tr>
</thead>
</table>
| Which of the following is NOT used in assessment for healing of Pressure ulcer injuries? | A: Waterlow scale  
B: Braden scale  
C: PUSH scale (Pressure Ulcer Scale for Healing)  
D: Norton scale | Pre-test correct 12%  
Post-test correct 64% | A, B, D |
| Patients should be assessed for pressure ulcer risk at which of the following intervals? | A. An admission assessment is sufficient  
B. An admission assessment and a repeat assessment in 24 hours  
C. An admission assessment and a repeat assessment in 48 hours and every other day thereafter  
D. An admission assessment and a repeat assessment in 48 hours and at intervals based on severity and lability of the patient’s illness | Pre-test correct 68%  
Post-test correct 90% | D |
| A 42-year-old paraplegic patient presents with a two-month history of a left ischial pressure ulcer, Stage III by your examination. Which of the following is TRUE regarding this patient? | A. Prompt muscle flap closure is warranted to prevent progression to Stage IV  
B. A swab culture of the wound that grows S. aureus warrants treatment with systemic antibiotics for six weeks prior to surgery  
C. The presence of significant necrotic tissue and foul drainage warrants a separate operative debridement prior to definitive closure of the wound  
D. A bone scan should be ordered to rule out osteomyelitis. The superior gluteal musculocutaneous flap is the first choice for closure of this wound. | Pre-test correct 72%  
Post-test correct 97% | C |

Table 4: Pre/post-test results knowledge questionnaire

<table>
<thead>
<tr>
<th>Residents</th>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Post-test</td>
<td>82%</td>
<td>18%</td>
</tr>
</tbody>
</table>

In order to address these gaps, the study team decided on an intervention methodology: the PDCA framework together with a clinical exposure action item. The PDCA process allowed the study group to investigate these perceived deficits and apply interventions based on study outcomes.

This study has taken a bold step in establishing pressure injury prevention as a shared responsibility between all professions working within a hospital system to ensure better clinical outcomes with regard to pressure injury incidence levels.

In SKMC a formal screening protocol for pressure injuries exists, but many of the resident physicians were not aware of the protocols and clinical pathways as they had just entered the medical system as health professionals. It is, therefore, not unusual for this particular group to have exhibited the initial limited knowledge needed on the skills to perform an adequate pressure injury assessment as seen in their pre-test scores. The lack of medical education on chronic wounds and pressure injuries has long been recognised as a barrier to the implementation of best practice and inter-professional collaboration in wound management.

Kulkarni and Cox both report hospital intensivists, geriatricians and family physicians as lacking under- and postgraduate education on pressure injuries. The aim of this study’s education program, consisting of lectures and the distribution of education leaflets on pressure injury assessment, classification and management, was to achieve a 100% change in knowledge. Although that was not achieved, there was a marked improvement after the educational intervention in the pre/post-test scores obtained from 40% to 82%. There is a dearth of research that has investigated medical staff knowledge of pressure injuries before and after a structured education program.

What was clear from this study was that a single educational intervention as assessed with the pre/post-test survey format did not fully address the learning needs of the junior resident
physicians. Only after exposure to supervised clinical practice at the bedside could they manage to score 100% in the assessments (some on a second or third attempt). Once the clinical mentor of each team deemed each resident physician had passed their assessment they were able to participate in the prospective feedback discussion that served as a reflection on the learning experience.

What the study team has identified is that if a pressure injury education program has a strong relation to clinical practice that involves a bedside component as well, barriers in negativity are overcome, as stated by the residents themselves. The moment the theoretical knowledge is supported with enabling and reinforcing strategies to sustain health care professionals' knowledge that is directly related to bedside care, the educational content uptake is exponential. To date, the literature does not provide standard curricula or teaching techniques for the delivery of effective pressure injury prevention and management education for doctors.

The combined teaching interventions used in this study resulted in the study goals being achieved, albeit in a stepwise manner. The intervention strategies of theoretical and clinical education on pressure injury prediction, prevention and management bridged the gap identified in the knowledge questionnaires and needs analysis, which resulted in appropriate buy-in from the residents to transform their own clinical practice with regard to how they think and approach pressure injury prevention and management. More importantly, it significantly increased their confidence in applying theoretical knowledge and understanding of pressure injuries to direct patient care.

CONCLUSION

The management of pressure injuries is a complex model that involves equal participation of physicians, nurses, the wound care team, vascular and general surgery as well as patient and care givers. The knowledge levels of physicians, their resulting attitude and their awareness about skin breakdown aetiology, plays a vital role in the dissemination of information to peers and patients alike. This study identified that in providing proper educational sessions to young physicians, with inclusion of a significant bedside teaching component, their theoretical learning about people with pressure injuries increased. In consistently reinforcing pressure injury prevention and management as a responsibility for all health care professionals dealing with skin breakdown issues, this educational intervention is likely to result in better application of evidence-based pressure injury practices to the benefit of patients and health care systems alike.

REFERENCES


Challenge in practice — venous leg ulcer management: A case study demonstrating the role of the wound care nurse in a developing country

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ABSTRACT
This case study describes the management of a venous leg ulcer (VLU) over the right medial malleolus that had been present for more than six years. The aim of this case presentation was to assess whether combined treatment therapies available in a wound care clinic and supported by the organisation’s wound care management guideline (WCMG) had a significant impact on healing time. The patient’s history was obtained from the medical and wound care records and photographs of the wound's progression were undertaken respecting the institutional ethics criteria. The resultant improvements in wound healing were obtained between the 13th and 15th weeks, where complete healing was achieved after the implementation of the WCMG. Nurses with expertise in wound care play an essential role in the management of patients with wounds as they are often responsible for the design and/or implementation of any wound management guidelines and subsequent follow-up to ensure better patient outcomes.

Keywords: Venous ulcer, complex wounds, compression therapy, alginate, papain paste.

INTRODUCTION
Venous leg ulcers (VLU), sometimes called varicose or stasis ulcers, are the most common type of chronic leg ulceration that significantly affect quality of life. These complex wounds represent an increase in health care expenditure and physical and psychosocial suffering to individuals and families. Venous leg ulcers may be caused by three factors, either alone or in combination: 1) chronic venous insufficiency (CVI), 2) obstruction from either partial or complete blockage of the veins (for example, deep vein thrombosis), and 3) failure of the calf muscle pump function. As the ageing population grows, VLUs are expected to increase accordingly. A cross-sectional survey from Sweden aimed at identifying all patients with current leg ulcers found that 22% of individuals had their first VLU by age 40, whereas 72% had their first non-venous leg ulcers by age 60 and over. In the United States, it was estimated that between 10% to 35% of adults have some kind of CVI, whereas VLU affected 4% of the population 65 years or older. A systematic review of the prevalence of lower limb ulceration found that the prevalence rates in the United Kingdom ranged from 1.2 to 3.2 per 1,000 people. There is little research that studied the prevalence or incidence of VLU in Brazil. While the University Health Center’s study of varicose veins and CVI in 1755 adults over 15 years of age in Botucatu, a country town in the State of Sao Paulo, south-eastern Brazil, identified the prevalence of the most severe form of CVI was approximately 1.5% of active venous or healed ulcers, in the Maracanau study in the state of Ceará in the north-east of Brazil the prevalence was 66%.

The onset of VLU can be traumatic, secondary to infection, or due to an increase in oedema. Local dermatitis can also trigger the onset of VLU that results from contact irritation or allergic reactions and may present clinically as pruritus, redness, and blisters. These complex wounds are characterised by a cyclical pattern of healing and recurrence, with a 57% recurrence rate reported within 10.4 months after healing. Therefore, the management of VLUs is a challenge to health care providers and involves treating the causes, improving local wound care, and addressing patients’ needs and concerns.

The determination of the diagnosis also drives the planning of interventional therapies. Assessment, monitoring and evaluation of the healing process are essential tasks that must be performed and documented by a wound care specialist. In addition, evidence-based practice, clinical skills, and patient engagement in self-management are key for obtaining effective results in wounds that present with delayed wound healing.

Considering that VLUs are complex wounds and heal slowly, they therefore pose a challenge to health care professionals, particularly those working in a developing country with limited access to medical and clinical resources to facilitate wound healing. This paper reports a successful clinical case presentation of a slow-healing VLU and the role of the WCN in its management. Particularly, it highlights the positive results achieved after the implementation of a wound care management guideline (WCMG) in a wound care clinic with limited access to medical resources and modern wound management therapies. The effect these interventions had on healing time such a complex and slow to heal VLU are described.
BACKGROUND

This case study describes a clinical case monitored by a WCN between 14 April and 20 June 2011, after the approval of the Research Ethics Board (Authorisation No. 2011/139). The patient signed a consent form, authorising the release of medical information and clinical photos in accordance with the Research Ethics Board protocols. This patient was admitted to the Dermatology Outpatient Clinic, which is a publicly funded wound care service and refereed center for medium- and high-complexity patients from the State Department of Health, Mato Grosso, Cuiabá, Brazil.

It is important to note that although the dermatology clinic was opened in 2004, the WCMG that includes: 1) wound documentation records (Appendix A) and 2) treatment regimen (Appendix B) was only implemented in March 2011 after a WCN joined the interdisciplinary team. Prior to the implementation of the WCMG, the wound records were kept in the form of brief notes by the general nursing staff and lacked salient information such as wound measurement, descriptions of tissue types within and around wounds, and exudate characteristics, making it difficult to monitor wound improvements and determine suitable management strategies.

Clinical case: patient overview and presenting complaint

The patient, AFS, is a 61-year-old ethnic, married, Catholic female, mother of six children, and an active housekeeper who was admitted to the Dermatology Outpatient Clinic on 22 March 2010, due to a VLU on the medial malleolus of the right leg. She reported that the VLU had been present for a period of six years (since 2004) and that she had been treating it herself with ointments and herbs as well as neomycin and collagenase. While this patient did not have hypertension, diabetes or neoplasms, she presented with varicose veins and a familial history of DVT. She denied smoking cigarettes and drinking alcohol.

Wound characteristics according to medical records

The VLU on the right medial malleolus measured approximately 12 cm x 8 cm (length x width), was covered to a large extent with sloughy tissue and was exuding a large quantity of exudate. There was little granulation tissue present (Figure 1). The patient complained of burning pain at the edges of the ulcer. On assessment, the physician described hyperaemia, oedema in the right lower limb (RLL), surface varicose veins, and a normal foot. The patient had palpable dorsalis pedis and posterior tibial pulses within the foot with an Ankle Brachial Pressure Index (ABPI) reading of 0.9 mmHg.

The CEAP classification (clinical signs, aetiology, anatomic distribution; pathophysiology) was C6 (indicating presence of ulcer).

An initial nutritional assessment and subsequent follow-up assessments were undertaken by a registered dietitian that considered the patient’s preference and financial situation. The patient’s body mass index (BMI) was 22 (considered normal). The main dietary recommendation was to increase the consumption of protein (for example, meat, beans et cetera), vitamin C (that is, citrus fruits and juices) and A (for example, dark green, leafy vegetables, fortified cereals), and zinc (for example, fortified cereal, red meats, and seafood), which play an essential role in collagen synthesis, tissue growth, and healing.

The initial treatment prescribed by the vascular physician was the application of an inelastic compression therapy-type Unna boot to be changed by the WCN every five days after wound bed preparation with papain-paste-based (ointment) according to the WCMG.

The role of the wound care nurse and patient

Prior to initiating the treatment regimen according to the WCMG, the WCN spoke with the patient to engage her in daily self-care management (SCM).

Wound care nurse’s role

The WCN played the following roles: 1) communicator: discussed with the patient the treatment options and treatments available with government funding at the wound care clinic; 2) empathetic listener: provided an opportunity to listen to the patient’s story, ask questions and express concerns; 3) leadership and empowerment: explained the importance of patient engagement in daily SCM practices (for example, changing dressing, elevating legs, communicating early signs and symptoms of infection); and 4) educator: educated the patient regarding signs and symptoms of infection and about when, why, and how to change the primary (for example, if papain was being used) and/or secondary dressings (for example, the bandages covering compression therapy).

Patient’s role

The main roles of the patient included: 1) attending weekly or biweekly wound care sessions at the outpatient centre; 2) asking questions, expressing needs, preferences, and concerns; 3) following instructions about dressing changes; 4) knowing and identifying early signs or symptoms of infection (for example, increasing pain, discharge, et cetera); and 5) taking action by contacting the wound care clinic for an appointment or going to emergency room after wound care clinic hours.

Interventions and wound management plan

On 28 March 2011, a year after the date of this patient’s admission and the date of the first photograph taken by the nursing staff on 22 March 2010 (Figure 1), the WCMG was initiated. According to medical records, in the first year after admission and without WCMG being introduced the wound size had decreased slowly from 12x8 cm to 8x5 cm. In addition, the wound bed presented a substantial quantity of...
non-viable tissue (= 60%), moderate to high exudation, and non-advancement in healing for more than six months.

**First week of WCMG’s implementation:**
A papain-paste-based ointment of 8% concentration was used as an enzymatic debridement agent. Before initiating the papain therapy, the patient was assessed about any potential or actual allergy to latex, which would contraindicate the use of the papain therapy. This treatment option was discussed with the vascular surgeon, who agreed to suspend the compression therapy until the wound bed was better prepared. The patient received one-on-one training about implementation of SCM at home that included changing the dressing daily or whenever it was saturated by exudate. The papain was well tolerated by the patient during a whole week.

After seven days of using papain therapy (3 April 2011), there was a marked improvement in the appearance of the wound bed, which was covered with 70% granulation tissue and 30% of suspected superficial fibrin. Although there was little progress in the healing process overall (6 cm x 4.5 cm), a decrease in the sloughy tissue and the amount of exudate was noted.

**Second and third week of intervention**
On 14 April 2011 (Figure 2), once the sloughy tissue had decreased further, a low percentage (6%) of papain-paste was required. The wound size had decreased considerably to 4.2 cm x 1.5 cm. The wound bed was comprised of 80% granulation tissue and 20% of sloughy tissue. Papain was applied to a portion of alginate necessary to cover the wound size, to continue targeting wound bed preparation and debridement, and to absorb the exudate. This dressing was required to be changed every three days.

**Fourth week of intervention**
Compression therapy (CT) was prescribed and used in association with the previous combinations of dressings (papain 6% and alginate). The patient was educated to change the gauze and bandages covering the CT every time they were wet by exudate, as well as to wear a plastic bag to protect the leg before having a shower.

On 14 April 2011 (Figures 2a and 2b), the wound measured 3.7 cm x 2 cm. There was 100% coverage of the wound bed with viable granulation tissue, a significant decrease in exudate, and no pain at the site; however, pruritus in the edges of the wound was reported with observed mild hyperaemia.

The wound management regimen consisted of the application of a thin hydrocolloid as the primary dressing and CT as the secondary dressing. On 16 May 2011 (Figure 3) the wound measured 3.5 cm x 1 cm, with 100% granulation tissue retained, little exudate, and a total absence of odour and pain. The previous dressing procedure was maintained due to the notable success in the treatment.
At 15 weeks on 20 June 2011 (Figure 4) the primary goal of care was achieved, as there was complete healing of the wound. The patient was discharged with a care plan from both the WCN and the vascular physician to prevent recurrent ulceration. The care plan included dorsiflexion exercises of the ankle to activate the circulation, to rest with both her lower limbs elevated, whenever possible, to promote venous return, and to use compression stockings to improve lower leg calf muscle pump action and circulation.

**DISCUSSION**

In this case study the high amount of exudate led to the need to change the secondary dressing approximately two to three times a day, justifying the use of an alginate as the primary dressing. The existence of sloughy tissue within the wound bed led to the use of papain at 8% and then 6% until the wound bed was healthy and free of sloughy tissue, which also assisted with reducing the bacterial load and associated odour. Papain is widely used as an enzymatic debridement option across Brazil and is authorised by the Agencia Nacional de Vigilancia Sanitaria (ANVISA), which is the department responsible for supervising and authorising drugs and foods in Brazil. In addition, the common type of papain used in Brazil does not contain urea, which is considered safer and natural. This form of papain ointment is also supported by the two main professional associations in wound care in Brazil (Brazilian Society of Dermatology Nursing and Brazilian Society of Enterostomal Therapy). These associations support its use due to limited evidence suggesting that papain paste-based ointment is harmful to patients and that it is not effective in removing necrotic tissue. Furthermore, these associations recommend that health professionals should ask patients about their pain, allergies, and sensitivity to the product before making the decision to include it in the wound care management regimen.

The interventions used in this case study were essential for wound bed preparation, which it is proposed promoted reactivation of micro-circulation and angiogenesis that led to an improvement in oxygenation, transportation of nutrients, and the deposition of granulation tissue followed by movement of epithelial cells into the wound bed. The inelastic CT helped reduce the oedema caused by venous stasis and consequently improved venous return, thereby increasing oxygenation overall within the limb as well as supporting calf muscle pump action. International guidelines support the need for optimising local wound healing through the control of exudate, reduced microbial load, and debridement of devitalised tissue (for example, sloughy, necrotic). According to best practice guidelines for the prevention and treatment of venous ulcers published by the Registered Nurses’ Association of Ontario (RNAO), cleaning and debriding devitalised tissue are important in reducing the risk of infection, preparing the wound bed, and promoting healing. Although autolytic debridement is described as the most common type of debridement for patients with VLU, this clinical case the choice for using enzymatic debridement took into consideration the patient declining application of autolytic debridement methods, stating these methods had not improved her ulcer previously. Therefore, when selecting the dressings and/or related products, wound care professionals should take into consideration patients’ preference (for example, comfortable dressings) and concerns (for example, pain, allergy, quality of life, etc.) of the objective (healing or maintenance), the amount of exudate, the wound bed and the availability of the dressing and/or related products.

There is insufficient evidence that specifically supports the use of one dressing product over another to facilitate wound healing. Important factors to consider when selecting a dressing and/or related product are whether the dressing is appropriate for the clinical case, its availability, characteristics of the wound, risk factors, action of the product, and comfort. The general consensus is that dressing products that promote moist wound healing (for example, calcium alginates), should not be used unless there is an adequate blood supply to heal the wound. Therefore, this premise supports and justifies the combination of alginate and papain to promote moisture balance, haemostasis, and infection control. The hydrocolloid was used to promote the development of granulation of tissue, whereas the inelastic CT (that is, Unna boot) was essential to improve vascular flow.

Currently, there are many types of therapies available for VLU. Yet, the most basic and the most successful therapies continue to be raising the legs above the level of the heart when sitting and walking to activate calf muscle pump as well as application of compression therapy in the form of bandages (elastic or inelastic) in order to promote comfort, vascular flow, and accelerate healing. Compression therapy is still considered the “gold standard” in the treatment of VLUs without arterial impairment. In Brazil, Unna boot as a type of compression therapy is widely used (probably due to its low cost). It exerts high pressure during muscular contraction (for example, during walking) and low pressure at rest. For this reason, the patient in this case study was advised to continue with regular daily activities such as taking short walks and working at her regular job as a housekeeper when using the Unna boot, which optimised the action of this inelastic CT. In summary, the Unna boot acts on the gait with more efficacy on the calf muscle pump function during daily activities which contributes to decreased venous stasis (fluid accumulation/retention) in the lower limb.

There is strong evidence that treatment of CVI requires the lifelong use of compression therapy. This means that even after a VLU has healed, the person should aim to prevent VLU recurrence through adherence to routine use of compression stockings prescribed by a medical specialist.
Nutritional deficits can significantly impair wound healing. Therefore, when there is strong suspicion of protein and vitamin deficiency in the diet of the patient, the management of this deficiency should be overseen by a specialist (for example, nutritionist). According Kunimoto et al. nutritional deficiency may be what differentiates a wound that heals from one that does not heal, even after the implementation of best clinical practices.

CONCLUSION

This case study showed that a WCN played a key role in the management of a chronic wound, a VLU, where there was limited access to medical and wound management resources. The VLU completely healed in approximately three months after the implementation of a WCMG and periodic evaluation by the WCN. The decision by the WCN in consultation with the medical staff to use locally available resources led to considerable reduction in the size of the VLU that had previously shown only minor improvements for over six years. The management of any kind of chronic wound, including VLU, should take into account the availability of resources (for example, materials and equipment availability), wound and peri-wound skin appearance, and patient-centred care (for example, needs, preferences). All these factors must be taken into consideration so that health professionals can assess, implement, and evaluate wound management strategies and wound healing progress to achieve best possible outcomes.

In addition, the use of periodic clinical photography is a useful adjunct to capture and register improvements in healing, guide wound management, and improve the wound care record. This case study has demonstrated that the interventions of a WCN in conjunction with implementation of a WCMG that reflects the reality of a developing country and availability of wound care supplies is essential to promoting evidence-based wound care and improving patient and health service outcomes.

Current evidence indicates the need for involvement of an interdisciplinary team in the prevention and management of VLU. Unfortunately, that is not always possible for a WCN working in the constraints of a developing country with limited access to services and resources. Therefore, nurses in general should improve their knowledge to advance wound care practice and outcomes for individuals with complex wounds. This would facilitate greater continuity of care for minority populations living and struggling with chronic wounds. Nurses with expertise in wound care play an essential role in wound management. They are often responsible for the implementation of the clinical guidelines, treatment regimens, and long-term follow-up of patients to improve care and achieve positive outcomes.

CONFLICTS OF INTEREST

The author declares no conflicts of interest.

REFERENCES


Appendix A: Wound’s documentation records

<table>
<thead>
<tr>
<th>Patient’s first and last name:</th>
<th>Wound aetiology:</th>
<th>Comorbidities:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of birth.: <strong><strong><strong>/</strong></strong><em>/</em></strong>____</td>
<td>Patient record N.:</td>
<td>Wound Location:</td>
</tr>
<tr>
<td>DATA</td>
<td>Vital signs/Glycaemia</td>
<td>Measurement</td>
</tr>
<tr>
<td>BP</td>
<td>HR</td>
<td>P</td>
</tr>
</tbody>
</table>

*Wound bed (type + %): Sloughy: S (%); Necrosis: N (%); Granulation: G (%); Epithelization: E (%)

** Exudate (type): Serous: S; Sanguineous: SG; Serosanguineous: SS; Purulent: P; Exudate (amount): Small: S; Moderate: M; Heavy: H

*** Peri-wound skin: Maceration: M; Edema: E; Dry skin: D; Induration I; Erytema: ET; Rash: R; Excoriation: EC; Hyperkeratosis: H; Callus: C

**** Treatment regimen (if combining include both): Papain: P (%); Alginate: A; Hydrogels: H; Hydrocolloids: HC; Essential Fatty Acid: EFA; Unna Boot: UB
Appendix B: Visual representation of treatment regimen for patients with VLU including goal, clinical action/decision, product availability and patients’ needs and concerns.

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Josephine Gachango – Kenya
WCET® 2017 Membership Survey: Results and implications for action

ABSTRACT

This manuscript reports the findings of the 2017 WCET® Membership Survey. Implications for WCET® Executive Board consideration and action from these data will be discussed.

Keywords: WCET® membership, membership survey results.

INTRODUCTION

In keeping with its strategic plan, the WCET® greatly values and asks for feedback from its members. As in the past, the voices of our members do matter! One of the ways that this is accomplished is through its biennial membership survey. In recent years, this survey has been available for members to complete by accessing it electronically. The membership survey has traditionally been one of the functions of the Vice-President (VP). Since WCET® believes in a team effort, once again the 2016–2018 VP partnered with the WCET® Central Office Director of Operations to accomplish this task.

Membership survey purpose/process

You might ask, why is it important to do a biennial membership survey and what is done with the information obtained from the survey? One reason is to obtain opinions on a variety of topics of interest to our association members. The data is obtained from structured questions as well as write-in questions to which members can respond. Over the years, most questions have remained the same (for example, where do you work, do you work in ostomy, wound or continence care, what is the greatest strength of the WCET®?). Other questions have been added (for example, do you receive any information about the WCET® from your country’s International Delegate (ID) and, if so, how often? Is the new website easier to navigate?). WCET® also obtains member suggestions about things that they want added to improve the membership survey in a variety of ways. One method is from comments that participants wrote in the previous 2015 membership survey. Before the 2017 membership survey was finalised, members were invited to provide any other suggestions that they might have for survey. Based on member feedback, the wording of some questions for the 2017 survey was clarified and more selection options were added. Members of the Executive Board (EB) again reviewed the proposed 2017 survey and then approved the revised final version of the 2017 survey. The 2017 survey has 41 questions, compared to 34 questions in the 2015 membership survey. It is divided into 7 sections, as follows: section 1 about the participants; section 2 about the
WCET®, section 3 about the WCET® Congress; section 4 about the WCET® Journal; Section 5 about the NNG Foundation®; section 6 about the website; section 7 about the future. Questions about the WCET® Central Office, International Delegates, twinning projects, the WCET® Education Committee, and WCET® Publications and Communications Committee are included in the questions in section 2. A copy of the 2015 and 2017 survey questionnaires are available on the WCET® website under the members-only library section.

WCET® continues to be a multicultural organisation that strives to have its communication in multiple languages. For 2017, the survey was translated into yet another language, this time Portuguese, bringing the total number of languages in which the survey is now available to six, five of which are languages other than English. Once again, WCET® members graciously volunteered to translate the survey into the following languages: Bahasa Indonesia (Arum Pratiwi), Chinese (Michelle Lee), French (Laurent Chabal), Portuguese (Vera Santos) and Spanish (Lupita Lobo and Heidi Campos). Jen Wood continues to be instrumental in formatting and uploading the revised 2017 membership survey onto SurveyMonkey and providing the WCET® survey team with a summary of participants’ responses to all questions. Both the WCET® VP and Director of Operations sent regular email reminders to members inviting them to participate in the 2017 survey. These email reminders were written in several languages. An Invitations to participate in the survey were also included in the WCET® Journal and Bullettin. The survey opened in May 2017 and closed on 15 October 2017, giving members ample time to participate.

2017 WCET® Membership Survey results

All data is reviewed by the WCET® VP, with the assistance of Jen Wood, Director of Operations, who provided the 2016–2018 WCET® VP with summary tables and graphs of the data from the quantitative questions. Narrative responses to questions written in languages other than English were sent to volunteers for translation into English. The 2016–2018 WCET® VP then reviewed the 15 pages of written narrative comments and organised them into themes. At the pre-Congress EB meeting in Kuala Lumpur, Malaysia, results from the 2017 survey were presented as a discussion item. The EB then discussed the data, expressed ideas, implications and proposed action items for 2018–2020. A short summary of the survey results was also presented at the Industry Meeting and the General Membership Meeting at the WCET® Congress in Kuala Lumpur, Malaysia, in April 2018. The remainder of this manuscript will report some of the major findings.

2017 survey participants

Thank you very much to all who completed the 2017 membership survey, which resulted in the highest number of participants ever. As seen in Table 1, 606 members completed the 2017 survey, which is more than the 545 people for 2015, 338 members in 2013 and 344 members in 2011 survey. With 61 more people completing the survey in 2017 compared to 2015, the trend of increased survey participation continues.

The 2017 survey saw a decrease in the number of persons who completed the survey in languages other than English (LOTE): 190 compared to the 273 people in 2015. The reason for this is not clear. It could be that the lower number of participants who completed the survey in Chinese (91 in 2017 compared to 194 in 2015) accounts for this finding, even though there were, for the first time, 41 persons who responded in Portuguese. However, the majority of respondents in the LOTE group for the last four surveys have been in Chinese.

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Table 1: Survey participants by year 2011–2017
PROFILE OF 2017 SURVEY PARTICIPANTS

Scope of practice

As with past survey results, most 2017 respondents are ostomy, wound and continence nurses (39%) (Figure 1).

The 2017 survey showed an increase in respondents who indicated that they are specialised in all three areas of stoma, wound and continence: 39% compared to 27% in 2015. For 2017, there were slightly fewer respondents who identified ostomy and wound (22%), compared to 25% in the previous 2015 survey. The number of nurses who are specialised in wound and ostomy is 22% in 2017, compared to a higher percentage of 25% in 2015 and a lower percentage of 20% in 2013. The number of respondents who only provide ostomy care has changed over the years. The highest number was 23% in 2013, followed by 11% in 2015, with slightly more 2017 respondents at 12%. The number of nurses who are specialised only in wound care remains about the same at 5%. As with previous surveys, the majority of respondents work in hospitals (67% in 2017; 69% in 2015). The number of respondents who work full time increased to 78% in 2017 compared to 63% in 2015.

Education

The majority of 2017 respondents had received specific ostomy, wound and/or continence care training, with 69% indicating they were trained at a WCET® recognised institute. Lack of opportunity to acquire education coupled with lack of time to attend a program ranked highest as barriers to getting specialized education. Among those who lacked any training, in 2017, 33% indicated that education was not being offered in their country compared to 56% in 2015. Other reasons for not attending a program included lack of funding to pay for training or that there was no requirement to have special training to practice ostomy, wound or continence care for their employment. WCET® provides scholarship funds through the Norma N. Gill Foundation (NNGF) for nurses to attend ETN training so that money is not a barrier to knowledge and training.

Figure 1: Scope of practice

Figure 2: Education
Enterostomal Therapy Nursing Education Program (ETNEP) and 7% at a WCET® Recognised Education Program (REP).

Barriers to obtaining formal education can be seen in Figure 2. Lack of opportunity to acquire education, coupled with lack of time to attend a program ranked highest as barriers to getting specialised education. Among those who lacked any training, in 2017, 33% indicated that education was not being offered in their country, compared to 56% in 2015. Other reasons for not attending a program included lack of funding to pay for training or that there was no requirement to have special training to practise ostomy, wound or continence care for their employment. WCET® provides scholarship funds through the Norma N. Gill Foundation (NNGF) for nurses to attend ETN training so that money is not a barrier to knowledge and training.

Reasons for joining the WCET®

As shown in Figure 3, the top two reasons why respondents to the 2017 survey join the WCET® are wanting to be part of a worldwide organisation (76.8%) and to keep up to date with the latest care developments worldwide (76.2%). This is followed by the opportunity to network with other specialist nurses (56.8%), to gain knowledge of other countries via the Journal (55%), to acquire ongoing education via the Journal and Congresses (52.4%) and to further their professional development/career (51.8%). This is consistent with results of previous surveys1-3.

As with previous surveys, most respondents continue to hear about the WCET® when completing their training 31.6% (2017); 36% (2015). Thus, the role of ENTEPs in providing students information about the WCET® is the most important way that nurses learn about the WCET®. ENTEP directors can contact the WCET® central office for a PDF of the WCET® membership brochure. A PowerPoint slide deck that provides information about the WCET® is available for ETNEP use. It can be downloaded for free from the WCET® website (www.wcetn.org). Other ways that nurses learn about the WCET® include from nursing or other professional associations/Congresses (21.3% 2017; 26% 2015) or from a colleague (24% 2017; 22% 2015). It was especially helpful to the WCET® EB that several respondents wrote in the names of the professional conferences where WCET® had informational booths/stands, as well as the names of individuals who told them about the WCET®. This information validated the EB strategic plan to allocate sending representatives to attend conferences to represent the WCET®. Many members of the EB attend a wide variety of conferences that are funded by other sources than the WCET®. This enables them to promote the WCET® without spending WCET® funds.

What WCET® members value

As with previous surveys1-3, the WCET® Journal continues to be the highest ranking response as to what is most important to members (Figure 4).
As with previous survey results\textsuperscript{1-3}, the WCET\textsuperscript{®} Congress remains another of the top components that respondents value about WCET\textsuperscript{®}. The BullETin, website and NNGF\textsuperscript{®} scholarships are some of the other top responses that were noted as very important. Respondents highly value that WCET\textsuperscript{®} reviews and recognises educational programs. This is one of the important functions of the WCET\textsuperscript{®} Education Committee. Respondents (13\%) indicated that the WCET\textsuperscript{®} Twinning Program could be improved. Twinning is facilitated by collaboration between the NNGF\textsuperscript{®} and Education Committees, so please consider joining these committees and strengthening our twinning programs.

There were some written comments that other members (non-EB) need to be included in the workings of the WCET\textsuperscript{®}. Yet only 18\% of respondents said that they were now or were previously committee members. Volunteers are needed and welcomed on WCET\textsuperscript{®} committees. We hope many of our members (53\% said yes to being interested) will consider helping to increase member participation on committees. As seen below in figure 5, most were interested in joining the Education Committee. We are sure Denise Hibbert (education@wcetn.org) would be glad to hear from you, as well as the Chairpersons of the other committees Arum Pratiwi (nngf@wcetn.org) and Karen Bruton (publications@wcetn.org).

**JOURNAL**

As with past surveys\textsuperscript{1-3}, survey respondents highly value the WCET\textsuperscript{®} Journal. Rather than repeat information that Jenny Prentice, Journal Editor reported in her April/June 2018 editorial\textsuperscript{4}, we will only report additional data. Most respondents (56\% 2017; 55\% 2015; 74\% 2013) continue to prefer to receive the WCET\textsuperscript{®} Journal as a printed copy by post. However, the number of those who want the Journal online rose to 35\% for both the 2017 and 2015 survey, compared to 19\% for the 2013 survey. This is one of the reasons that the WCET\textsuperscript{®} continues to send each member a printed copy of the Journal as well as posting it electronically on the WCET\textsuperscript{®} website. This is a good time to remind members to double-check that they have a current and complete mailing address on their profile. The mailing labels for the Journal are generated from the information that you, our member, have entered into your individual member profile. Also, remember that back issues from 2002 onward can be found in the members-only section of the library on the WCET\textsuperscript{®} website.

Members want to see the Journal Medline indexed. The Journal is already CINHAL-indexed. The EB, in conjunction with the Journal Editor and Publisher, has approved a plan to once again apply, and hopefully achieve, Medline indexing. This will necessitate some modifications to the Journal that are required by Medline. The application process takes a few years. Look for changes in the WCET\textsuperscript{®} Journal as well as the BullETin so that this might be achieved in the coming years.

Language continues to be a concern to survey respondents. Those who speak French want more manuscripts in French, while others who speak Italian want more in Italian and those who speak Mandarin Chinese want more in their language. Therefore, the need for members to translate articles into languages other than English (LOTE) remains a priority. There were many requests to have the entire Journal in
Chinese. The EB is considering the cost and logistics of making that member request a reality.

CONGRESS

The Congress continues to be evaluated as one of the greatest strengths of the WCET®. Survey respondents valued the presentations, learning what other countries are doing, and the opportunity to visit hospitals in a different country. About half of respondents (53%) have attended a WCET® Congress, and 40% have indicated that they paid their own way to attend the congress. This may be due in part to the business ethics rules in the United States (ADVAMED) and in Europe (MedTech Europe) that severely restrict company sponsorships of individual attendees. The top two barriers that prevent respondents from attending the Congress are lack of funding to attend (80.97%) and distance (56.15%). This is one of the reasons that WCET® rotates the location of the Congress to different areas of the world, as well as offering the ability of members in good standing the opportunity to apply for a Congress Travel Scholarship. For example, in 2014 the Congress was in Europe (Gothenburg, Sweden), then moved south-east to Africa (Cape Town, South Africa) in 2016, and has continued moving further east to Kuala Lumpur, Malaysia, for 2018. In 2020, the WCET® Congress will return to Europe (Glasgow, United Kingdom). For 2022 and beyond the EB is considering areas of the world that a Congress has not be held in for a while. Once again, survey respondents overwhelming indicated that they want to see another joint Congress with another organisation. The EB has implemented that and has partnered with the Association of Stoma Care Nurses United Kingdom (ASCN UK) for the 2020 Congress in Glasgow. Respondents also want to know when WCET® will return to the USA as they enjoyed the 2010 joint Congress with the Wound Ostomy & Continence Nurses Society (WOCN) in Phoenix, Arizona.

What barriers might prevent you from attending Congress?

**Figure 6: 2017 Survey results to question "What barriers might prevent you from attending Congress?"**
Even though WCET® provides translation when 50 or more attendees pre-register for the Congress, respondents have told us that there is not enough translation and language is a barrier. Another concern is that the Congress registration fee is too expensive (see Figure 6 for more details).

Survey respondents remarked hearing presentations by ET nurses as well as other professionals learning about ET nursing in other countries, networking, and seeing exhibitions were all valuable parts of attending the Congress. Other written comments include how much Congress attendees like and want more hands-on practical workshops. Be assured that Dee Waugh is busy working with Jen Wood and our colleagues from ASCN UK in planning the next Congress in Glasgow.

WEBSITE
We are in the internet era and 37.56% of respondents consult the WCET® website more than once a month with another 21.14% between one and three months, compared to 44% of respondents who consult the WCET® website every three months or more frequently. A little over half (56.44% in 2017 compared to 80% in 2015) felt that the new website was easier to navigate. Interest in participating in an online ‘chat room’ has varied, with 39% in 2017 saying yes, compared to 48% in 2015 and 38% in 2013.

COMMUNICATION

WCET® International Delegates (IDs)
The role of the International Delegate (ID) is important as the ID serves as a link between the members and the EB. Each country elects a WCET® member to represent their country. The ID votes on behalf of its country members at the General Membership Meeting at the Congress. Furthermore, based on the majority votes from their country members, the ID casts their country vote for any electronic voting done online, for example the biennial election of EB members. Therefore, communication is a key part of the ID role.

The good news is that for 2017 more respondents (12%) are receiving information from their country ID more than once a month, compared to 11% in 2015 and 5% for the 2013 survey. A huge thank you to all the IDs who have increased their communication with their country members and to the 25 IDs who have included a country-specific welcome message greeting on the WCET® web page. Fortunately, Table 2 also reveals that a little more than one-quarter of survey respondents receive information from their ID between one and three months. The opportunity for improvement exists, as unfortunately, around one quarter of survey respondents never receive information from their ID.

This data has been shared with the IDs at both the 2016 and 2018 Congresses. Over the years, an ID Handbook (available at www.wcetn.org) was written and periodically revised to better help IDs understand and implement their role. Also, in Kuala Lumpur, a communication form to let the EB know the results of ID election was premiered and discussed.

Some respondents wrote that they would like to have more information about ET nursing activities in emerging countries as well as more translation of information on the website. WCET® would be happy to include this information in the BulletIn, so please members and IDs, send your updates about what is happening in your country to the BulletIn Editor, Karen Bruton, at publications@wcetn.org.

Please do remember that the ID term is for two years and can be renewed once. This term length is defined to give every country member the opportunity to become the ID for her/his country. As we introduced during our last Congress, a new notification form should be used when an ID is elected within your country and to inform the WCET® VP as WCET® Publications & Communications Chairperson about the election results. This form is available on the WCET website and we hope it will be useful.

EB and other WCET® communication
There were many compliments about the increase in emails and information from the EB and you want that continued. You want to hear from WCET® and respondents were specific as to how they wished to receive this information. As can be seen in Figure 7, almost all (94%) want to be informed about major changes or decisions.

Furthermore, the majority of respondents (60.75%) wanted that information by a personal email with the press release attached (Figure 8).

NORMA N. GILL SCHOLARSHIPS
Most 2015 respondents (77% 2017; 75% 2015) are aware that NNGF® scholarships are available. As in the 2015 survey, 2017
respondents wrote that they would like NNGF® scholarship recipients to submit a manuscript about what they were able to accomplish in their practice as a result of receiving the scholarship, to either the BullETin or the WCET® Journal. More respondents are interested in NNGF® twinning projects. Compared to one-third in 2015, for 2017 two-thirds were interested in participating in an NNGF® twinning project as either an emerging or developed country. Respondents suggested that small research grants be available to members from NNGF®. Some wrote in comments about funding a visiting ET nurse scholar.

EDUCATIONAL PROGRAMS AND MATERIALS

Respondents want more information about educational programs in emerging countries and want to see more support for education in emerging countries. Specific areas of the world want WCET® to continue to support programs in their region (for example Asia, Africa) while others feel that the WCET® needs to support other regions such as in Latin America. We want to remind you that the WCET® provides NNGF® scholarships for those wishing to start a WCET®-approved program. Educational resources from WCET® are valued, but respondents would like them to also be in LOTE.

The WCET® Education Committee has put a lot of effort into providing online webinars based on our tri-specialty scope of practice. Some of the webinars are also in LOTE. More will come, so stay tuned.

WCET® EB AND LEADERSHIP

There were several positive comments about the EB as well as suggestions for the EB to consider. For example, survey respondents want the EB to have fewer members. Their belief is that a smaller board could make decision-making processes faster and save revenue. Over the years, the EB has decreased the number of EB members to seven, its lowest number in years. Some commended the EB on the increased communication and the work that has been done, while others believe that the EB needs to do even more communication with its members. Still others believe that the EB needs to be more dynamic, have global representation.
and needs to reconsider where money is being spent, and revisit succession planning. The EB does present a proposed budget at the general meeting that is voted on by the IDs, so members do have input into how the money is spent. In regard to succession planning, members who meet the eligibility criteria can run for the following three positions: President, Vice-President, and Treasurer. Committee Chairpersons are nominated from each committee, so if you are interested, please join a committee. Respondents also want WCET® to have training in leadership skills to help develop the next generation of leaders. The EB is considering the logistics and cost to do this.

At the general business meeting, a recommendation from a member was brought forward and voted on by the IDs to have the Constitution Advisory Panel explore the role of the VP and consider changing it to a President Elect. Also, the length of terms of office were discussed and this was also sent to the Constitution Advisory Panel for further discussion and to provide the membership with a proposal. The Constitution Advisory Panel is working on this, so look for emails from them on this topic.

**WCET® association**

Only 3% said “no” to the question “Does the WCET® meet your needs and expectations?”. The many compliments that respondents wrote in about the good job that the WCET® has been doing and that WCET® does a lot for its members are appreciated, as well as the constructive comments and ideas as to how to make the organisation better. Some respondents wrote that they would like more on incontinence, others on wound care and still others on ostomy care. Balancing the needs of our members in a tri-specialty is a challenge, but again the written comments support that WCET® is doing a good job.

Respondents want free or a reduced cost for WCET® membership dues. As a reminder, there are NNGF® membership scholarships available for those who cannot afford the membership fee. The EB has already implemented a reduced membership cost fee for anyone who joins for multiple years as well as a prorated fee for new members who join at various times during the year. Please go to the website (www.wcetn.org) for details about the membership fee amounts.

**SUMMARY**

As has been the tradition, every two years, WCET® members have the opportunity to participate in a membership survey. Data from 2017 respondents have been analysed and compared for trends when available from previous surveys in 2015, 2013 and 2011. Be assured that the EB has heard you and is grateful for your honest and thoughtful feedback. These data have been reviewed and discussed with the EB. The strategic plan is being revisited and action items are being planned for the next two years. We are grateful to all who participated in the 2017 survey and hope that even more members will participate in the 2019 survey. Please look for emails inviting your feedback about any revisions to the membership survey questions and as to how and when the 2019 membership survey will be available. We hope you find this interesting reading and will again participate in the next membership survey scheduled for 2019.

**DISCLOSURES**

No conflicts of interest. Conducting and analysing survey results were part of the role functions for Dr Ayello as the 2016–2018 WCET® Vice-President, Mr Chabal as 2018–2020 WCET® Vice-President, Mrs Stelton as 2016–2018 WCET® President and Mrs Wood as Director of Operations at the WCET® Central Office.

**REFERENCES**

WEAVING CULTURE & EXPERTISE TO OFFER THE BEST PATIENT CARE

Venue:
Scottish Event Campus

Congress Organizing Committee Members:

**WCET®**
Dee Waugh, Congress & Meetings Coordinator
Jen Wood, Hauck & Associates Inc.
Alison Crawshaw, Treasurer

**ASCN UK**
Maddie White, Chairperson
Angie Perrin, Vice Chairperson
Claire Simpson, InConference, Ltd.

www.wcet-ascnuk2020.com
Index of articles in the WCET® Journal 2018; 38(1-4)

Abstracts

World Council of Enterostomal Therapists. Selected abstracts from the 22nd Biennial WCET® Congress in Kuala Lumpur. WCET® 2018; 38(3):36-42.


Book review

Editorials


Foreword

Guest editorial

Letter to the editor
Zhang S. The first time I took part in the WCET® Congress. WCET® Journal 2018; 38(2):9.

Ostomy/Stoma


Rae W and Pridham S. Peristomal moisture-associated skin damage and the significant role of pH. WCET® Journal 2018; 38(1S):S4-S7.


President’s messages
Ayello E. Happy 40th anniversary WCET® - How ONE person can make a difference. WCET® Journal 2018; 38(2):4-6 (in English and French).

Ayello E. Time to remember - the past for the future. WCET® Journal 2018; 38(3):4-6 (in English, French and Chinese).


Stelton S. Time to say goodbye. WCET® Journal 2018; 38(1):4-6 (in English and Chinese).

Professional business

World Council of Enterostomal Therapists. WCET® leadership through the years: History of the WCET Executive Board. WCET® 2018; 38(1):9-11.

Professional role

Research

Wound


Continues page 46
Significantly higher number of participants had To describe post-prostatectomy incontinence after The detection rate of UI was 82.6%. In 115 A convenience sample of 115 prostate cancer With its high incidence and prevalence rates, manifestations, among acutely-ill geriatric patients. the incidence and alleviate the development of IAD and its as intervention in this study was found to effectively decrease p=0.000), lower incidence of IAD (χ²=22.160, p=0.000), & higher patient satisfaction (t=−3.766, p=0.000) in the treatment group. There was no significant difference on the incidence of decubitus ulcer (χ²=5.636, p=0.121) between the two groups. Conclusion: The structured IAD Prevention Protocol utilised as intervention in this study was found to effectively decrease the incidence and alleviate the development of IAD and its manifestations, among acutely-ill geriatric patients.


Two abstracts from WCET® Congress in Kuala Lumpur

EVALUATION OF THE EFFECTIVENESS OF AN IAD PREVENTION PROTOCOL ON THE INCIDENCE OF IAD AMONG ACUTELY-ILL GERIATRIC PATIENTS IN A TERTIARY HOSPITAL IN SPAIN

Aldin D Gaspar
University of the Philippines, College of Nursing, Philippines

Aims: With its high incidence and prevalence rates, incontinence-associated dermatitis (IAD) has debilitating effects, not only on the physiologic, but also on the psychological and socio-economic aspects of care of acutely ill elderly patients. For prevention and management of IAD, a structured skin care regimen that includes gentle cleansing, moisturisation, and application of a skin protectant is recommended. This study aimed to evaluate the effects of a structured IAD Prevention Protocol on the incidence of IAD among acutely-ill geriatric patients in a tertiary hospital in Spain.

Methods: A single-center, prospective, randomised-controlled trial was conducted in Hospital Monte Naranco, Oviedo, Spain. Population included acutely-ill geriatric patients (≥70 years old), who were incontinent with urine, feces, or both. After signing an informed consent, 180 patients were randomised to receive care utilising the conventional skin care regimen, or a structured IAD Prevention Protocol for three consecutive days. Primary outcome involved the presence of IAD; while pain level, itch level, presence of decubitus ulcer, and patient satisfaction were the secondary outcomes.

Results: Significantly higher number of participants had lower pain levels (t=2.200, p=0.030), lower itch levels (t=4.928, p=0.000), lower incidence of IAD (χ²=22.160, p=0.000), & higher patient satisfaction (t=−3.766, p=0.000) in the treatment group. There was no significant difference on the incidence of decubitus ulcer (χ²=5.636, p=0.121) between the two groups.

Conclusion: The structured IAD Prevention Protocol utilised as intervention in this study was found to effectively decrease the incidence and alleviate the development of IAD and its manifestations, among acutely-ill geriatric patients.

POST-PROSTATECTOMY INCONTINENCE AND SELF-MANAGEMENT FOR URINARY INCONTINENCE AFTER LAPAROSCOPIC RADICAL PROSTATECTOMY AMONG PROSTATE CANCER PATIENTS

Longmei Si & Yanning Ding
Peking University First Hospital, China

Aims: To describe post-prostatectomy incontinence after laparoscopic radical prostatectomy (LRP) in Chinese prostate cancer patients, the self-management strategies used, and the relationship between symptom and strategies.

Methods: A convenience sample of 115 prostate cancer patients after LRP from an upper first-class hospital in Beijing, China, between September 2015 and October 2016. A general information questionnaire was used to collect patients’ demographic data, the International Consultation on Incontinence Questionnaire-Urinary Incontinence Short Form was used to assess urinary incontinence among patients post-operatively, and the Strategy and Effectiveness of Symptom Self-Management questionnaires of Urinary Incontinence to assess the self-management of urinary incontinence patients.

Results: The detection rate of UI was 82.6%. In 115 participants, there were 41 cases (43.2%) with mild UI, 47 cases (49.5%) with moderate UI, and 7 cases (7.4%) with severe UI. The mean score of the strategy and effectiveness of symptom self-management questionnaires of urinary incontinence was (14.0±7.92). It was significantly positively associated between the frequency of use of self-management strategies and the severity of UI.

Conclusions: UI is pervasive among prostate cancer patients who underwent LRP, mainly slight to moderate; the more severe the UI, the more strategies used. However, there is no relief the severity of UI.
Marylyn McManus Scholarship Opportunity
Norma N. Gill Foundation

In 2016, the WCET® Executive Board voted to award the **Marylyn McManus Scholarship** of up to £4000 to African nurses to enhance, support or further their development in the field of ostomy, wound and continence nursing (enterostomal therapy — ET).

The aim of this Scholarship is to honour **Marylyn McManus** as an African pioneer within the ET specialty and for her generosity as a long-standing member and supporter of the vision and mission of the WCET®.

**The requirements are:**
- African citizenship
- Registered nurse with a minimum of 2 years' postgraduate clinical experience
- Member of the WCET® at the time of application. (If not currently a member, please join before applying for this scholarship.)

Please note you may apply for:
- Educational Materials Scholarship
- General Scholarship
- Membership Scholarship
- Congress Travel Scholarship for Next WCET® Biennial Congress
- ETNEP/REP Scholarship

**ABOUT MARYLYN McMANUS**

Marylyn McManus worked in Johannesburg, South Africa, as an ET from the early 1970s until her retirement in 1996. After her retirement, Marylyn continued to assist ostomates at CANSA (Cancer Association of SA). As a WCET® pioneer, Marylyn held several Executive Board positions, including Treasurer 1980–1984 and NNGF Chairperson 1984–1990. The WCET® and the NNGF® have remained very important to Marylyn; she has been an active participant over the years and has continued to contribute financially to the NNGF.

- Marylyn has attended almost every WCET® Congress since its inception in 1978 in Milan, Italy.
- Despite never qualifying as a nurse, Marylyn was accepted as a full member of the WCET® and SASA under the “Grandfather Clause”.
- Marylyn is a Life Member of SASA and in 2000 was named as a Life Member of the WCET®.

Please help WCET® in identifying deserving candidates who will help continue Marylyn’s work in Africa!

**Process:**
Please read all relevant information that can be found at [https://wocet.memberclicks.net/nngf-scholarships](https://wocet.memberclicks.net/nngf-scholarships) under Marylyn McManus Scholarship and complete the application form.

Return the application form, along with all relevant documents listed on the website, by email to: admin@wcetn.org and nngf@wcetn.org

Or via priority or registered mail to:
WCET
c/o Jennifer Wood, WCET Director of Administration
1000 Potomac Street NW
Suite 108
Washington, DC 20007
USA

*All applications must be completed and submitted before 30 November 2019*

**Do Not Miss this Fantastic Opportunity!!!**

Please contact Arum Pratiwi, NNGF Chairperson, with any questions at nngf@wcetn.org
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