CANADIAN JOURNAL of EMERGENCY NURSING

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THE OFFICIAL JOURNAL OF THE NATIONAL EMERGENCY NURSES ASSOCIATION

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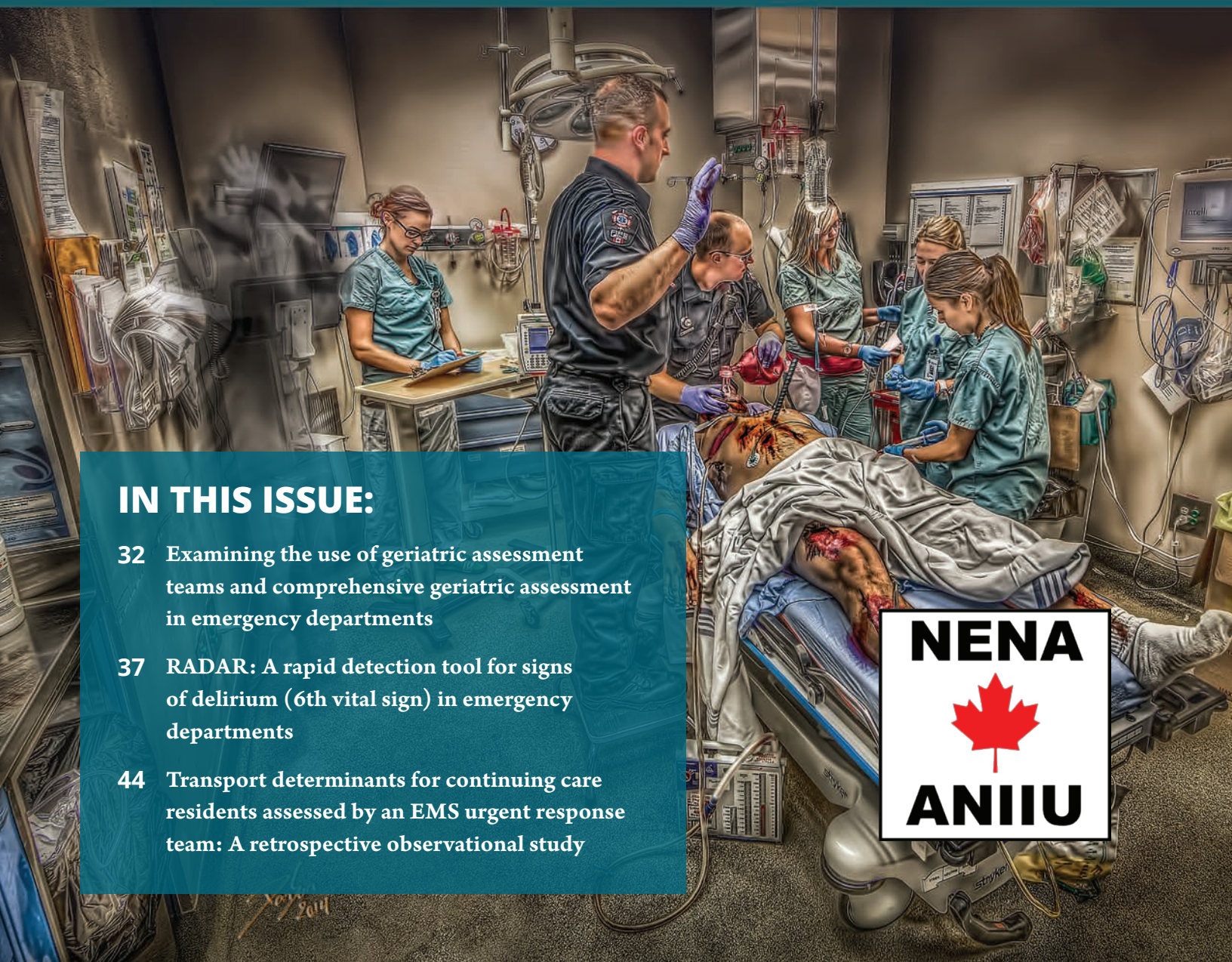

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Guidelines for submission

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1. **Canadian Journal of Emergency Nursing** welcomes the submission of clinical and research articles, case studies, and book reviews relating to the field of emergency nursing.

2. Statements or opinions expressed in the articles and communications are those of the authors and not necessarily those of the editor, publisher or NENA. The foregoing disclaim any responsibility or liability for such material and do not guarantee, warrant or endorse a product or service advertised in this publication, neither do they guarantee any claim made by the manufacturer of such product or service.

3. Authors are encouraged to have their articles read by others for style and content before submission.

Preparation of manuscripts

1. The original copy of manuscripts and supporting material should be submitted to the **Canadian Journal of Emergency Nursing** editor. The author should retain one complete copy.

2. Manuscripts must be typed, double-spaced (including references), layout on 8½″ × 11″ paper with standard margins. Manuscripts must be submitted in Word or Word Perfect and sent electronically to the communications officer at **communicationofficer@nena.ca**.

3. Author's name(s) and province of origin, a high-resolution photo and a brief biographical sketch must be included.

4. Clinical articles should be limited to six pages unless prior arrangements have been made.

5. Direct quotations, tables and illustrations that have appeared in copyrighted material must be accompanied by written permission for their use from the copyright owner, and original author and complete source information cited. Plagiarized material will be rejected without explanation.

6. Photographs of identifiable persons, whether patients or staff, must be accompanied by signed releases, such as the following: "I hereby give (author's name) authorization to use the photograph of (subject's name) in the **Canadian Journal of Emergency Nursing.**"

Please submit articles to:
communicationofficer@nena.ca

Please include a brief biography and recent photo of the author.

Deadline dates:
January 31 and September 8

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President's Report

It has been said, "plus ça change, plus c'est la même chose"—"the more it changes, the more it's the same thing", usually translated as "the more things change, the more they stay the same," (Jean-Baptiste Alphonse Karr). This is true of emergency nursing and it is true of NENA. We follow predictable cycles, but they are punctuated by the unexpected—new medications, revised procedures, staff churn, administration attitudes, and political climate.

One of NENA's most challenging changes in recent years has been the transformation of NENA from a collective of affiliated provincial emergency nursing special interest groups to an association of members who are also members of their associated provincial emergency nursing organizations. NENA's Vision, OUR STRENGTH: OUR MEMBERS; NOTRE FORCE: NOS MEMBRES, has dictated our direction, but the change has not been easy. As I write this, a committee of NENA members from across Canada is working to define *emergency nurse*. We expect that this will be the final key revision to our bylaws.

Of the things that remain the same, a number of NENA members were recognized at the NENA conference in Charlottetown in June. Cathy Sendecki and Donna Gallant were awarded Honorary Lifetime Membership Awards in recognition of their lengthy and faithful service to emergency nurses.

The following emergency nurses were awarded NENA bursaries: Christina Graham, Kyla Neary Griffiths (Margaret Smith Award); Loree Vint (Debbie Cotton Award); Monique McLaughlin; Leah Chesney; Janet Calnan; Sharron Lyons; Tanya Penney; and Christina Follador. Congratulations to each of you.

Bursaries are available to NENA members. Information about NENA Awards of Excellence and other bursaries and applications are available in the *Documents* section on the NENA website. A call for applications will be distributed to members in the new year. The annual deadline is March 15.

NENA continues to administer Trauma Nursing Core Course (TNCC) and Emergency Nursing Pediatric Course (ENPC), as well as maintaining a strong presence on the Canadian Triage and Acuity Scale (CTAS) national working group.

NENA is excited to be partnering with prnEducation in the development and delivery of EPICC (Emergency Practice, Interventions and Care – Canada) courses. Beginning with *EPICC Foundations* in 2014, the development team has added *EPICC Trauma* and is beginning work on a pediatrics course. These truly Canadian courses are offered in English and French.

NENA has been a presence on CNA's Certification Advisory Committee, supporting and encouraging certification in emergency nursing ENC(C) for our members and others. A link to its *Canadian Emergency Nursing Certification Exam Prep Course* is posted in the *Courses* section of the NENA website. We encourage all our members to seek Emergency Nursing Certification. The deadline for renewals is November 30.

NENA exists for the purpose of promoting excellence in its nurses and advancing our specialty, intrinsically joined to the provincial organizations and its members.

Respectfully submitted,
Stephanie Carlson,
President

Rapport de la présidente

Il est dit que : « Plus ça change, plus c'est la même chose » (Jean-Baptiste Alphonse Karr). Ceci est vrai pour les soins infirmiers d'urgence et pour l'ANIIU/NENA. Nous suivons des cycles prévisibles mais ponctués par des moments inattendus; nouveaux médicaments, procédures révisées, roulement du personnel, attitudes de l'administration et climat politique.

Au cours des dernières années, l'un des changements les plus difficiles pour l'ANIIU/NENA fut de passer d'un collectif de groupes d'intérêt provinciaux spéciaux et affiliés en soins infirmiers d'urgence à une association de membres étant également membres de leurs organismes provinciaux en soins infirmiers. La vision de l'ANIIU/NENA - NOTRE FORCE : NOS MEMBRES – a dicté notre direction, mais les changements n'ont pas été faciles. Au moment d'écrire ce rapport, un comité de membres de l'ANIIU/NENA, de partout du Canada, travaille pour définir les *soins infirmiers*. Nous nous attendons à ce que cela devienne la dernière révision clé de nos règlements.

Sur les choses qui ne changent pas, plusieurs membres de l'ANIIU/NENA ont été reconnus en juin lors de la conférence de l'ANIIU/NENA à Charlottetown. Cathy Sendecki et Donna Gallant ont reçu les prix Honorary Lifetime Membership en reconnaissance de leurs longs et loyaux services envers les infirmiers et infirmières d'urgence.

Les infirmières d'urgence suivantes ont été récompensées avec les bourses ANIIU/NENA : Christina Graham, Kyla Neary Griffiths (Margaret Smith Award); Loree Vint (Debbie Cotton Award); Monique McLaughlin; Leah Chesney; Janet Calnan; Sharron Lyons; Tanya Penney; et Christina Follador. Félicitations à chacune d'entre vous.

Les bourses sont disponibles aux membres de l'ANIIU/NENA. Les renseignements sur les prix d'excellence de l'ANIIU/NENA, d'autres bourses et les demandes sont disponibles dans la section *Documents* du site web de l'ANIIU/NENA. Un appel de demandes sera lancé aux membres au cours de l'année prochaine. La date d'échéance annuelle est le 15 mars.

L'ANIIU/NENA continue d'administrer le Trauma Nursing Core Course (TNCC) et le Emergency Nursing Pediatric Course (ENPC), ainsi que de maintenir une forte présence

dans le groupe de travail national de l'Échelle canadienne de triage et de gravité (ÉCTG)

L'ANNIU/NENA est fière d'être en partenariat avec prnEducation dans le développement et la livraison de cours EPICC (Emergency Practice, Interventions and Care – Canada). Depuis le *EPICC Foundations* en 2014, l'équipe de développement a ajouté *EPICC Trauma* et a commencé à travailler sur un cours pédiatrique. Ces cours canadiens sont disponibles en français et en anglais.

L'ANIIU/NENA est présente au Comité consultatif sur la certification de l'AIC, en soutenant et en encourageant la certification dans les services de soins infirmiers ENC(C) pour nos membres et autres personnes. Un lien au *Canadian Emergency Nursing Certification Exam Prep Course* est affiché dans la section *Cours* du site web de l'ANIIU/NENA.

L'ANIIU/NENA existe afin de promouvoir l'excellence pour ses infirmiers et infirmières et faire avancer notre spécialité, qui est étroitement liée aux organismes provinciaux et à ses membres.

Respectueusement soumis,
Stephanie Carlson,
Présidente

Director of Education Report

NENA has seen growth and creativity in developing educational programs for emergency nurses. Your National Course Administration Committee (NCAC) is hard at work with dissemination of the TNCC and ENPC across Canada. NCAC is very involved with the rollout of two new core emergency nursing education courses: Emergency Practice Interventions Care-Canada (EPICC) in both English and French.

Two courses are now available—EPICC-Foundations and EPICC-Trauma. Congratulations to EPICC working team members for such fabulous work. The CTAS National Working Group NENA reps have been working hard in two domains: CTAS rollout in Ontario and CTAS course revisions. Your NENA education team is hard at work and spends many hours working on developing, teaching, and mentoring NENA-sponsored educational programs.

Emergency Nursing Certification

There is a lot of BUZZ around certification! Many emergency nurses are exploring this opportunity for career development. NENA is committed to providing study resources for emergency nurses applying for emergency nursing certification in Canada.

Recently, CNA had a certification discovery week (Aug 20-27, 2017) to promote the 20 nursing specialty certifications in Canada. Fifty Canadian nurses who have certification in one or more of the nursing specialties in Canada were mentors for discovery week.

NENA's certification committee would like to hear from emergency nurses about your successes with promoting certification in your workplaces and those strategies that you have implemented that assist emergency nurses in preparing to write the exam.

Contact information:
educationdirector@nena.ca

Canadian Concussion Collaborative (CCC)

Seventeen organizations across Canada participate in the CCC and NENA is one of those sponsoring organizations. Two new documents have been published on the website:

1) Four characteristics of good concussion clinics (July 2017)

2) The Top Five Key Messages from the 5th International Consensus Statement on Concussion in Sport (July 2017).

All documents are available in English and French.

Parachute Canada has published a new document on their website. This website also has numerous resources for education on concussion.

Canadian Guideline on Concussion in Sport / Lignes directrices canadiennes sur les commotions cérébrales dans le sport

http://www.parachutecanada.org/injury-topics/item/canadian-guideline-on-concussion-in-sport

Emergency Nurses Pediatric Course – 5th Edition update

The project is full steam ahead with the ENPC 5th revisions. The working group anticipates the rollout in 2018.

TNCC Instructors make their 20th anniversary as instructors!

Margaret Balzer (ON) and Carolyn Hill (ON) were recognized at NENA's AGM in Charlottetown, in May 2017.

ENPC Instructors make their 20th anniversary as instructors!

Audrey Bell-Peter (ON), Jane Stuart-Minaret (ON), and Marie Grandmont (MB) were recognized at NENA's AGM in Charlottetown, in May 2017.

Education opportunities for all NENA members—FREE! (The Rounds)

An organization that sponsors a virtual conference web-based program on emergency medicine and critical care has offered a free one-year membership for NENA members. All NENA members were sent an email on how to sign up for this opportunity. If you are new to NENA or missed the email, contact **educationdirector@nena.ca** for more information.

Submitted by
Margaret Dymond, RN, BSN, ENC(C)

Rapport de la directrice de l'éducation

L'ANIIU/NENA a vu sa croissance et sa créativité croître dans l'élaboration de programmes d'éducation pour les infirmiers et infirmières d'urgence. Votre Comité national d'administration de cours (CNAC/NCAC) travaille très dur dans la diffusion du TNCC et ENPC partout au Canada. Le CNAC participe beaucoup dans le lancement de deux importants cours d'éducation pour les infirmiers et infirmières d'urgence. Le Emergency Practice Interventions Care-Canada (EPICC) est disponible en français et en anglais.

Deux cours sont disponibles - *EPICC-Foundations* et *EPICC-Trauma*. Félicitations aux membres de l'équipe de travail EPICC pour un incroyable travail. Les représentants ANIIU/NENA du groupe de travail national de l'ÉCTG ont travaillé très dur dans les deux domaines : Le lancement ÉCTG en Ontario et les révisions de cours ÉCTG. Votre équipe d'éducation ANIIU/NENA travaille beaucoup et passe de nombreuses heures dans l'élaboration, l'enseignement et le mentorat de programmes d'éducation commandités par l'ANIIU/NENA.

Certification en soins infirmiers d'urgence

Il y a beaucoup de discussions autour de la certification ! De nombreux infirmiers et infirmières d'urgence explorent la possibilité d'un développement de carrière. L'ANIIU/NENA est engagée à fournir des ressources d'études pour les infirmiers et infirmières d'urgence qui font une demande de certification en soins infirmiers d'urgence au Canada.

Récemment, l'AIC a mis en place une semaine de découverte de la certification (20-27 août 2017) dans le but de promouvoir les 20 certifications de spécialités en soins infirmiers. 50 infirmiers et infirmières canadiens, détenant une certification dans une ou plusieurs spécialités en soins infirmiers au Canada, ont agi en tant que mentors durant la semaine de découverte.

Le comité de certification de l'ANIIU/NENA aimerait en savoir plus de la part des infirmiers et infirmières d'urgence au sujet de leurs réussites dans la promotion de certification dans leurs lieux de travail, ainsi que des stratégies mises en place pour aider les infirmiers et infirmières d'urgence dans la préparation de leur examen.

Coordonnées : **educationdirector@nena.ca**

Collaboration canadienne sur les commotions cérébrales (CCCC)

Dix-sept organismes partout au Canada participent à la CCCC et l'ANIIU/NENE fait partie des organismes commanditaires. Deux nouveaux documents ont été publiés sur le site web :

1) 4 caractéristiques de bonnes cliniques de commotion cérébrale (juillet 2017)

2) Les 5 meilleurs messages de la part du 5e énoncé du consensus international sur la commotion cérébrale dans le sport (juillet 2017)

Tous les documents sont disponibles en français et en anglais.

Parachute Canada a publié un document sur leur site web. Ce site web contient également de nombreuses ressources pour en savoir plus au sujet de la commotion.

Lignes directrices canadiennes sur les commotions cérébrales dans le sport / Canadian Guideline on Concussion in Sport **http://www.parachutecanada.org/injury-topics/item/canadian-guideline-on-concussion-in-sport**

Cours pédiatrique en soins infirmiers d'urgence – Mise à jour 5e édition

Le projet est en pleine expansion avec la 5e révision ENPC. Le groupe de travail anticipe un lancement pour 2018.

Les instructeurs TNCC célèbrent leur 20e anniversaire en tant qu'instructeur !

Margaret Balzer (ONT) et Carolyn Hill (ONT) ont été reconnues lors de l'AGM de l'ANIIU/NENA à Charlottetown (mai 2017).

Les instructeurs ENPC célèbrent leur 20e anniversaire en tant qu'instructeur !

Audrey Bell-Peter (ONT), Jane Stuart-Minaret (ONT) et Marie Grandmont (MB) ont été reconnues lors de l'AGM de l'ANIIU/NENA à Charlottetown (mai 2017).

Possibilités d'éducation pour tous les membres de l'ANIIU/NENA – GRATUITEMENT ! (Les ronds)

Un organisme commanditant une conférence web virtuelle basée sur la médecine d'urgence et les soins intensifs ont offert une année d'adhésion gratuite pour les membres de l'ANIIU/NENA. Tous les membres de l'ANIIU/NENA ont reçu un courriel sur la manière de s'inscrire. Si vous êtes un nouveau membre de l'ANIIU/NENA ou si vous n'avez pas reçu le courriel, contactez-nous à **educationdirector@nena.ca** pour en savoir plus.

Soumis par Margaret Dymond, RN, BSN, ENC(C)

Editor's introduction & commentary

I could not be more excited or proud to be the new editor of the *Canadian Journal of Emergency Nursing*. Though I am rather intimidated to take over from the very capable Ashleigh Malarczuk.

My vision for the CJEN, as editor, is to partner with Canadian emergency nurses to showcase the excellent work we do. My goal in this role is to bring scholarly process and scientific rigour while remaining accessible and collaborative. The CJEN is the ideal venue for showcasing Canadian Emergency Nursing in the domains of clinical care, education, leadership and research. Specialty areas I hope to further showcase are transport, forensic, northern and indigenous nursing. If you have a project you wish to undertake and need advice, or a paper you want to share with emergency nurses across the country, then please reach out. I want to work with you to showcase your hard work.

There are some changes and opportunities on the horizon. I will be working with the NENA board to work out new submission guidelines and article handling processes. If you wish to be a peer reviewer for the journal, please contact me describing your area of expertise. We are also seeking section editors in the areas of trauma, geriatrics and pediatrics for 2018, please contact me if you wish to volunteer for these positions. I will also be seeking expanded indexing in journal databases such as Medline, PubMed and Google Scholar. CJEN is our journal and I want all emergency nurses to be proud of it.

In this edition of CJEN, we have some world-class content. I am very proud to be sharing the work of Daniel Sundahl on our cover and an explanation of his perspective and art. Furthermore, this edition contains clinically focused literature review articles on trauma care topics by authors Christopher Picard and Elaine Cole. Original research has been submitted by Kevin Lobay et al. on community care emergency medical services and Phillipe Voyer et al. on delirium screening. This later author and his team's work is showcased in a special long-form research report. Allan Lai has provided an editorial on clinical education and Mathieu Figeys et al. have written a literature review on geriatric assessment teams in emergency departments. I am proud and grateful for the hard work of the authors, peer reviewers, editorial and publishing teams, especially during this, my first time at the helm of the journal—thank you all.

Matthew Douma, RN, BSN, ACCN, ENC(C), CCNC(C), CCN(C)
Clinical Nurse Educator
Emergency Services
Royal Alexandra Hospital Emergency Department, Edmonton, Alberta

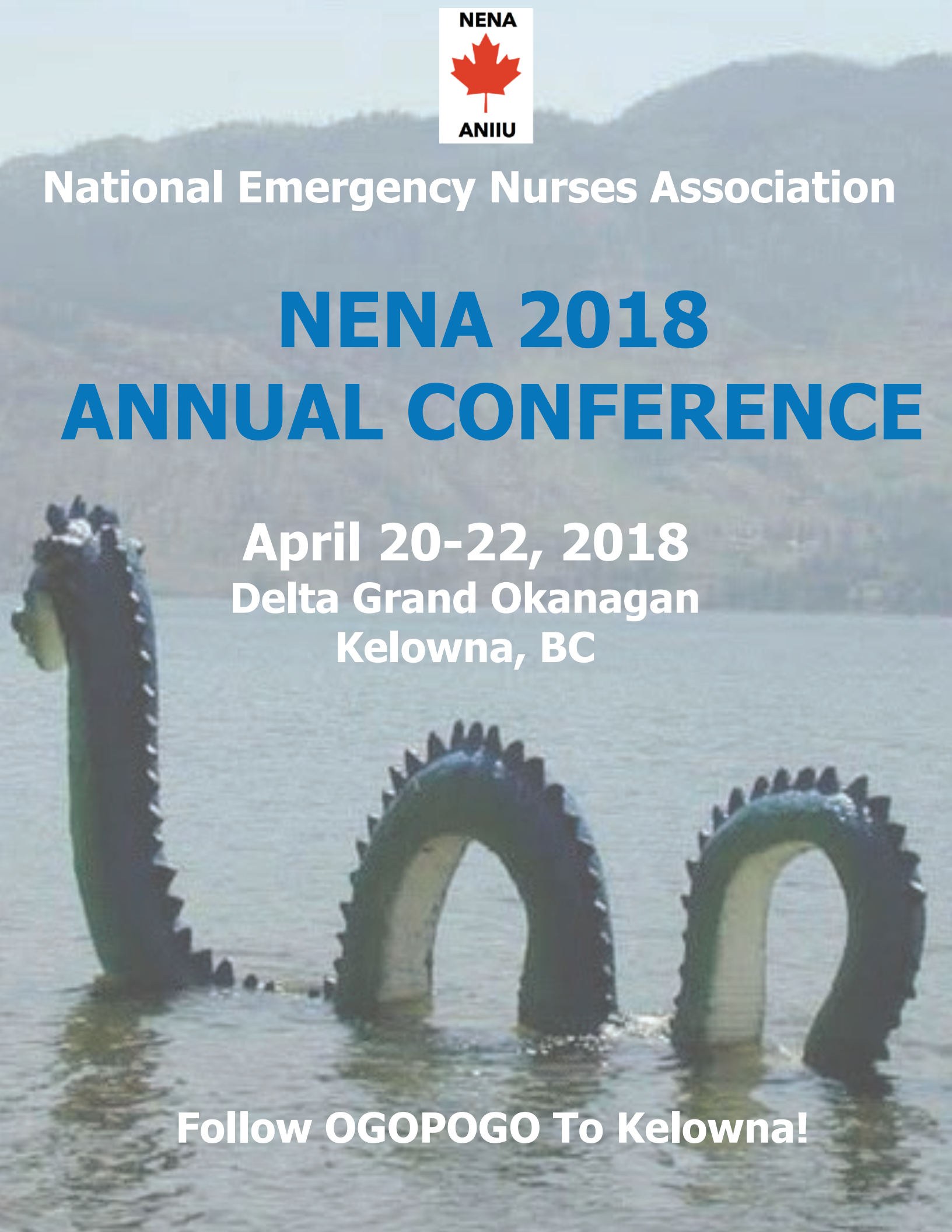
Treasurer's report

My name is Kitty Murray. I began my term as treasurer in July 2016. As a board member, my job is to work with our financial advisor, Wendy Atkinson, who keeps our books up to date and above board. Together, we discuss how to invest profits for short-term gains, we disperse funds for scholarships and bursaries, and we plan for our annual NENA conference. We operate as a not for profit organization.

Where do your yearly NENA membership fees go? NENA keeps $30 of membership fees (the balance going to the affiliated province of the member). This portion of fees provides monies for French translation of documents, course development (i.e., EPICC foundations, EPICC trauma and soon EPICC pediatrics), bursaries, research grants, CJEN (our journal), as well as our annual NENA conference. As well as these membership fees, NENA collects course fees from each participant and portions some of this to the affiliated provinces and some to NENA to provide these services.

I encourage all of you to be involved in either your provincial or national organization.

Kitty Murray
NENA Treasurer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Grant Innes
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Artistic and therapeutic expression

A few years ago, I heard a statistic that shocked me; 12 Canadian firefighters had killed themselves in 13 weeks. At the time, I knew about Post Traumatic Stress Disorder (PTSD) and its effects, but I had no idea just how fatal it really was. A week later, my platoon attended a lecture about the signs, the symptoms, and the causes of PTSD. As I listened to the speaker, I recognized many of the signs and the symptoms in myself and thought, do I have PTSD? No way! Difficulty sleeping, depression, being agitated and withdrawn were a few of the symptoms I recognized.

The speaker mentioned that many of his clients were surprised when he diagnosed them with this disorder; many felt that they did not have a 'trigger' event. I had to get checked. I made an appointment with a psychologist and had a few sessions where he told me that I was having a normal reaction to abnormal experiences. "Do I have PTSD?" I asked. "Yes, and anyone working in your field with the same amount of time and experience will have signs of it too." Luckily, my condition isn't debilitating like it is for so many others.

My disorder is a result of accumulated events rather than one specific experience. I process my thoughts by recreating the images in my head and reproducing them digitally. My artwork is the result of my healing process. When I started posting my images online, I was overwhelmed by the feedback I received. I definitely struck a nerve in the emergency workers' community—so many others could relate to my artwork and many said they broke down in tears when they saw the images. I am truly humbled by the international attention my artwork has received, as well, but what's more rewarding is the sense of community that it is fostering.

I have a virtual Rolodex of events in my head that invade my mind uninvited. I can control them during the day, but at night they enter my dreams and run amok. The motivation for my artwork is this Rolodex of events and calls I've attended. Often these calls spill into the emergency rooms of my community and I'm forced to share these nightmarish calls with the staff working there. There have been so many life-altering emergencies I've worked with the nurses in the ER; at the start of my career I hoped for this excitement, but now these calls haunt me. I wonder if these emergencies have impacted my nursing friends the same way.

I create my images by first choosing one of the invasive events in my mind. I stage the call and photograph it using coworkers and actors. When I work on the image I recreate how I felt during that call instead of what I saw, I do this by digitally drawing on top of the staged photograph. It takes about a week to finish each piece and when I'm done the organic invader from my mind is transferred into a lifeless, one-dimensional image on my computer screen. It's always scary to share my work and I still have several pieces I've never shown anyone. I never anticipated others would attach their own experiences to my artwork and connect with them so strongly.

I hear from so many first responders who don't get the help they need, or worse yet, who are not supported by their employers when it comes to mental health. I hear from a lot of people everyday about their experiences with mental health and emergency services. So many are so similar, we truly aren't alone in the way we feel. I've also heard from many who have received the help they need and are now in a better mental space. Here's a recent message I received from a paramedic in the United States.

> *"Hello Mr. DanSun. I wanted to thank you for your artwork and to let you know it's made a difference in my life. About a year ago I was in a really bad space, I was in paramedic school and carried a lot of demons with me from my experiences on the road. I saw your artwork and read some of the comments and realized others were feeling the same, it made me feel like I wasn't alone and that what I was feeling was normal. I called out for help and received the treatment I needed. Anyway, last night I had my first 'save' during a cardiac arrest, it was my first code as the lead paramedic. Thank you for getting me to the point where I was able to make a difference in this man's life. Keep doing what you're doing."*

There is help out there from people who specialize in mental health for emergency workers. So many of us feel there's no way out and, for some, it's the end of us. Seek the help you need.

I get criticized by people, telling me that I'm only showing the negative side of emergency services and that my work is so sad and depressing. My answer to them is that I'm trying to bring awareness to mental health and PTSD through my artwork by showing the intense situations we face. I think being an emergency worker is an amazing career and I recommend it to anyone. What other job can you make such a true difference in somebody's life?

Thank you everyone for your continued support. Stay safe and let's watch out for each other.

Respectfully,
Daniel Sundahl
DanSun Photo Art
www.dansunphotoart.com

Editor's note: *If you are experiencing stress because of trauma you have experienced, please reach out. You are not alone. Resources may be available to you through your workplace employee assistance program and your primary care provider. You can call the Ontario Mental Health Helpline anytime at 1-866-531-2600. PTSD information and resources are available through the PTSD Association of Canada, www.ptsdassociation.com. If you have a professional interest in PTSD care, Simon Fraser University in British Columbia has a part-time online program called First Responders Trauma Prevention and Recovery Certificate,* ***www.sfu.ca***

Expression artistique et thérapeutique

Il y a quelques années, j'ai entendu parler d'une statistique qui m'a choquée; En 13 semaines, 12 pompiers canadiens s'étaient suicidés. À ce moment, je savais ce qu'était le trouble du stress post-traumatique (TSPT) et ses effets, mais je ne savais pas à quel point il pouvait être fatal. Une semaine plus tard, mon peloton a participé à une lecture au sujet des signes, des symptômes et des causes associées au TSPT. Pendant que j'écoutais le conférencier, j'ai remarqué que je subissais une partie de ses signes et symptômes. Est-ce que je souffrais aussi de TSPT ? C'est impossible ! Problèmes de sommeil, dépression, agitation excessive et en retrait, faisaient partie des symptômes que je reconnaissais en moi.

Le conférencier a mentionné que plusieurs de ses clients étaient surpris de savoir qu'ils avaient été diagnostiqués comme souffrant d'un TSPT, et beaucoup d'entre eux pensaient qu'ils n'avaient pas d'événements « déclencheurs ». Je devais savoir. J'ai pris un rendez-vous avez un psychologue et j'ai fait quelques séances. Il m'a dit que j'avais une réaction normale à des expériences anormales. Je lui ai demandé si je souffrais de TSPT. Il m'a répondu : « Oui, et toute personne travaillant dans votre domaine, avec la même expérience et le même temps passé à faire ce travail, aurait également des signes similaires de TSPT ». Heureusement, ma condition n'est pas aussi débilitante que celle d'autres personnes souffrant du même trouble.

Mon trouble provient d'une accumulation de plusieurs événements plutôt que d'une seule expérience spécifique. Je traite mes pensées en recréant des images dans ma tête et en les reproduisant numériquement. Mes créations artistiques sont les résultats de mon processus de guérison. Quand j'ai commencé à afficher mes images en ligne, j'ai été très surpris par le nombre incroyable de commentaires que j'ai reçus. On aurait dit que j'avais touché une corde sensible dans ma communauté des travailleurs et travailleuses d'urgence. Tellement de personnes se sont retrouvées dans mes créations artistiques, et même certains m'ont dit qu'ils s'étaient mis à pleurer après avoir vu les images. J'ai été très touché par l'attention internationale de mes créations artistiques, mais ce qui est encore plus gratifiant est la communauté qui s'est créée grâce à cela.

J'ai un nombre impressionnant d'événements indésirables qui envahissent ma tête. J'arrive à les contrôler durant la journée mais, la nuit, ils entrent dans mes rêves et font ce qu'ils veulent. La motivation de mes créations artistiques est en rapport avec ces nombreux événements et ces appels auxquels j'ai participé. Souvent, ils entrent dans les salles d'urgence de ma communauté et je suis obligé de partager ces appels cauchemardesques avec le personnel qui travaille ici. Il y a eu tant d'urgences marquantes auxquelles j'ai participé avec les infirmiers/infirmières des SU. Au début de ma carrière professionnel, j'avais hâte de vivre ces événements, mais maintenant ils me hantent. Je me demande si ces moments ont également impacté mes amis infirmiers/infirmières de la même façon.

Je crée mes images en choisissant d'abord un de ces événements évasifs présents dans ma tête. Je mets en scène l'appel et je capture l'image en utilisant des collègues de travail et des acteurs. Quand je travaille sur l'image, je fais ressortir les émotions que j'ai ressenties lors de l'appel au lieu de décrire ce que je voyais, puis je dessine numériquement au-dessus de l'image que j'ai mise en scène. Il me faut environ une semaine pour terminer chaque pièce et quand j'ai terminé, cet envahisseur intérieur présent dans ma tête devient cette image sans vie et unidimensionnel sur l'écran de mon ordinateur. C'est toujours un peu effrayant de partager mes œuvres, et j'en ai plusieurs que je n'ai jamais présentées. Je n'ai jamais imaginé que d'autres personnes allaient intégrer leurs propres expériences à mes créations artistiques et s'y connecter de manière aussi forte.

Tellement de premiers intervenants me contactent et n'ont pas l'aide qu'ils devraient recevoir, et certains ne sont même pas soutenus par leurs employeurs quand il s'agit de santé mentale. Tous les jours, de nombreuses personnes me parlent de leurs expériences avec les services de santé mentale et d'urgence. Il y a tellement de personnes qui pensent comme nous, et nous ne sommes pas les seuls à ressentir cela. D'autres ont réussi à recevoir de l'aide dont ils avaient tellement besoin et se sentent mentalement mieux maintenant. Voici un récent message que j'ai reçu de la part d'un ambulancier aux États-Unis.

> *« Bonjour M. DanSun. Je voulais vous remercier pour vos créations artistiques et vous faire savoir qu'elles ont fortement influencé ma vie ». Il y a un an, je me suis retrouvé dans un sombre monde intérieur. J'étais à l'école d'ambulancier et je portais avec moi de nombreux démons qui s'étaient accrochés à moi en raison de mes nombreuses expériences sur la route. J'ai vu vos créations artistiques et lu certains des commentaires, et j'ai vite réalisé que je n'étais pas le seul à ressentir cela. J'ai vraiment eu l'impression que je n'étais plus seul et que ce que je ressentais était normal. J'ai demandé de l'aide et j'ai reçu le traitement dont j'avais tant besoin. La nuit dernière, j'ai réussi à sauver une vie pour la première fois au cours d'un arrêt cardiaque. C'était mon premier appel en tant qu'ambulancier en chef. Merci de m'avoir aidé à arriver là où j'en suis en ayant réussi à changer la vie de cet homme. Continuez à faire ce que vous faites ».*

Les personnes spécialisées en santé mental pour les travailleurs et travailleuses d'urgence sont là pour vous aider. Beaucoup d'entre nous pensent qu'il n'y a pas de sortie à ce cauchemar, mais l'aide est là.

Certaines personnes ont critiqué mes œuvres en me disant qu'elles ne montrent que le côté négatif des services d'urgence et que mon travail est triste et déprimant. Je leur réponds en leur disant que j'essaye de sensibiliser les personnes à la santé mentale et au PSPT par mes créations artistiques en montrant les situations intenses auxquelles nous faisons face. Être un travailleur d'urgence est quelque chose d'incroyable et je le recommande à

quiconque car il n'y a pas beaucoup d'autres emplois qui vous permettent de faire une réelle différence dans la vie d'une personne.

Merci à toutes et à tous pour votre soutien continu. Restez prudents et aidons-nous les uns les autres.

Respectueusement,
Daniel Sundahl
DanSun Photo Art
www.dansunphotoart.com

Note de la rédaction : Si vous êtes victime de stress à cause d'un traumatisme que vous avez subi, n'hésitez pas à communiquer. Vous n'êtes pas seuls. Des ressources sont disponibles dans votre lieu de travail par le biais de programme d'aide aux employés et votre fournisseur de soins primaires. Vous pouvez contacter en tout temps le Service Info Santé mentale Ontario au 1-866-531-2600. Les informations et les ressources sur le TSPT sont disponibles par le biais de la PTSD Association of Canada (www.ptsdassociation.com). Si vous avez un intérêt professionnel dans les soins associés au TSPT, l'Université Simon Fraser de Colombie-Britannique a un programme en ligne à temps partiel qui se nomme « First Responders Trauma Prevention and Recovery Certificate » (www.sfu.ca).

NCAC report

Fall always reminds me of the beginning of a new school year and even though I am no longer in school, somehow I have this renewed sense of purpose; a time to start afresh, to make "lists" of things to do (which we have put off during those lazy days of summer). L'automne me rappelle toujours le début d'une nouvelle année scolaire. Je ne suis pas à l'école mais je pense que je devrais être plus organisé comme quand j'étais étudiant.

So, it seems appropriate to be asked to do a "report" of NCAC's activities for the journal. On m'a demandé de faire un résumé des activités de la NCAC. It also seems appropriate that this should follow Thanksgiving and Emergency Nursing Week—where we reflect on how thankful we are for family, friends and country and where we celebrate our brothers and sisters in this incredible profession of ours. Je voudrais tout d'abord vous dire Joyeux Thanksgiving et Bonne Semaine des soins infirmiers d'urgence à tous mes collègues infirmiers.

In the last journal, you met our current NCAC members: Denis Bouchard, our French rep; Dawn Paterson, our Western rep; Sharon Ramagnano, our Central rep; Maureen Doody, our Eastern rep; Val Lamb, our EPICC rep and yours truly, the Chairperson of NCAC. At the end of May, we all met for the first time as the National Course Administrative Committee at the NENA Conference in beautiful Charlottetown, PEI. I was humbled and inspired to be part of this dynamic group of nurses. The leadership and vision of these incredible nurses is what drives our committee. We have a shared commitment and value of

NCAC teaching EPICC in Charlottetown! From left to right: Maureen Doody, Val Lamb, Denis Bouchard, Monique McLaughlin, Sharon Ramagnano and Dawn Paterson.

connecting with nurses nationally and to support access to quality nursing education. We are concerned about the barriers (financial, language and geographical) that prevent nurses from accessing education. Les infirmières de ce comité représentent le meilleur des soins infirmiers à l'échelle nationale. We are voicing those concerns at the national table as we work to overcome those barriers. We are currently in negotiations with ENA around the contract to provide TNCC and ENPC in Canada. We are still advocating for French translation in all of our educational materials. We are supporting the rollout of EPICC nationally, as we feel EPICC provides many solutions to some of those barriers to education. For anyone interested in knowing more about EPICC, feel free to check out the website epicclearning.ca. Nous travaillons sur le contrat avec ENA pour TNCC et ENPC. Nous aidons à soutenir l'éducation EPICC. Nous parlons pour la traduction française.

Our Facebook page TNCC ENPC EPICC (NCAC) is a wonderful opportunity for us to share articles, podcasts, etc., to motivate nurses in lifelong learning. It is also a great networking for nurses to meet nationally. We encourage you to post photos of your courses, share articles, podcasts on the Facebook page. We love hearing from you. Connect with us on Facebook. Share your photos of your courses, interesting articles (yes in French). Please also contact as at **courses@nena.ca** (this is our e-mail address and we will definitely respond to your questions). We need to hear your concerns, questions and comments. We want to be a responsive committee to you. Nous voulons entendre vos pensées et vos questions. Notre comité est là pour servir les infirmières.

"The best way to find yourself is to lose yourself in the service of others."
—Mahatma Ghandi

Monique McLaughlin
Chairperson NCAC

Provincial snapshots

The year 2017 has been a productive one for many of the provincial emergency nursing associations. Numerous challenges and opportunities are facing emergency nurses across the country.

Mental health and addictions pose some of the greatest challenges for emergency nursing in the west. British Columbia continues to be the nation's opioid crisis epicentre with Alberta following second. The Canadian Institutes of Health Information are reporting a ten-fold increase in Albertan opioid-related hospital admissions in October 2017. Under significant pressure, the Saskatoon Health Region is expected to open a dedicated assessment unit for people experiencing addictions or mental health emergencies, followed by a permanent mental health emergency department in 2019.

The Saskatchewan Ministry of Health has announced that, effective December 4, Saskatchewan will amalgamate the current 12 health regions into one, operating under the name of *Saskatchewan Health Authority*. Names of new board members were announced in October and Saskatoon will host the head offices.

The predictable stated objective is to improve coordination of services to provide quality and timely healthcare to all Saskatchewan residents. Delivery of care to rural and northern areas is difficult, as it is in the other provinces and territories. Saskatchewan consists of more than 250,000 km of roads, the greatest amount of road surface of all the provinces. Fiscal concern is a strong driver. Operational details remain either undecided or unannounced at the time of this writing.

Manitoba is facing some the greatest fiscal challenges that Canadian emergency nurses have seen since the mid-1990s in Alberta and early 2000s in New Brunswick. The Winnipeg Regional Health Authority is committed to saving 83 million dollars in the 2017/18 fiscal year. Hospital specialization is on the horizon for Winnipeg. By comparison, cities like Vancouver and Calgary have fewer emergency departments per capita, and wait times are roughly half of what they are in Winnipeg. Clinical consolidation is underway with Victoria Hospital emergency department converting into an Urgent Care Centre and Misericordia Urgent Care transitioning into an Outpatient IV Clinic. Eventually the Seven Oaks emergency department will convert into an Urgent Care Centre and the Concordia Hospital's emergency department will close altogether. At end of the 24-month reform period, three emergency departments and two Urgent Care Centres will remain in Winnipeg. Considering the immense strain emergency nurses in Winnipeg are experiencing, the Emergency Department Nurses' Association of Manitoba requested a change of venue for the Spring 2018 conference, which will now be hosted in Kelowna, BC.

In Ontario, eCTAS has been rolled out in many emergency departments. The Emergency Nurses Association of Ontario (ENAO) is a central contributor to its successful implementation. As of October 2017, there are more than 120 hospitals participating, triaging approximately 400,000 patients per month. More money is being allocated by the Ontario government, 140 million dollars, targeting alternative level of care patients and improved access to homecare—a "back-end" investment to reduce ED wait times. Ontario has one of the lowest rates of hospital bed availability in North America and West Europe at 2.3 beds per 1,000 people.

In the summer of 2017, Maritime emergency departments struggled with reduced hours and short staffing-related closures. Fortunately, some very successful conferences were also had in the region. The NENA 'Find the Edge' conference in Charlottetown was a shining success, as well as the Atlantic Trauma and Emergency Medicine Conference in Moncton. The 2019 NENA conference is in the planning stages, to be held in New Brunswick, and hosted by the 70 energetic and capable members of NBENA. In a further exciting development in nursing education, Holland College in PEI is pioneering nursing education in dementia care using the principles of Gentle Persuasive Approach.

Thank you to Marie Grandmont, Janice L. Spivey, Debra Pitts for their contributions to this segment.

Clinical teaching strategies that inspire and get the most out of your learners

By Allan Lai

Introduction

Clinical teaching has become a fundamental skill in emergency nursing. The demand for 24-hour emergency care has never been greater, and coupled with the global nursing shortage, emergency departments (ED) are recruiting and training more specialized emergency nurses to meet the demands. Technology is evolving at a rate that has never been witnessed in history, which, in turn, has led to innovations in patient treatment that greatly influence how ED nurses practise. Some argue that it is a professional responsibility for current emergency nurses to train and support the success of the next generation of emergency nurses.

The pressures facing EDs have been well documented. A lack of physical space to provide care, high acuity, and a seemingly revolving door of patients are all problems that nurses face when they teach. Complicating this are the ambiguous roles for the emergency nurse working with a learner: Should they be teaching or facilitating? How should they teach? Moreover, the pressures of time can give the impression that a deep exploration of clinical discussions should take a backseat to patient care.

Whereas the literature surrounding clinical teaching in emergency medicine is extensive, searches for literature on clinical teaching specific to emergency nursing yield limited results. To address this gap, this article will offer effective teaching strategies for emergency nurses hoping to inspire and get the most out of learners in the ED.

A structured approach

Studies exploring the characteristics of effective clinical instructors (as defined by students) have suggested that effective instructors promote autonomy and have expertise in the relevant clinical setting, strong feedback, and clear communication skills (Kelly, 2007; Mailloux, 2006; Tang, Chou, & Chiang, 2005). To apply these characteristics to the ED, the following strategies are presented in an ABCDEFGHI mnemonic familiar to emergency nurses.

Assess the learner, Build trust, Cue them, and Diagnose their learning

Assessing and acknowledging the learner's experience is critical in establishing a clear and respectful relationship. Given that nearly all medical, surgical, and psychiatric conditions in varying degrees of acuity present to the ED, an understanding of the learner's prior experience will provide the means to identify the learner's stage of competence and transition (Kramer, 1974; Benner, 1984). For example, an emergency nurse trainee may have a wealth of experience in critical care and, thus, be comfortable with rapid sequence intubation. However, the trainee may not have been exposed to or have treated an undifferentiated pelvic bleed before. Cuing the learner to identify their learning needs and strategies based on their experience will empower them to decide how and what to learn. Putting the learner in the driver's seat facilitates their accountability for their own learning, which is in keeping with the principles of adult learning theory (Kaufman, 2002).

Having set the stage earlier allows the emergency nurse to diagnose the learner; that is, to identify what type of competence and transition stage they are experiencing. A learner identified as being keenly and consciously aware of their incompetence and who may be in transition shock requires mentorship, positive feedback, and normalization. On the other hand, a learner diagnosed as being unconsciously incompetent and in a honeymoon phase would require realistic expectation setting (Kramer, 1974).

Expectation setting, Facilitation, Giving feedback with clean language

The emergency nurse and the learner should set expectations at the beginning of clinical, and they should mutually evaluate their progress routinely throughout clinical training. Expectations should be set in relation to the learner's competence. The majority of the time, emergency nursing students are novices in their approach to ED patients. It's therefore necessary to set realistic expectations to reflect their novice level. For example, an emergency nursing student may have the goal of planning and delivering care to a patient suffering from anaphylaxis, but their speed and skill may not be fully developed. In this example, the emergency nurse should share their concern for acuity beyond the learner's skill level, and they should come to a mutual agreement with the learner regarding the best way to approach the patient.

When applying the principles of adult learning theory to our learners, emergency nurses must recognize that trainees are autonomous and problem-focused, that they learn from their mistakes, and that true theory conceptualization must be relevant to the practice (Kaufman 2002). This method of delivering education is less about "teaching" and more about facilitation. For example, allowing the learner to see a new patient arriving to a care space independently is much more beneficial for their learning than "tag-teaming" a patient without the learner's consent. As the facilitator, the emergency nurse should ensure that key patient treatment priorities are not delayed, such as timely electrocardiograms for acute chest pain.

ED patients often have incomplete histories or no collateral information. Allowing the learner to experience this independently, sort through their line of questioning, and make minor mistakes will let the learner truly grasp the practice of emergency nursing. Once the learner has reached a conclusion or stalled in their progress, the emergency nurse can facilitate the learner's

experience by asking clear, concise questions that may have more than one acceptable answer. These questions are generally open-ended and genuine, and they facilitate learner reflection. One such example would be: "What made you choose to apply continuous SpO2 monitoring?" Avoid asking leading questions where a specific answer is wanted, such as: "What three conditions require SpO2 monitoring?"

Using clean language, such as debriefing with good judgment, is a skill that can further enhance learner reflection. Advocacy/inquiry is a method of clean questioning where the emergency nurse reveals their frame of reference while genuinely inquiring about the reason for the learner's action or inaction (Rudolph et al, 2007). For example, the emergency nurse may choose to ask a question using advocacy/inquiry such as: "I noticed you did not apply an SpO2 probe in your primary survey. I felt it would've helped your decision-making. Help me understand your thought process." This approach allows the emergency nurse to reveal their perspective and prevents the learner from guessing what their teacher wants them to say while simultaneously allowing for a genuine answer. The learner may respond with an answer that can generate rich clinical discussion, such as: "I did not think the SpO2 reading would have changed my management because the fingers were cold and we would treat the dyspnea regardless of the SpO2 reading." One powerful question can generate more learning points than multiple closed questions.

Effective constructive feedback in the emergency department must be respectful, concise, timely, and given only with the learner's permission. Mistakes will happen, and if used as learning opportunities, they serve as powerful teaching tools. While setting the stage of clinical, an emergency nurse who informs the learner that feedback will be shared gains their permission. This allows the relationship to be respectful, and trust is reinforced. Feedback should be objective, concise, timely, and devoid of jargon. The speed of the ED can cause the learner to forget and, in some cases, the learner may genuinely be unaware of their mistakes. Self-concept and motivation to learn are driving factors for learner success, and an emergency nurse can promote this by sharing positive feedback often. Both positive and constructive feedback should allow the learner to share their perspective.

Hear and listen more/talk less & Independence

It has been found that teachers wait on average less than one second for a response to a question from a learner (Peninciner, 2002). The emergency nurse should be prepared for silence when waiting for an answer to a question. Be prepared to wait ten seconds or longer. This allows the learner to hear, deconstruct, interpret, synthesize, and formulate a response. In the event that patient care is a priority resulting in time limitations, inviting the learner to reach a conclusion and return when ready to share can be highly effective. Promoting this independence will motivate the learner, tap into their experience, and orient them to do more and memorize less.

Conclusion

Clinical teaching in busy emergency departments is both challenging and rewarding. Embracing the uniqueness of the ED and incorporating these qualities into teaching strategies can lead to rich learning experiences for emergency nursing students. Although these strategies are provided in a linear format here, like emergency assessment frameworks, one can be flexible and creative in implementing them.

About the author

Allan Lai, BSN, RN, ENC(C), completed his BSN at Thompson Rivers University in Kamloops, BC. He currently practises as an emergency nurse at Vancouver General Hospital and teaches the emergency nursing specialty program at the British Columbia Institute of Technology. He also supports the EPICC National Design Team in various ways, most recently as a project team member for the upcoming EPICC-Pediatrics course.

Les stratégies d'enseignement clinique qui inspirent et améliorent les connaissances de vos apprenants

Par Allan Lai

Introduction

L'enseignement clinique est devenu une compétence fondamentale dans le domaine des soins infirmiers d'urgence. La demande en soins d'urgence 24/24 n'a jamais été aussi importante, surtout si l'on prend en compte la pénurie mondiale d'infirmiers/infirmières. Les services d'urgence (SU) embauchent et forment de plus en plus d'infirmiers et infirmières spécialisés pour répondre aux demandes. La technologie évolue à une vitesse qui jamais été observée au cours de l'histoire humaine, ce qui en conséquence entraîne de nouvelles innovations dans le traitement des patients et influence grandement la manière dont les infirmiers et infirmières des services d'urgence pratiquent leur métier. Certains pourraient même dire que cela en va de la responsabilité professionnelle des infirmiers et infirmières d'urgence actuels de former et de soutenir avec succès la prochaine génération d'infirmiers et infirmières d'urgence.

Les pressions auxquelles font face les services d'urgence sont très bien documentées. Quand les infirmiers et infirmières doivent enseigner à d'autres, ils/elles se retrouvent face à de nombreux problèmes, comme un manque d'espace physique pour fournir des soins appropriés, un niveau d'acuité élevé et un va-et-vient constant de nouveaux patients, sans oublier leurs rôles ambigus qu'ils/elles doivent jouer quand ils/elles doivent travailler avec un apprenant. Doivent-ils/elles enseigner ou soigner ? De quelle manière devraient-ils/elles enseigner ? En outre, les pressions associées au temps peuvent donner l'impression que des discussions cliniques plus approfondies ne devraient pas prendre le dessus sur les soins apportés aux patients.

Même si la documentation relative à l'enseignement clinique dans la médecine d'urgence est importante, les recherches de documentation en rapport avec l'enseignement clinique des infirmiers et infirmières d'urgence n'ont donné que peu de résultats. Pour aborder cet écart, cet article va essayer de proposer certaines stratégies d'enseignement efficaces pour les infirmiers et infirmières d'urgence désirant inspirer d'autres et améliorer les connaissances et compétences des apprenants dans les SU.

Une approche structurée

Les études explorant les caractéristiques des instructeurs cliniques efficaces (telles que définies par des étudiants) suggèrent que ces derniers doivent promouvoir l'autonomie et avoir l'expertise dans des milieux cliniques pertinents, une importante rétroaction et de bonnes compétences de communication (Kelly, 2007; Mailloux, 2006; Tang, Chou & Chiang, 2005). Pour appliquer ces caractéristiques aux SU, les stratégies suivantes sont présentées en utilisant un moyen mnémonique ABCDEFGHI connu des infirmiers et infirmières d'urgence.

Évaluer l'apprenant, instaurer la confiance, les mettre à jour et « diagnostiquer » leur apprentissage

Évaluer et reconnaître l'expérience de l'apprenant sont essentiels pour créer une relation professionnelle claire et respectueuse. Étant donné que toutes les conditions médicales, chirurgicale et psychiatriques, à différents degrés, sont présentes dans les SU, une compréhension appropriée de l'expérience préalable de l'apprenant permettra à l'instructeur de mieux identifier les niveaux de compétences et les transitions de l'apprenant (Kramer, 1974; Benner, 1984). Par exemple, une infirmière en formation peut détenir une expérience approfondie dans le domaine des soins intensifs et se sentir confortable avec une séquence rapide d'intubation, mais peut ne pas avoir été exposée par le passé à, ou avoir traité, un saignement pelvien indifférencié. Par conséquent, il est important de mettre à jour les connaissances des apprenants afin d'identifier les besoins et les stratégies d'apprentissage en se basant sur leurs expériences afin qu'ils puissent être mesure de décider comment et ce qu'ils doivent apprendre. En mettant les apprenants dans le siège du conducteur, on les rend responsables de leur apprentissage, tout en conservant les principes de la théorie de l'apprentissage chez les adultes (Kaufman, 2002).

En mettant en place au préalable un certain contexte dans lequel l'apprentissage doit être fait, cela permet à l'infirmier/infirmière d'urgence de « diagnostiquer » les apprenants; cela signifie qu'il faut identifier les types de compétences et d'étapes de transitions qu'ils doivent expérimenter. Un apprenant correctement identifié comme étant bien conscient de ses incompétences, mais pouvant se retrouver face à un choc de transitionnel, nécessitera un mentorat, une rétroaction positive et une normalisation. D'un autre côté, un apprenant « diagnostiqué » comme n'étant pas conscient de ses incompétences, et se trouvant en phase « lune de miel », nécessitera un cadre avec des attentes plus réalistes (Kramer, 1974).

Établir des attentes, faciliter, fournir une rétroaction avec un langage clair

L'infirmier/infirmière d'urgence et l'apprenant doivent établir des attentes dès le début de l'étape clinique. Ils doivent aussi régulièrement et mutuellement évaluer leurs progrès en tout temps. Les attentes doivent être établies en lien avec les compétences de l'apprenant. La majorité du temps, les étudiant(e) s en soins infirmiers d'urgence sont des novices dans leurs approches face aux patients des SU. C'est pour cette raison qu'il est nécessaire de mettre en place des attentes réalistes pour mieux prendre en compte ce niveau novice. Par exemple, une étudiante en soins infirmiers d'urgence peut avoir des connaissances dans la planification et la prestation de soins à des patients souffrant d'anaphylaxie, mais leur rapidité et leurs compétences ne sont

pas encore entièrement développées. Dans cet exemple, l'infirmier/infirmière d'urgence se doit de partager leur préoccupation et d'aller au-delà du niveau de compétence de l'apprenant, et ils doivent tous deux arriver à une entente mutuelle sur le meilleur moyen d'approcher le patient.

Lorsque l'on applique les pratiques de la théorie d'apprentissage pour les adultes à nos apprenants, les infirmiers et infirmières d'urgence doivent reconnaître que les stagiaires sont autonomes, axés sur la résolution de problèmes, qu'ils doivent apprendre de leurs erreurs et que la véritable conceptualisation de la théorie doit être en rapport avec la pratique (Kaufman 2002). Cette méthode pour dispenser l'éducation est moins associé à « l'enseignement » et plus en rapport avec la facilitation. Par exemple, l'apprenant qui examine un nouveau patient de lui-même en salle de soins peut trouver cela beaucoup plus enrichissant que de l'obliger à examiner un patient spécifique sans le consentement de l'apprenant. En tant que facilitateur, l'infirmier/infirmière d'urgence doit s'assurer que les principales priorités en matière de traitement du patient ne soient pas retardées; telles que les électrocardiogrammes pour les douleurs aigues à la poitrine.

Les patients des SU viennent souvent avec des histoires incomplètes ou sans renseignements accessoires. En permettant à l'apprenant de découvrir cela de lui-même, souvent par le biais de questions posées au patient, et même en commettant quelques erreurs, il sera en mesure de réellement comprendre les nombreuses pratiques associées aux soins infirmiers d'urgence. Dès que l'apprenant semble avoir atteint une certaine phase ou semble stagner dans sa progression, l'infirmier/infirmière d'urgence peut faciliter l'expérience de l'apprenant en posant des questions claires et précises pouvant offrir plusieurs choix de réponses. Ces questions sont généralement ouvertes et sincères et peuvent aider à promouvoir la réflexion de l'apprenant. Une telle question pourrait être : « Pourquoi avez-vous choisi d'appliquer une surveillance continue SaO2 ? » Évitez de poser des questions directes obligeant l'apprenant à donner une réponse spécifique, comme « Quelles sont les trois conditions nécessaires à une surveillance SaO2 ? »

L'utilisation d'un langage clair, comme un compte-rendu avec un bon jugement, est une compétence qui permettra d'améliorer la réflexion de l'apprenant. Plaidoyer/demander est une méthode de questionnement claire permettant à l'infirmier/infirmière d'urgence de montrer leur cadre de référence tout en posant des questions sincères au sujet de l'action ou de l'inaction de l'apprenant (Rudolph et al, 2007). Par exemple, l'infirmier/infirmière d'urgence peut décider de poser une question de cette façon : « J'ai remarqué que tu n'as pas appliqué une sonde SaO2 lors de ton premier examen. Je pense que cela aurait pu t'aider dans tes prises de décision. Aide-moi à comprendre ton processus de réflexion ». Cette approche permet à l'infirmier/infirmière d'urgence de révéler leur perspective et d'éviter que l'apprenant ne devine la réponse à donner à l'enseignement, en laissant la voie à une réponse plus ouverte et sincère. Par conséquent, l'apprenant peut donner une réponse pouvant entraîner une discussion clinique plus approfondie, comme : « Je ne pense pas qu'une lecture SaO2 aurait pu changer ma décision parce que les doigts étaient froids et nous aurions traité la dyspnée quels que soient les résultats de la lecture SaO2 ». Une forte question ouverte peut offrir davantage de points d'apprentissage que plusieurs questions fermées.

Une rétroaction constructive et efficace, dans un service d'urgence doit être respectueux, précis, opportun et être seulement donnée avec le consentement de l'apprenant. Il va sans dire que des erreurs se produiront, mais si elles sont utilisées de façon appropriée, elles peuvent alors devenir de puissants outils d'apprentissage. Lors de la mise en place de l'étape clinique, un(e) infirmier/infirmière d'urgence se doit d'obtenir le consentement de l'apprenant avant de partager la rétroaction. Cette étape permet de créer une relation professionnelle forte, renforçant ainsi la confiance. La rétroaction doit être objective, claire, opportune et être dépourvue de jargon. La rapidité des SU peut parfois faire oublier certaines choses à l'apprenant et, dans certains cas, ce dernier peut ne pas prendre conscience de ses erreurs. Le concept de soi et l'envie d'apprendre sont d'importants facteurs dans la réussite de l'apprenant, et l'infirmier/infirmière d'urgence peut utiliser cela en partageant souvent des rétroactions positives. Une rétroaction positive et constructive devrait permettre à l'apprenant de partager ses points de vue.

Écouter plus, parler moins et donne une certaine indépendance

Il a été remarqué que les enseignants attendaient, en moyenne, moins d'une seconde pour obtenir une réponse de la part d'un apprenant (Peninciner, 2002). L'infirmier/infirmière d'urgence doit être prêt(e) à accepter un moment de silence avant d'obtenir la réponse de l'apprenant. Préparez-vous à attendre dix secondes ou plus. Cela permettra à l'apprenant d'écouter, d'interpréter et de formuler une réponse. Si vous remarquez que les soins des patients deviennent une priorité et entraîne une limite de temps, alors invitez l'apprenant à conclure rapidement et à revenir quand il sera prêt à partager sa réponse avec vous. En mettant en place cette méthode d'indépendance, cela motive davantage l'apprenant, lui permet d'inclure ses expériences passées à sa réponse et l'oblige à agir plus et à mémoriser moins.

Conclusion

L'enseignement clinique dans les services d'urgence est à la fois stimulant et gratifiant. En acceptant le caractère unique des SU et en intégrant ces qualités dans les stratégies d'enseignement, il est possible d'offrir aux étudiants en soins infirmiers d'urgence des expériences d'apprentissage enrichissantes. Même si ces stratégies sont fournies ici en format linéaire, comme les cadres d'évaluation d'urgence, il est possible de rester flexible et créatif dans leur intégration.

Au sujet de l'auteur

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Major trauma in the elderly: The effects of ageing on ED assessment

By Elaine Cole

Canada's population is ageing. In 2016, there were more people aged 65 and over than those aged 17 and under (Statistics Canada, 2016). This population change is predicted to continue and by 2036 one quarter of people in Canada will be aged 65 or more (Canadian Medical Association, 2016). Improvements in health, social care and lifestyle have resulted in people living for longer and many are remaining relatively active, therefore the incidence of traumatic injury in this age group is rising. The proportion of elderly trauma presenting to the Emergency Department (ED) is growing annually (Kozar et al., 2015) and the volume of older people with significant injury is expected make up more than a third (39%) of global trauma admissions by 2050 (Banks & Lewis, 2013).

Unlike pediatric trauma care, the optimal management of elderly trauma currently lacks age-specific treatment guidelines and clinical protocols. Many severely injured older patients have altered responses to shock and injury, which present unique challenges for the ED trauma team (Bradburn et al., 2012). Increased age is associated with a progressive decline in physiological function, which alters the body's ability to respond to traumatic injury (Panda et al., 2009), especially in frail elderly patients with multiple health problems (Joseph et al., 2017). Older trauma patients are frequently under-triaged (Ichwan et al., 2015; Reske-Nielsen & Medzon, 2016) and co-existing diseases or medications may alter signs or symptoms of injury (Llompart-Pou, Perez-Barcena, Chico-Fernandez, Sanchez-Casado, & Raurich, 2017). These factors can cause delays to accessing expert care or initial misdiagnosis, both of which contribute to poor outcomes after traumatic injury (Hranjec, Sawyer, Young, Swenson, & Calland, 2012). Whilst integrated geriatric trauma services in Canada (Wong et al., 2017) and the U.S. (Wiles, Day, & Harris, 2016) are known to improve outcomes, this remains an aspiration for many hospitals and the responsibility for initially managing older trauma lies with the ED team.

This paper will discuss some of the age-related differences that may influence the assessment and management of elderly trauma patients in the ED. For the purposes of this paper 'elderly', 'geriatric' or 'older' describe patients aged 65 years or over, whilst acknowledging that this may differ between clinical settings.

Mechanisms of injury in elderly trauma

In comparison to younger adults, older people can sustain a significant injury from a relatively trivial or minor mechanism (Cryer, 2013). Blunt trauma dominates in this age group (Adams et al., 2012; Dinh, Roncal, Byrne, & Petchell, 2013), and a quarter of severe trauma will result from road traffic collisions (Bonne & Schuerer, 2013). However, it has become increasingly apparent that the most common mechanism of injury in older people is falling (Gillespie et al., 2012; Kozar et al., 2015; TARN, 2017).

The more active 'younger elderly' may fall outdoors (Kelsey, Procter-Gray, Hannan, & Li, 2012; Kim, 2016), but many older people fall indoors in so-called low-level or low-energy falls (Gelbard et al., 2014; TARN, 2017). Whilst low-level falls are usually uncomplicated for younger patients, they are the leading cause of traumatic brain injury (TBI) and mortality for older trauma (Carpenter et al., 2014; Llompart-Pou et al., 2017). Despite this, many trauma triage or ED trauma protocols currently do not have low-level falls as an activation criterion. Warfarin (Coumadin) use is common in the elderly and the need for emergency reversal to minimize brain (and other) hemorrhage is well documented. However, many patients in Canada are now prescribed Direct Oral Anticoagulants (DOACs) (Wood et al., 2017) and unlike Warfarin, not all DOACs—such as Rivaroxaban—have reversal agents (Barletta et al., 2017; Kobayashi et al., 2017). The risks of adverse outcomes and mortality after a fall are increased in anticoagulated elderly trauma patients (Boltz, Podany, Hollenbeak, & Armen, 2015). For the ED nurse, falls in older patients warrant a high index of suspicion for severe injury, especially in the presence of oral anticoagulants. The underlying cause of the fall also requires investigation.

Initial assessment of elderly trauma and the effects of ageing

The physiology of the ageing process means that the 'normal' physiological response to injury may differ in older patients. Comorbid diseases may further complicate this and approximately 75% of older people in Canada report having one or more chronic conditions (Canadian Institute for Health Information, 2014). Comorbid (or co-existing) diseases and the associated medications challenge 'normal' trauma assessment where beta-blockers or pacemakers may mask abnormal vital signs such as tachycardia (Bonne & Schuerer, 2013; Stevens & Torke, 2016).

Airway assessment and cervical spine immobilization

Timely airway assessment and management is a priority as for any trauma patient. However, there is an increased risk of an obstructed airway in the elderly due to foreign bodies such as dental prosthetics or lose decaying teeth (Dalton, Rushing, Escott & Monroe 2015). Further, the requirement for in-line cervical spine immobilization may be challenged by factors such as kyphosis, lordosis or degenerative disorders of the neck and no attempts to force the patient into a supine position should be made (Rao, Phan, Mobbs, Wilson & Ball 2016). Finally, there is an increased incidence of occult (or undetected) cervical spine injuries in elderly head injured patients (Kozar et al., 2015). Therefore, if TBI is suspected, the cervical spine should be included in the head CT scan.

Respiratory assessment

Ageing is associated with decreased respiratory reserve, as lung tissue becomes increasingly inelastic and alveolar function diminishes (Johnson, Botros, Groban, & Bryan, 2015). Chronic lung diseases such as emphysema or COPD increase the risk of respiratory failure in the elderly. Furthermore, the thoracic rib cage is stiffer and even 'minor' chest injury or single rib fractures could lead to significant respiratory complications (Wardhan, 2013). Age-related physiological changes to the respiratory system and co-morbid disease can result in oxygen saturation levels being low (<95% on air) in the pre-injury state. However lower Sp02 saturations in elderly trauma should be considered abnormal until injury is ruled out. Radiation exposure is not a concern in this age group and early chest x-ray (or CT scan) is essential to detect thoracic injuries.

Cardiovascular assessment

Elderly trauma is anecdotally considered to be 'head injuries and hip fractures'. Yet, a recent British study reported that major hemorrhage is a significant burden in older trauma patients (Stanworth et al., 2016). During cardiovascular trauma assessment in the ED, abnormal vital signs (such as tachycardia and hypotension) are usually indicators for trauma team activation (Heffernan et al., 2010). However initial systolic BP (SBP) and heart rate are poor at predicting serious injury amongst older adults (Newgard et al., 2014). Greater than 50% of the geriatric population suffer underlying hypertension and cardiovascular disease (Bonne & Schuerer, 2013) where a 'normal' SBP may be 150mmHg or higher. It is, therefore, difficult to assess hypotension in these patients and traditionally accepted vital signs such SBP<90mmHg may be extremely low or pre-terminal for some older people (Heffernan et al., 2010). Adults between the ages of 65 and 95 years will vary greatly as age increases, therefore there can be no 'one size fits all' for a hypotensive threshold for older people.

However, recent reports suggest that higher values of SBP <110 to 117 mm Hg are more sensitive in predicting hypotension, severe injury and mortality in older trauma (Brown et al., 2015; Newgard et al., 2014; Oyetunji et al., 2011). To assist with assessment of hemorrhage in the elderly laboratory markers of hypoperfusion such as lactate or base deficit may be helpful. An elevated venous lactate ≥ 2.5 mmol/L was better at identifying hemodynamic instability than SBP in older trauma (Salottolo, Mains, Offner, Bourg, & Bar-Or, 2013) and raised lactate (≥ 2.0 mmol/L) in elderly trauma is reported to be a risk factor for poor outcome (Vanzant et al., 2015). The American College of Surgeons suggests that a base deficit should be expedited in geriatric trauma assessment (Cryer, 2013). Base deficit values of ≥6mEq/L (Base Excess ≤-6mEq/L) are markers of severe injury and 60% mortality in older trauma patients (Calland et al., 2012; Davis & Kaups, 1998).

Neurologic assessment

Accurate neurologic assessment in elderly trauma may be challenging with pre-existing cognitive impairment such as dementia or Alzheimer's, or age-related factors such as hearing loss. The Glasgow Coma Scale (GCS) is used to determine the extent of neurologic injury in patients with TBI and to identify those who may require neurosurgical care. Yet, this assessment may have limited utility in older people (Salottolo, Levy, Slone, Mains, & Bar-Or, 2014). Studies suggest that GCS in older trauma patients may not reflect the severity of TBI and scores were found to be higher in the elderly compared to younger patients with the same severity of injury (Kehoe, Rennie, & Smith, 2015; Kehoe et al., 2016). This is possibly due to brain atrophy, which allows more space within the cranium for a hematoma to grow, or that subdural hematomas—common in the elderly—evolve more slowly reducing GCS at a later stage (Kehoe et al., 2016; Salottolo et al., 2014). Timely CT head scanning is essential to identify and classify TBI (Carney, 2016). However, older age is associated with delay to CT scan (Kirkman et al., 2013; TARN, 2017), which may be caused, in part, by failing to recognize a reduced GCS. Once again, variations in age make it difficult to give a precise cut-off value that may indicate TBI, but GCS of 14 or less has been found to be predictive of severe injury (Newgard et al., 2014) in the elderly until proven otherwise.

In summary, identification of severe injury in elderly trauma is challenging. Age-related physiological changes and co-morbid diseases complicate the trauma assessment of older people. As the elderly population increases, it is essential that ED nurses can assess this age group appropriately.

Key messages for elderly trauma assessment in the ED include:

- Irrespective of how 'young' the external appearance of the older trauma patient is, **there will be underlying changes to physiology** that may mask the 'normal' signs of injury.
- **Low-level falls can cause severe injury in the elderly** and thorough examination is mandatory.
- **Oral anticoagulants can complicate injury and worsen outcome**. Early diagnostics and advice on reversal are essential.
- **Vital signs may not fit 'normal' parameters**:
  - Low oxygen saturations should be considered trauma-related hypoxia until proven otherwise. Check the Arterial Blood Gases!
  - An SBP of <120 mmHg may be hypotension in older people
  - Lactate ≥ 2.0 mmol/L or Base Deficit ≥6mEq/L may be better markers of severe injury than SBP
  - 'Normal' GCS (14–15) in elderly head injury does not rule out TBI.

About the author

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❧

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❧

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❧

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Traumatisme majeur chez les personnes âgées : Les effets de l'âge sur l'évaluation des SU

Par Elaine Cole

La population canadienne est vieillissante. En 2016, il y avait plus de personnes âgées de 65 ans et plus que de personnes âgées de 17 ans et moins (Statistique Canada, 2016). Ce changement de population est supposé continuer et, d'ici 2036, un quart des personnes au Canada seront âgées de 65 ans et plus (Association médicale canadienne, 2016). Les améliorations dans la santé, les aides sociales et le style de vie ont permis aux gens de vivre plus longtemps. Beaucoup d'entre eux restent relativement actifs ce qui, par conséquent, entraîne une augmentation des lésions traumatiques pour ce groupe d'âge. La proportion de traumatisme chez les personnes âges arrivant aux services d'urgence (SU) augmente tous les ans (Kozar et al., 2015), et le nombre de personnes âgées avec d'importantes lésions devraient atteindre plus d'un tiers (39 %) des admissions générales en traumatologie d'ici 2050 (Banks & Lewis, 2013).

Contrairement aux soins de traumatologie pédiatrique, la gestion optimale des traumatismes chez les personnes âgées manque présentement de lignes directrices en termes de traitements axés sur l'âge et de protocoles cliniques. De nombreux patients âgées sérieusement blessés réagissent différemment face aux chocs et aux lésions, ce qui entraîne des défis uniques pour l'équipe de traumatologie des SU (Bradburn et al., 2012). Le vieillissement est souvent associé à un déclin progressif des fonctions physiologiques ce qui, à terme, modifie les capacités du corps à répondre efficacement face aux lésions traumatiques (Panda et al., 2009), surtout chez les patients âgés fragiles souffrant de plusieurs problèmes de santé (Joseph et al., 2017). Les patients âgés en traumatologie sont régulièrement mal triés (Ichwan et al., 2015; Reske-Nielsen & Medzon, 2016) et des maladies co-existantes ou des médicaments peuvent alterer les signes ou les symptômes des lésions (Llompart-Pou, Perez-Barcena, Chico-Fernandez, Sanchez-Casado, & Raurich, 2017). Ces facteurs peuvent entraîner des retards dans l'accès à des soins spécialisés ou à de mauvais diagnostics, dont tous deux contribuent à de mauvais résultats après des lésions traumatiques (Hranjec, Sawyer, Young, Swenson, & Calland, 2012). Même si l'intégration des services de traumatologie gériatrique au Canada (Wong et al., 2017) et aux É.U. (Wiles, Day, & Harris, 2016) sont connus pour améliorer les résultats, cela demeure une aspiration pour de nombreux hôpitaux et la responsabilité de la gestion des personnes âgées souffrant d'un traumatisme incombe à l'équipe des SU.

Ce document discutera de certaines différences liées à l'âge pouvant influencer l'évaluation et la gestion de patients âgés souffrant de traumatisme dans les SU. Aux fins du présent document, les mots « personnes âgées » ou « âgé » décrivent des patients âgés de 65 ans et plus, tout en reconnaissant que cela peut être différent selon les environnements cliniques.

Mécanismes des lésions chez les personnes âgées souffrant de traumatisme

Comparativement aux adultes plus jeunes, les personnes âgées peuvent subir d'importantes lésions à partir de mécanismes relativement mineurs (Cryer, 2013). Le traumatisme contondant est la cause dominante chez ce groupe d'âge (Adams et al., 2012; Dinh, Roncal, Byrne, & Petchell, 2013), et un quart des traumatismes sévères proviennent d'accidents de voiture (Bonne & Schuerer, 2013). Cependant, il est devenu de plus en plus évident que la plupart des mécanismes courants de lésions chez les personnes âgées sont en rapport avec des chutes (Gillespie et al., 2012; Kozar et al., 2015; TARN, 2017).

De nombreuses « personnes âgées plus jeunes » et actives tendent à tomber à l'extérieur (Kelsey, Procter-Gray, Hannan, & Li, 2012; Kim, 2016), mais de nombreuses personnes plus âgées tombent à l'intérieur à cause de chutes à niveau bas niveau ou à faible énergie (Gelbard et al., 2014; TARN, 2017). Même si les chutes à bas niveau sont généralement moins importantes pour les patients plus jeunes, elles sont cependant la principale cause en termes de lésions cérébrales traumatiques (LCT) et de mortalité chez les personnes plus âgées. (Carpenter et al., 2014; Llompart-Pou et al., 2017). Malgré cela, de nombreux triages ou protocoles en traumatologie dans les SU n'ont présentement pas les chutes à bas niveau comme critère d'activation. L'utilisation de Warfarine (Coumadin) est courante chez les personnes âgées et le besoin d'inversion d'urgence pour minimiser l'hémorragie cérébrale (et d'autres) est bien documenté. Cependant, les anticoagulants oraux directs (ACOD) sont prescrits à de nombreux patients (Wood et al., 2017) et contrairement au Wafarine, pas tous les ACOD – comme le Rivaroxaban – ont des agents réversifs (Barletta et al., 2017; Kobayashi et al., 2017). Les risques de résultats négatifs ou de mortalité après une chute augmentent chez les patients âgés anticoagulés et souffrant d'un traumatisme (Boltz, Podany, Hollenbeak, & Armen, 2015). Pour un(e) infirmier/infirmière des SU, les chutes chez les patients âgés indiquent la probabilité d'une lésion sévère, surtout avec la présence d'anticoagulants oraux. La cause sous-jacente d'une chute doit être également prise en compte.

Évaluation initiale du traumatisme chez les personnes âgées et les effets du vieillissement

La physiologie du processus de vieillissement signifie que la réponse physiologique « normale » en réponse à une lésion peut ne pas être la même chez des patients plus âgés. Les maladies de comorbidité peuvent compliquer les situations, et environ 75 % des personnes âgées au Canada ont signalé avoir eu une ou plusieurs conditions chroniques (Institut canadien d'information sur la santé, 2014). Les maladies de comorbidité (ou co-existantes) et les médicaments connexes compliquent l'évaluation « normale » d'un traumatisme, où les bêta-bloquants

ou les simulateurs cardiaques peuvent cacher des signes vitaux anormaux comme la tachycardie (Bonne & Schuerer, 2013; Stevens & Torke, 2016).

Évaluation des voies respiratoires et immobilisation de la colonne cervicale

Une évaluation et gestion opportunes des voies respiratoires sont essentielles pour tout patient souffrant d'un traumatisme. Cependant, en raison de corps étrangers, comme des prothèses dentaires ou perte de dents, il existe un risque accru d'une obstruction possible des voies respiratoires chez les personnes âgées (Dalton, Rushing, Escott & Monroe 2015). En outre, les exigences relatives à une immobilisation appropriée de la colonne cervicale peuvent s'avérer être difficiles en raison de nombreux facteurs, comme la cyphose, la lordose ou les maladies dégénératives du cou et aucune tentative à obliger le patient à se mettre en position couchée ne devrait être faite (Rao, Phan, Mobbs, Wilson & Ball 2016). Pour terminer, il y a une augmentation de la fréquence des lésions cachées (ou non détectées) de la colonne cervicale chez les personnes âgées blessées à la tête (Kozar et al., 2015). Par conséquent, si un traumatisme crânien est probable, la colonne cervicale devrait être incluse lors d'une tomodensitométrie crânienne.

Évaluation respiratoire

Le vieillissement est associé à une baisse de la réserve respiratoire, principalement parce que le tissu pulmonaire devient de plus en plus inélastique et les fonctions alvéolaires diminuent (Johnson, Botros, Groban, & Bryan, 2015). Les maladies pulmonaires chroniques, comme l'emphysème ou la MPOC, augmentent les risques d'insuffisance respiratoire chez les personnes âgées. En outre, comme la cage thoracique devient plus rigide, même les blessures les plus « mineures » à la poitrine, ou des fractures à une côte, peuvent entraîner d'importantes complications respiratoires (Wardhan, 2013). Les changements physiologiques du vieillissement, associés au système respiratoire et aux maladies de comorbidité, peuvent entraîner une baisse des niveaux de saturation en oxygène (<95% sur l'air) dans un état pré-lésionnel. Cependant, de faibles saturations en Sa02 chez les personnes âgées souffrant d'un traumatisme doivent être considérées comme anormales jusqu'à ce que la lésion soit écartée. L'exposition aux radiations n'est pas une préoccupation chez ce groupe d'âge et une radio du thorax (ou une tomodensitométrie) est indispensable pour détecter des lésions au thorax.

Évaluation cardiovasculaire

Un traumatisme chez les personnes âgées est considéré de façon anecdotique comme des « lésions crâniennes ou des fractures de la hanche ». Cependant, une récente étude Britannique a indiqué qu'une importante hémorragie est un lourd fardeau chez les patients plus âgé souffrant d'un traumatisme (Stanworth et al., 2016). Durant une évaluation de traumatisme cardiovasculaire dans les SU, des signes vitaux anormaux (comme la tachycardie et l'hypertension) sont généralement des indicateurs pour l'équipe de traumatologie (Heffernan et al., 2010). Cependant, la TA systolique (TAS) et le rythme cardiaque ne sont pas d'une grande utilité pour prédire de sérieuses lésions chez les personnes âgées (Newgard et al., 2014). Plus de 50 % de la population gériatrique souffrent d'hypertension et de maladies cardiovasculaires sous-jacentes (Bonne & Schuerer, 2013) où un TAS « normale » peut être de 150mmHg ou plus élevé. Il est, par conséquent, difficile d'évaluer l'hypertension chez ces patients, et des signes vitaux généralement acceptés, comme une TAS<90mmHg, peuvent être extrêmement faibles ou en phase préterminale pour certaines personnes plus âgées (Heffernan et al., 2010). Les résultats des adultes âgés entre 65 et 95 ans varieront grandement avec le vieillissement puisqu'il n'y a pas de véritable seuil unique en termes d'hypertension pour les personnes âgées.

Cependant, de récents rapports suggèrent que des valeurs plus élevées de TAS<110 to 117 mm Hg sont plus sensibles pour prédire l'hypertension, des lésions sévères et la mortalité dans un traumatisme plus ancien (Brown et al., 2015; Newgard et al., 2014; Oyetunji et al., 2011). Pour aider avec l'évaluation d'hémorragie chez les personnes âgées, les marqueurs d'hypoperfusion de laboratoire, comme le lactate ou le déficit de base, peuvent être utiles. Un lactate veineux élevé ≥ 2.5 mmol/L permet de mieux identifier l'instabilité hémodynamique que la TAS dans un traumatisme plus ancien (Salottolo, Mains, Offner, Bourg, & Bar-Or, 2013), et le lactate élevé (≥ 2.0 mmol/L) dans un traumatisme chez les personnes âgées est supposé être un facteur à risque pour de mauvais résultats (Vanzant et al., 2015). L'American College of Surgeons suggère qu'un déficit de base devrait être accéléré dans l'évaluation de traumatisme gériatrique (Cryer, 2013). Les valeurs d'un déficit de base de ≥6mEq/L (Base Excess ≤-6mEq/L) sont des marqueurs de lésions sévères et 60 % de la mortalité chez les personnes âgées souffrant d'un traumatisme (Calland et al., 2012; Davis & Kaups, 1998).

Évaluation neurologique

L'évaluation neurologique précise chez les personnes âgées victimes d'un traumatisme peut s'avérer être assez complexe avec des déficiences cognitives préexistantes, comme la démence ou Alzheimer, ou des facteurs en rapport avec l'âge comme la perte auditive. L'échelle de Glasgow est utilisée pour déterminer l'étendue des lésions neurologiques chez les patients souffrant d'un traumatisme cérébral et d'identifier ceux nécessitant des soins neurochirurgicaux. Cependant, cette évaluation peut avoir un usage limité chez les personnes âgées (Salottolo, Levy, Slone, Mains, & Bar-Or, 2014). Des études suggèrent que l'Échelle de Glasgow dans un traumatisme plus ancien peut ne pas refléter la sévérité d'un traumatisme cérébral, et les résultats se sont retrouvés être plus élevés chez les personnes âgées que chez des patients plus jeunes mais avec des lésions de même gravité (Kehoe, Rennie, & Smith, 2015; Kehoe et al., 2016). Ceci est peut-être dû à l'atrophie cérébrale, créant plus d'espace à l'intérieur du crâne pour permettre à un hématome de croître, ou le fait que les hématomes sous-duraux – courants chez les personnes âgées – évoluent plus lentement et réduisent l'Échelle de Glasgow à une étape plus tardive (Kehoe et al., 2016; Salottolo et al., 2014). Une tomodensitométrie cérébrale précoce est essentielle pour réussir à identifier et à catégoriser le traumatisme cérébral (Carney, 2016). Cependant, un âge plus avancé est souvent associé avec une tomodensitométrie plus tardive (Kirkman et al., 2013; TARN, 2017), ce qui peut entraîner, en partie, une incapacité à reconnaître une baisse de l'Échelle de Glasgow. Une fois de plus, des variations dans l'âge compliquent la possibilité de donner une

valeur précise pouvant indiquer un traumatisme cérébral, mais un score de Glasgow de 14 ou moins peut être prédicatif d'une lésion sérieuse (Newgard et al., 2014) chez les personnes âgées, jusqu'à preuve du contraire.

En résumé, l'identification d'une lésion sérieuse chez les personnes âgées victimes d'un traumatisme est difficile. Les changements physiologiques associés avec l'âge et les maladies de comorbidité compliquent l'évaluation du traumatisme des personnes âgées. Avec l'augmentation du nombre de personnes âgées, il devient essentiel pour les infirmiers/infirmières des SU d'évaluer adéquatement ce groupe d'âge.

Les messages clés pour l'évaluation de traumatisme chez les personnes âgées dans les SU sont :

- Quelle que soit l'apparence « jeune » d'un patient âgé victime d'un traumatisme, **il y aura des changements physiologiques sous-jacents** pouvant masquer les signes « normaux » de lésions.
- **Des chutes à bas niveau peuvent entraîner des lésions sérieuses chez les personnes âgées**, et un examen approfondi est obligatoire.
- **Les anticoagulants oraux peuvent compliquer les lésions et aggraver les résultats.** Des diagnostics et des conseils précoces sur un renversement sont essentiels.
- **Les signes vitaux peuvent ne pas correspondre à des paramètres « normaux » :**
  - De faibles saturations en oxygène devraient être considérées comme une hypoxie en rapport avec un traumatisme, jusqu'à preuve du contraire. Vérifiez les gaz sanguins artériels!
  - Une TAS de <120mmHg peut s'avérer être de l'hypertension chez les personnes âgées.
  - Un lactate de ≥ 2.0 mmol/L ou un déficit de base de ≥6mEq/L peuvent être de meilleurs marqueurs d'une lésion sévère qu'un TAS.
  - Un score de Glasgow « normale » (14-15) dans une lésion cérébrale d'une personne âgée n'exclut pas un traumatisme cérébral.

Au sujet de l'auteure

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Hemorrhage control, a fundamental skill: A review of direct pressure, dressings, wound packing and bandages for life-saving

By Christopher Picard, CD, BSN, RN, ENC(C)

Traumatic hemorrhage is "the leading cause of preventable death" among trauma patients (Spahn et al., 2013), causing 40% of all mortality (Curry et al., 2011). Eighty-five percent of these patients die before leaving the emergency department (Tien et al., 2007). Improved hemorrhage control has been shown to significantly improve patient outcomes (Kragh, 2009), and as a result, controlling massive exsanguination should occur even before airway control (Forrest, Lax & van der Velde, 2014). Nurses play a major role in identifying and managing life-threatening hemorrhage; the skills required to initially control hemorrhage are nursing skills. This paper will discuss foundational knowledge for basic hemorrhage control interventions, describe how to use basic manoeuvres, and how to escalate hemorrhage control interventions.

Direct pressure

The first step in hemorrhage control is the application of direct pressure. Direct pressure is one of the least-researched components of hemorrhage control (Naimer et al., 2004), recommendations are poorly articulated, and the skill is often poorly performed. Major trauma textbooks recommend direct pressure (Assid et al., 2014; Rotondo et al., 2012), but do not specify: how hard or for how long to push, what to push with, or how to remediate ineffective interventions.

The most concise recommendation on how hard to apply direct pressure comes from The American College of Surgeons' (ACS) Hartford Consensus: "use both hands… press as hard as you can" (Pons & Jacobs, 2017). This consensus statement is the opinion of a committee of experts, is not based on empirical evidence and is challenging to standardize between clinicians. Previously an arbitrary goal for hemorrhage control pressure of 60–90 mmHg had been suggested (Naimer et al., 2004). Although no rationale was provided, this article offers the only quantifiable pressure target for trauma patients.

Neither Advanced Trauma Life Support nor Trauma Nursing Core Course curricula specify an ideal or minimum time to maintain pressure (Assid et al., 2014; Rotondo et al., 2012). Empirical recommendations for how long to hold pressure are scarce: nursing literature suggests a minimum five to 10 minutes (Day, 2016), and European consensus for physicians recommends moving to more aggressive measures if hemorrhage control is not achieved in one minute (Forrest, Lax & van der Velde, 2014), but neither offer evidence or rational for the recommendations. A meta-analysis of angiography hemostat devices may offer the best evidence for minimum pressure time, concluding that hemostatic devices have the best time to hemostasis, but range widely, with an average around 20 minutes (Dahal et al., 2017). This data is not trauma specific, but could be used as a guide for trauma patients. However, it is worthwhile to note angiography patients are less likely to have trauma-induced coagulopathies, and will have a smaller single arterial puncture at a known location.

Dressings

Direct pressure is usually applied using a dressing. Dressings can be manufactured, or improvised, but ideally, they will be: sterile, absorbent, non-stick, and lint-free. Although there are many different dressings on the market for hemorrhage control, hemostatic or non-hemostatic dressings are usually used. Hemostatic dressings contain pro-coagulants to speed clotting time, work in a variety of ways, are backed by reasonable evidence, but are not widely available. Ideally, the use of hemostatic dressings will increase, but as they're not yet in widespread use, this article will focus on the use of non-hemostatic dressings.

Unlike many other specialty dressings, literature comparing hemostasis, infection rates, or ease of use between different traditional dressings is lacking. It could be assumed then that all traditional dressings are equivalent. Dressings for hemorrhage control should allow for the application and maintenance of direct pressure to the wound, be absorbent and offer protection from contamination. Dressings should not be layered (Forrest, Lax, & van der Velde, 2014). Layering diffuses pressure and may hasten bleeding rates by increasing the capillary action of the dressing (Holley & Filips, 2014). The goal is hemorrhage control not spill containment. Dressings are an important part of direct pressure application, provided they are applied with sufficient force. Dressing saturation should trigger hemorrhage control evaluation, not layering. If the first dressing becomes saturated, hemorrhage control measures should be assessed to ensure pressure is being directly applied to the wound, and to assess if measures need to be escalated with wound packing or by using a tourniquet.

Wound packing

If direct pressure fails, management should be escalated. Wound packing is the next intervention to consider. Packing increases direct pressure on injured vessels in the wound. The ACS recommends packing as the second step for any smaller bleed not controlled with direct pressure and as the first step for large open

wounds, or injuries at the junction of trunk and limb (Pons & Jacobs, 2017). Direct evidence for external wound packing is scarce, but there is excellent evidence for packing in damage control surgery (Spahn et al., 2013). The process of packing a traumatic wound is similar to placing surgical, chronic wound or abscess packing, except that the wound is packed tightly. To pack a wound, clean cloth, gauze or hemostatic dressing is pressed as deeply and firmly into the wound as possible. Packing should be added while maintaining direct pressure until the wound is completely filled (Pons & Jacobs, 2017). Once packed, the wound should be covered with a dressing and the highest possible level of direct pressure maintained bimanually or through tight bandaging.

Bandages

Dedicating personnel to maintain sufficient pressure for sufficient time is difficult. Often, bandaging is used instead to maintain pressure. Experimental data suggests that bandaging with an elastic bandage maintains a higher average direct pressure on the wound bed (88 mmHg) than inelastic dressings (33 mmHg) (Naimer et al, 2004). Specialty dressings with integrated elasticized bandage and "pressure bar" to focus pressure exist. Experimental data show integrated bars can result in a further three-fold increase in direct pressure (Shipman & Lessard, 2009). Case reports suggest that improvised "pressure bars" may be beneficial (Rudge, Rudge & Rudge, 2010), and these dressings have been widely used by Western militaries with good effect, but experimental data to demonstrate their superiority to other dressings are lacking. Research shows elasticized bandages can be safely used without producing a tourniquet effect on limbs. When compared against direct pressure and cloth bandage, elasticized bandages maintained a higher and more consistent pressure and stayed in place better, without having a tourniquet effect on limbs (Naimer et al, 2004; Shipman & Lessard, 2009). Replicating these bandages can easily be done with normal ward stock by firmly pressing gauze to the wound, and wrapping a tensor bandage as tightly as possible over the smallest area possible with increasing tension. Bandages should be checked periodically to ensure the patient is not bleeding through the dressings, that the bandage remains secure, and to assess for distal circulation.

Tourniquets

Although tourniquets have been successfully used for hundreds of years, until very recently they have been considered a measure of last resort due to their perceived risk for limb damage (Kragh 2009). There is excellent evidence for the effectiveness of tourniquet in hemorrhage control. If a wound is not responding to direct pressure or packing, tourniquets should be considered. Extremity hemorrhage is the primary source of preventable death in the armed forces. Their experience managing these injuries has shown tourniquets to be safe and effective, with very low complication rates (Kragh et al., 2009). For non-military extremity hemorrhage, tourniquet use has also been shown to be safe and effective (Scerbo et al., 2016).

Tourniquets are circumferential bands that are placed on long bones (never over a joint), just proximal to extremity wounds, and tightened until arterial blood flow (and therefore bleeding) is stopped. Tourniquets can be improvised or commercially manufactured, but commercial tourniquets have been shown to be superior to improvised devices (Bulger et al., 2014). Improvised, or incorrectly used tourniquets have been shown to worsen bleeding if the pressure used is insufficient to occlude arterial flow (Day, 2016). Venous-only tourniquets, like a tourniquet to start an IV or blood draw, will result in increased venous pressure and dilation and will hasten bleeding. For this reason, use a commercial tourniquet, if available, tighten the tourniquet until active bleeding stops and pulses are no longer palpable, mark the time of application, and leave the tourniquet in place until definitive management of the bleeding can be achieved (Day, 2016). If hemorrhage control is not achieved with one tourniquet, an additional tourniquet should be placed in the same manner, proximally.

Conclusion

Massive external hemorrhage can be deadly within minutes, and needs to be addressed immediately. Nurses are often the first point of contact for patients, as they enter hospital, and will often be required to make the initial decisions on how to control deadly bleeding until definitive management. This article reviewed the evidence for direct pressure, wound packing, bandaging and tourniquet use, discussed foundational knowledge for escalating hemorrhage control interventions, and made specific recommendations for how best to manage traumatic hemorrhage.

About the author

Christopher Picard, CD, BSN, RN, ENC(C), has worked in tertiary, rural, and remote areas as an emergency nurse and in pre-hospital, clinical and austere roles domestically and abroad as a medic with the Canadian Forces. He currently works as an emergency nurse at the Royal Alexandra Hospital in Edmonton, AB. His research interests are trauma care, evidence-based practice and knowledge translation.

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Contrôle de l'hémorragie, une compétence fondamentale : Un examen de la pression directe, des pansements, de l'insertion de pansement dans une blessure et des bandages pour sauver des vies

Par Christopher Picard, CD, BSN, RN, ENC(C)

L'hémorragie traumatique est « la principale cause des décès évitables » parmi les patients victimes d'un traumatisme (Spahn et al., 2013), causant 40 % de toutes les mortalités (Curry et al., 2011). Quatre-vingt-cinq pour cent de ces partients meurent avant de quitter les services d'urgence (Tien et al., 2007). Un contrôle amélioré de l'hémorragie permet d'améliorer de façon significative les résultats du patient (Kragh, 2009) et, par conséquent, le contrôle d'une exsanguination massive doit se produire avant le contrôle des voies respiratoires (Forest, Lax & van der Velde, 2014). Les infirmiers/infirmières jouent un rôle très important dans l'identification et la gestion d'une hémorragie pouvant mettre une vie en danger; les compétences nécessaires pour un contrôle précoce de l'hémorragie sont des compétences infirmières. Ce document discutera des connaissances fondamentales associées aux interventions de base du contrôle de l'hémorragie. Il explique également comment utiliser des manœuvres de base et comment accentuer les interventions de contrôle de l'hémorragie.

Pression directe

La première étape dans le contrôle de l'hémorragie est l'application d'une pression directe. La pression directe est l'un des composants les moins recherchés du contrôle de l'hémorragie (Naimer et al., 2004). Les recommandations ne sont pas claires et son utilisation est souvent mal exécutée. Les principaux manuels sur les traumatismes recommandent la pression directe (Assid et al., 2014; Rotondo et al., 2012) mais ne vont pas plus loin. Ils n'expliquent pas la pression appropriée qu'il faut appliquer ni la durée, avec quoi il faut appuyer et comment remédier à des interventions inefficaces.

La recommandation la plus concrète sur la pression appropriée qu'il faut appliquer provient du Consensus Hartford du American College of Surgeons (ACS) : « Utilisez les deux mains...appuyez le plus fort possible » (Pons & Jacobs, 2017). Cette déclaration de consensus est l'opinion d'un comité d'experts, mais n'est pas basée sur une preuve empirique et est difficile à normaliser entre les cliniciens. Avant cela, un objectif arbitraire de 60-90 mmHg pour le contrôle de l'hémorragie par pression directe avait été suggéré (Naimer et al., 2004). Même si aucune réelle justification n'a été fournie, cet article offre la seule pression quantifiable pour aider les patients victimes d'un traumatisme.

Les curriculums de soins avancés de réanimation traumatologique et les cours obligatoires en soins infirmiers de traumatologie ne mentionnent aucune durée minimale pour le maintien de la pression (Assid et al., 2014; Rotondo et al., 2012). Les recommandations empiriques sur la durée du maintien de la pression sont assez vagues. Les documents en soins infirmiers suggèrent un minimum de cinq à dix minutes (Day, 2016), et le consensus européen des médecins recommande de passer à des mesures plus agressives si le contrôle de l'hémorragie n'est pas réussi en une minute (Forrest, Lax & van der Velde, 2014). Cependant, aucun n'offre de preuves ou de raison claire à ces recommandations. Une méta-analyse des dispositifs hémostatiques d'angiographie peut offrir une meilleure preuve de la durée minimale d'une pression, en concluant que les dispositifs hémostatiques ont un meilleur temps à l'hémostase avec une moyenne d'environ 20 minutes; mais la portée varie considérablement (Dahal et al., 2017). Même si ces données ne sont pas spécifiques au traumatisme, elles peuvent être utilisées comme guide pour les patients victimes d'un traumatisme. Cependant, il est important de noter que les patients d'angiographie sont moins susceptibles à avoir des coagulopathies induites par des traumatismes, et auront une ponction artérielle unique et plus petite à un endroit connu.

Pansements

Une pression directe est généralement appliquée en utilisant un pansement. Les pansements peuvent être fabriqués, ou improvisés, mais seront idéalement stériles, absorbants, non-adhésifs et non pelucheux. Même s'il existe différentes sortes de pansements pour contrôler une hémorragie, des pansements hémostatiques ou non-hémostatiques sont généralement utilisés. Les pansements hémostatiques contiennent des pro-coagulants pour faire accélérer le temps de coagulation. Ils fonctionnent de différentes façons, sont soutenus par des preuves raisonnables mais ne sont pas largement disponibles. Idéalement, l'utilisation de pansement hémostatiques augmentera mais ne sont pas

encore largement utilisés. Par conséquent, cet article se concentrera sur l'utilisation de pansement non-hémostatiques.

Contrairement à plusieurs autres pansements spécialisés, la documentation comparant l'hémostase, les taux d'infection ou la facilité d'utilisation et les différents pansements traditionnels est insuffisantes. Il pourrait être possible d'assumer que tous les pansements traditionnels sont similaires. Les pansements de contrôle de l'hémorragie devraient permettre l'application et l'entretien de la pression directe sur la blessure, l'absorption et offrir une protection contre toute contamination. Les pansements ne doivent pas être appliqués en plusieurs couches (Forrest, Lax, van der Velde, 2014). L'application de pansements en plusieurs couches fait disperser la pression et peut faire accélérer les taux de saignement en augmentant l'action capillaire du pansement (Holley & Filips, 2014). Les pansements sont une étape importante de l'application d'une pression directe, à condition qu'ils soient appliqués avec suffisamment de force. La saturation de pansements devrait déclencher une évaluation du contrôle de l'hémorragie, et non une application de plusieurs couches. Si le premier pansement devient saturé, d'autres mesures de contrôle de l'hémorragie doivent être mises en place pour s'assurer qu'une pression directe soit appliquée sur la blessure et pour vérifier si d'autres mesures doivent être utilisées, comme l'insertion d'un pansement dans la blessure ou l'application d'un garrot.

Insertion de pansement dans une blessure

Si la pression directe échoue, l'insertion d'un pansement dans une blessure serait la prochaine intervention à utiliser. Cette insertion de pansement augmente la pression directe sur les parties importantes de la blessure. L'ACS recommande l'insertion d'un pansement comme deuxième étape pour tout petit saignement non contrôlé à l'aide d'une pression directe, et comme première étape pour des blessures plus ouvertes ou proches du tronc et des membres (Pons & Jacobs, 2017). Les preuves directes associées à l'insertion d'un pansement dans une blessure sont rares mais il y a d'excellentes preuves de cette méthode lors de chirurgies de sauvetage (Spahn et al., 2013). Cette méthode d'insertion du pansement pour des blessures associées à un traumatisme est assez similaire à celle utilisée sur des blessures chroniques, chirurgicales ou abcès, à l'exception de blessures bien serrées. Pour appliquer cette méthode, le tissu propre, la gaze ou le pansement hémostatique doit être inséré le plus profondément et fermement possible dans la blessure. Cette insertion doit être faite tout en maintenant une pression directe jusqu'à ce que la blessure soit entièrement remplie (Pons & Jacob, 2017). Une fois le pansement inséré, la blessure doit être couverte avec un autre pansement, et une pression directe très importante doit être maintenue semestriellement ou par le biais d'un bandage serré.

Bandages

Il est parfois difficile au personnel dédié de maintenir une pression suffisamment forte pendant une durée appropriée. C'est pour cette raison que le bandage est souvent utilisé pour maintenir cette pression. Des données expérimentales suggèrent qu'un bandage élastique permet de maintenir une pression directe suffisamment importante sur le lit de la plaie plutôt que des pansements inélastiques (3 3 mmHg) (Naimer et al, 2004). Des pansements spécialisés avec un bandage élasticisé intégré et une « barre de pression » pour exercer une pression sont disponibles. Des données expérimentales montrent que les barres intégrées peuvent entraîner une augmentation significative de la pression directe (Shipman & Lessard, 2009). Des rapports de cas suggèrent que des « barres de pression » improvisées peuvent être bénéfiques (Rudge, Rudge & Rudge, 2010), et ces pansements ont été largement utilisés par les militaires occidentaux avec de bons résultats. Cependant, il y a très peu de données expérimentales démontrant leur supériorité face aux autres sortes de pansements. Les recherches indiquent que les bandages élasticisés peuvent être utilisés en toute sécurité sans appliquer un garrot sur les membres. Lorsque l'on compare cela à une pression directe et un bandage en tissu, les bandages élasticisés maintiennent une pression plus élevée et constante, et restent mieux en place sans appliquer un garrot sur les membres (Naimer et al, 2004; Shipman & Lessard, 2009). Reproduire ces bandages peut être facilement fait avec une réserve normale en appuyant fermement la gaze à la blessure, en appliquant un bandage élastique autour aussi fermement que possible au-dessus d'une toute petite zone avec une tension croissante. Les bandages doivent être vérifiés régulièrement pour s'assurer qu'il n'y a aucun saignement chez les patients à travers les pansements, que le bandage reste bien serré et pour contrôler la circulation en aval.

Garrots

Même si les garrots ont été utilisés avec succès durant des siècles, ce n'est que récemment qu'ils sont considérés comme une mesure de dernier recours en raison du risque perçu pour un membre endommagé. (Kragh 2009). D'excellentes preuves ont démontré l'efficacité du garrot dans le contrôle de l'hémorragie. Si une blessure ne répond pas à une pression directe ou à l'insertion d'un pansement, les garrots doivent être vus comme la prochaine étape. L'hémorragie d'extrémité est la principale source de décès évitable dans les forces armées. Leur expérience dans la gestion de ces types de blessures a démontré que les garrots étaient sûrs et efficaces, avec très peu de risques de complications (Kragh et al., 2009). Pour les hémorragies d'extrémité non-militaires, l'utilisation du garrot est également vue comme quelque chose de sûr et d'efficace (Scerbo et al., 2016).

Les garrots sont des bandes circonférentielles placées sur des os longs (jamais au-dessus d'une articulation) à proximité de blessures d'extrémité pour être serrées jusqu'à ce que le flux sanguin artériel (et donc le saignement) s'arrête. Les garrots peuvent être improvisés ou fabriqués commercialement. Cependant, les garrots commerciaux sont considérés comme étant de meilleure qualité que les dispositifs improvisés (Bulger et al., 2014). Improvisés ou mal utilisés, les garrots peuvent aggraver le saignement si la pression est insuffisante pour bloquer le flux artériel (Day, 2016). Les garrots uniquement veineux, comme un garrot pour commencer une IV ou prise de sang, entraîneront une augmentation de la pression veineuse, une dilatation et une accélération du saignement. Pour cette raison, utilisez un garrot commercial, si possible, serrez-le jusqu'à ce que le saignement

s'arrête et les pulsations ne soient plus présentes, marquez le moment de son application et laissez le garrot en place jusqu'à ce que le contrôle du saignement soit atteint (Day, 2016). Si le contrôle de l'hémorragie n'est pas atteint avec un garrot, un garrot supplémentaire doit être placé à proximité et de la même façon.

Conclusion

Une hémorragie externe massive peut être mortelle en seulement quelques minutes et doit être gérée immédiatement. Les infirmiers/infirmières sont souvent les premiers en contact avec les patients entrant à l'hôpital et doivent souvent prendre des décisions rapides pour réussir à contrôler le saignement, et cela jusqu'à la mise en place d'une gestion définitive. Cet article a examiné les preuves d'une pression directe, de l'insertion d'un pansement dans une blessure, du bandage et de l'utilisation de garrots. Nous avons également discuté des connaissances fondamentales dans l'accélération des interventions de contrôle de l'hémorragie, et avons proposé des recommandations spécifiques sur la manière de mieux gérer l'hémorragie d'un traumatisme.

Au sujet de l'auteur

Christopher Picard, CD, BSN, RN, ENC(C), a travaillé dans des régions tertiaires, rurales et éloignées en tant qu'infirmier d'urgence. Il a également travaillé en tant que médecin pour les forces canadiennes dans des rôles pré-hospitaliers, cliniques et austères au Canada et à l'étranger. Il travaille présentement en tant qu'infirmier d'urgence à l'hôpital Royal Alexandra d'Edmonton (AB). Ces sujets de recherche sont les soins en traumatologie, les pratiques axées sur les preuves et l'application des connaissances.

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Examining the use of geriatric assessment teams and comprehensive geriatric assessment in emergency departments

By Mathieu Figeys, BScN, RN, Naweed Ahmed, MD, and Jennifer Evans, BScN, RN

Introduction

With the rapidly growing population of adults over the age of sixty-five, emergency departments are seeing a markedly increased number of geriatric patients seeking acute care. Although many geriatric patients are admitted to inpatient wards, often times they are discharged back into their community setting. It is important to note that emergency department staff are often not geriatric specialists. Further, the current emergency care model of rapid 'door-to-disposition' often overlooks the complexity of geriatric patients, who have a higher prevalence of comorbidities.

To address this gap in healthcare, and to better meet the needs of geriatric patients presenting to the emergency department, geriatric assessment teams are becoming increasingly prevalent in acute care practice. The objectives of this paper are three-fold, and will be addressed from a social epidemiological standpoint; firstly, to explore trends in geriatric presentations to the emergency department, secondly, to discuss healthcare disparities in acute care services for geriatric patients, and lastly, to discuss the impact of geriatric assessment teams on the patient and healthcare system. Furthermore, stemming from the discussion, potential policy implications within the acute healthcare system will be highlighted.

Background

Globally, the population of the aged adult over the age of sixty-five will grow by one-billion people by the year 2050 (Asomaning & Loftus, 2014). Currently, patients over the age of sixty-five make up 11% of the total population of patients presenting to Canadian emergency departments (Baumbusch & Shaw, 2011). With the increasing aging population, a rise of geriatric patients presenting to emergency departments will follow. Geriatric patients are also significantly more likely to be admitted to formal inpatient services, and have a higher rate of adverse health outcomes post-discharge from an emergency department (Keyes, Singal, Kropf, & Fisk, 2014). Furthermore, geriatric patients in emergency departments are more likely to have diagnostic imaging and longer lengths of stay (LaMantia et al., 2010), and are more likely to require costlier care compared to their younger counterparts (Hwang & Morrison, 2007). Considering these factors, it is important to realize that the Canadian healthcare system was designed to treat acute illness instead of chronic illness, and designed for a younger population (Macintosh, Rajakulendran, Khayat, & Wise, 2016). Although gaps in healthcare are being addressed through the current healthcare transformation, geriatric patients remain at a disadvantage.

Methods

A review of published literature was performed using the Ovid Medline and CINAHL databases (refer to Appendix A for the search criteria). Search results were compiled into Mendeley [Mendeley Ltd, London, United Kingdom], and duplicate results were removed. A minimum age restriction was placed, at 65 years old, to capture the complexity of health for all aged adults and to exclude younger adults. Articles in English were reviewed, without restriction on country of publication. Articles published before 2010 were excluded and no restriction on patient sex was employed. Furthermore, additional supporting literature was found using Google scholar, without publication date limitations. Instead of conducting a meta-synthesis or meta-analysis, this paper is focused on promoting awareness of geriatric presentations in emergency departments, highlighting the role of geriatric assessment teams, and discussing policy implications in the Canadian acute care system.

Geriatric considerations in emergency care

Geriatric patients often have complex biological and psychosocial health presentations that amalgamate in age from the individual's life course, such as biological, environmental, and social barriers (Sadana, Blas, Budhwani, Koller, & Paraje, 2016). Due to this, atypical presentations are more prevalent in geriatric patients. For example, atypical presentations of acute coronary syndromes in geriatric patients are more prevalent compared to their younger counterparts (Salvi, Morichi, Grilli, Giorgi, De Tommaso, & Dessì-Fulgheri, 2007).

Frailty can be defined as "…the inability to withstand illness without loss of function or a loss of functional homeostasis. It is a complex interplay of multi-morbidity and aging physiology" (Ellis, Marshall, & Ritchie, 2014, pp. 2034). Those with frailty are predisposed to falls, delirium, elimination issues, caregiver burnout, and immobility (Ellis et al., 2014). The complexity of frailty is often minimally assessed by emergency

practitioners due to time constraints, nonspecific syndrome presentations, and by being vague during history assessment (Ellis et al., 2014).

As Salvi et al. suggest, comorbidity in older adults only complicates differential diagnoses and disposition (2007). Furthermore, delirium is commonly seen in geriatric patients in the emergency department, however it is widely under-diagnosed (Salvi et al., 2007). Progressive cognitive impairment (such as dementia), is seen in 15–40% of aged adults presenting to the emergency room, however, like delirium, it is under-recognized resulting in gaps in care (Salvi et al., 2007). To add to the complexity of care, geriatric patients are more frequently predisposed to polypharmacy, and adverse drug reactions due to age related pharmacokinetics and pharmacodynamics, which is rarely assessed by emergency practitioners (Salvi et al., 2007; Samaras, Chevalley, Samaras, & Gold, 2010). Although functional decline is well documented as a predictor of early mortality, the majority of emergency practitioners fail to assess functional status despite the fact that only 22% of elderly patients presenting to the emergency department are independent with their activities of daily living (Salvi et al., 2007; Extermann et al., 2005).

Moving beyond geriatric health factors, emergency departments are also failing to address geriatric care in regards to the environment where the care is being provided. Hwang & Morrison (2007) suggest that the current design of emergency departments is intended for efficiency; they lack privacy, comfort, promote fall hazards, have poor lighting, and are loud. Hence it is also important to address how care space influences geriatric patients. To promote geriatric care in the emergency department, increased resources need to be made available for assessment, interventions, and to promote an elder friendly environment.

Geriatric assessment in the emergency department

There is an evident need for geriatric specialists within the emergency department. Some emergency departments are dedicating geriatric-specific beds to allow geriatric teams to assess patients. Further, some regions are now exploring the creation of geriatric emergency departments specifically designed for older adults (Ellis et al., 2014). Recent literature demonstrates that geriatric friendly emergency departments reduce admission rate, though length of stay and return visits remained unchanged (Keyes et al., 2014).

One strategy that shows promising results is the creation of interdisciplinary geriatric assessment teams who are involved in the care of elderly adults, and the rise of the comprehensive geriatric assessment (CGA). The utilization of CGA has been demonstrated to reduce early mortality, and increase self-functioning (Leclerc et al., 2013). The CGA is an assessment tool developed for a multidisciplinary approach that addresses: cognitive evaluation, mood evaluation, comorbidity evaluation, polypharmacy review, falls assessment, functional status, social supports, and nutrition (Graf, Zekry, Giannelli, Michel, & Chevalley, 2011).

Leclerc et al., 2013, discuss the role of inpatient geriatric assessment in Quebec, where assessment teams are composed of medical physicians, nurses, physical therapists, occupational therapists, social workers, dietitians, and pharmacists. Geriatric assessment requires multiple assessment points, hence an adequate length of stay (approximately three weeks); efficient care management, and correct admission location are key characteristics of a detailed geriatric assessment (Leclerc et al., 2013). Furthermore, the CGA is a timely process, which often times emergency caregivers do not have adequate time to perform (Graf et al., 2011). Thus, the question arises: how can the complexity of geriatric assessment be performed within the short stay in the acute healthcare setting?

Graf et al., (2011), propose a model where the CGA is not assessed in every geriatric patient. Some geriatric patients live independently with a high level of functional and cognitive status. Their study found that other validated geriatric screening tools, which can be performed quickly by emergency physicians, include the Identification of Seniors at Risk (ISAR), and the Triage Risk Screening Tool (TRST). These abbreviated tests are conducted to identify high-risk patients, whom the CGA should be performed on (Graf et al., 2011).

Geriatric assessments teams are becoming increasingly prevalent in emergency departments to attempt to address the gaps between the healthcare system and elderly patients. Drawing from a UK study by Conroy et al., (2014), the introduction of comprehensive geriatric assessment in the emergency department with dedicated geriatric beds reduced inpatient admissions, and decreased re-presentation to the emergency department. It is also suggested that CGA use increased the efficiency of care for younger adults, as the emergency practitioners had more allocated time as the geriatric team cares for medically complex aged adults (Conroy et al., 2014). Caplan, Williams, Daly, & Abraham (2004) found that outpatient CGA referral conducted by a hospital-based interdisciplinary outreach team resulted in a lower hospital admission rate thirty-day post emergency department visit, and resulted in a ten percent reduction of emergency visits at 18 months. Hence, the researchers promote an outpatient CGA referral to adults over the age of 75 after an emergency department visit (Caplan et al., 2004).

Lastly, geriatric emergency nurses (GENs) are also becoming prevalent in practice. Baumbusch and Shaw (2011) examined the role of the geriatric emergency role in a hospital in Vancouver. The researchers found that GENs often act as case managers within the emergency department, specialize in geriatric assessment and geriatric care planning, and creating outpatient dispositions, follow-ups, and community referrals (Baumbusch & Shaw, 2011). Flynn and Ryan, 2012, identify five categories of GEN interventions: geriatric emergency management, targeted assessment, screening and referring, consultation and creating recommendations, and following-up with patients. Their specialist knowledge in geriatric training and emergency medicine provide the continuity of care often needed in complex geriatric patients.

Current interventions and future directions

Sunnybrook Hospital first implemented a GEN in 2002 with positive feedback, resulting in the creation of further positions. Between April 2005–2006, almost 3,000 seniors were seen by eight GENs, of which nearly half were identified as being at

risk (Flynn & Ryan, 2012). Furthermore, it reduced the average length of stay to ten hospital days (from 17.5 days), and reduced post-ED hospital admission rate by four percent (Flynn & Ryan, 2012). As of 2012 statistics, 102 GENs staff 53 emergency departments in Ontario. In addition, Ontario has emergency-based mobile nurses to provide emergency nursing care in the home-setting, instead of transporting the patient to an emergency department. Between 2011–2012, nine emergency mobile nurses existed, which saw over 10,000 patient encounters, which significantly reduced the number of transports to emergency departments (Flynn & Ryan, 2012). Similarly, in other provinces (such as Alberta) community paramedics are also beginning to provide at-home services instead of transporting patients to an emergency facility.

There is an increasing recognition from emergency staff regarding knowledge gaps that are necessary to fill to prepare for the rapidly aging senior population. Flynn and Ryan (2012) report that one percent of emergency practitioners have geriatric expertise, and that there is a lack of clinical schooling in geriatrics. There is an obvious need to educate frontline emergency staff regarding geriatric health and aging. Furthermore, there is a significant potential for cost-saving measures by implementing specialist geriatric assessment teams in emergency departments as previously discussed. Using 2013-2014 Alberta figure estimates from the Institute of Health Economics, the operational cost for an ambulance transport is $760.48 per event, the average cost per day in a medical ward is nearly $1,000, and the average cost per day in a critical care bed is $4,114.00 (Institute of Health Economics, n.d.). Extrapolating these results to other provinces, the utilization of geriatric assessment teams and community-based interventions could save each provincial/territorial healthcare system millions of dollars annually.

Additional research needs to be conducted in regards to geriatric emergency medicine, such as screening instruments and tools, the role of emergency nursing in geriatric patients, the creation of geriatric emergency departments, frailty in the emergency context and geriatric assessment teams. The rise of telemedicine and geriatric emergency medicine should further be explored, especially in rural settings. Adequate resources for these teams are required, as patient caseloads will only increase as the population ages. Community resources need to increase awareness, and be made available and accessible to geriatric assessment teams, patients, and their caregivers. Organization of care needs to be re-addressed to remove barriers for our senior adults. The creation of dedicated geriatric assessment beds in Canadian emergency departments is a future area of exploration to prepare for the rapid influx of aged adults seeking emergency care. The creation or renovation of emergency departments should also reflect a safe environment for geriatric patients.

Conclusion

Geriatric patients often present to emergency departments with complex factors influencing their individual health. The current outdated design of emergency healthcare place geriatric patients at a disadvantage, and can be a potential barrier to healthcare. The population is aging, and efforts need to be invested to meet care demands for aged adults, and prepare for the future increase in geriatric care in emergency settings. Trends in geriatric populations have been discussed, such as frailty, multimorbidity, polypharmacy, and functional decline. Healthcare gaps have been briefly identified, and potential solutions, such as geriatric assessment teams in emergency care settings, have been discussed as a method to fill in the existing gap between geriatric and emergency medicine. We must continue to reform the healthcare system for geriatric clients, adapt as new technologies and methodologies arise, and prepare for our future.

Beeping, chatter, clanging, banging and yelling are only a few distinct sounds piercing one's ear in the ER. For a senior, it can be quite different than the comforts of home-noting the whistle of tea kettle brewing and the TV channel set to their routine show. Working in both the community for several years with many seniors directly in their homes as a case manager (CM), and now working in the ER as a transition coordinator (TC) since 2014, the environments can be most of the time polar opposite. As a coordinator, I help bridge the gap between hospital and home as a home care liaison, advocate, and voice for continuing care clients, mostly seniors over the age of 65. In Edmonton, there have been positions created trying to ease the pain, by providing continuity of care, being able to see both patient in the ER and then at home. They are system case managers (SCM) and I have the privilege of working closely with them to help complex continuing care patients transition from hospital to home. If they are medically stable and able to return home safely, it is cheaper to keep someone at home than to be admitted into an acute care bed or be waiting to be admitted from an ER bed. By having multiple health care professionals involved in care planning, with geriatric knowledge, it allows set up for quicker transitions home, smoother communication, appropriate service utilization, and keeps patients out of the hospital who don't need to be, and risks related to hospitalization are avoided. The continuity of care is of utmost importance and for a senior to see a familiar face really helps with rapport and care. I have had the privilege of also being able to access a geriatric NP and geriatrician to complete assessments in the ER, and have further follow up in the community if needed from the same geriatric professionals. As a TC, being able to triage and assess seniors' care needs, while referring to community supports to keep patients out of hospital, relates closely to that of a geriatric ER nurse (GEN), and according to Sunnybrook Hospital in Toronto: there is research suggesting that the use of GENs decreased admission and re-presentations to the emergency room (Flynn & Ryan, 2012). I would hope in the future these approaches are utilized throughout ERs across the country if they haven't started already, to assist with the flow of the hustle and bustle of the emergency department.

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Appendix A: Literature search

Table 1: Medline Literature Search

Ovid®

Wolters Kluwer

My Account | Ask a Queen's Librarian | Support & Training | Help | Logoff

Search | Journals | Books | Multimedia | My Workspace | EBP Tools | Mobile

Search History (12) — View Saved

#	Searches	Results	Type	Actions	Annotations
1	exp Geriatric Assessment/	23062	Advanced	Display Results | More	
2	geriatric assessment team.mp.	27	Advanced	Display Results | More	
3	care coordinator.mp.	279	Advanced	Display Results | More	
4	transition coordinator.mp.	20	Advanced	Display Results | More	
5	exp Emergency Service, Hospital/	63771	Advanced	Display Results | More	
6	emergency room.mp.	15002	Advanced	Display Results | More	
7	emergency department.mp.	62969	Advanced	Display Results | More	
8	1 or 2 or 3 or 4	23369	Advanced	Display Results | More	
9	exp Emergency Medicine/	11929	Advanced	Display Results | More	
10	5 or 6 or 7 or 9	118947	Advanced	Display Results | More	
11	8 and 10	672	Advanced	Display Results | More	
12	limit 11 to (english language and yr="2010" and "all aged (65 and over)" and journal article)	20	Advanced	Display Results | More	

Contract

Table 2: CINAHL Literature Search

Search ID#	Search Terms	Search Options	Actions
S7	S1 AND S2	**Limiters** - Linked Full Text **Expanders** - Apply related words **Narrow by SubjectGeographic:** - usa **Narrow by SubjectAge:** - aged: 65+ years **Narrow by Language:** - english **Search modes** - Boolean/Phrase	View Results (25) | View Details | Edit
S6	S1 AND S2	**Limiters** - Linked Full Text **Expanders** - Apply related words **Narrow by SubjectAge:** - aged: 65+ years **Narrow by Language:** - english **Search modes** - Boolean/Phrase	View Results (37) | View Details | Edit
S5	S1 AND S2	**Limiters** - Linked Full Text **Expanders** - Apply related words **Narrow by Language:** - english **Search modes** - Boolean/Phrase	View Results (43) | View Details | Edit
S4	S1 AND S2	**Limiters** - Linked Full Text **Expanders** - Apply related words **Search modes** - Boolean/Phrase	View Results (43) | View Details | Edit
S3	S1 AND S2	**Expanders** - Apply related words **Search modes** - Boolean/Phrase	View Results (228) | View Details | Edit
S2	(MH "Emergency Service") OR "emergency department" OR "emergency room" OR (MH "Emergency Medicine")	**Expanders** - Apply related words **Search modes** - Boolean/Phrase	View Results (48,146) | View Details | Edit
S1	(MH "Geriatric Assessment") OR "geriatric assessment team" OR (MH "Nursing Care Coordination (Saba CCC)") OR "care coordinator" OR "transition coordinator"	**Expanders** - Apply related words **Search modes** - Boolean/Phrase	View Results (7,213) | View Details | Edit

RADAR: A rapid detection tool for signs of delirium (6th vital sign) in emergency departments

By Philippe Voyer, Marcel Émond, Valérie Boucher, Pierre-Hugues Carmichael, Lucille Juneau, Hélène Richard, Thien Tuong Minh Vu, Jacques Lee, and Gino Bouchard

Introduction

Delirium is a neuropsychiatric syndrome whose core features are acute onset and fluctuating course, plus disturbances in cognition, consciousness and attention (American Psychiatric Association [APA], 2013). It is common among hospitalized older adults and is a sign of serious underlying health problems, such as infections, acute cardiovascular problems, or metabolic disorders. Its prevalence rate in older emergency department (ED) patients ranges between 10% and 14% (Elie, Rousseau, Cole, Primeau, McCusker, & Bellavance, 2000; Han, Wilson, Vasilevskis, et al., 2013; Singler, Thiem, Christ et al., 2014; Hustey, Meldon, Smith & Lex, 2003; Grossmann, Hasemann, Graber, Bingisser, Kressig, & Nickel, 2014), hence the importance of mental health assessment in emergency departments (Terrell, Hustey, Hwang et al., 2009).

Early detection of delirium is critical for prompt management of its underlying causes and rapid implementation of targeted interventions aiming to reduce its severity, duration and consequences (Inouye, 2006; Andrew, Freter, & Rockwood, 2005; Lemiengre et al., 2006; Milisen, Lemiengre, Braes, & Foreman, 2005; Lundstrom, Edlund, Karlsson, Brannstrom, Bucht, & Gustafson, 2005; Naughton, Saltzman, Ramadan, Chadha, Priore, & Mylotte, 2005). Consequences include increased morbidity and mortality rates and are even more pronounced when delirium goes undetected by health professionals (Marcantonio et al., 2003; McAvay et al., 2006; Jackson, Gordon, Hart, Hopkins & Ely, 2004; Han, Shintani, Eden, et al., 2010; McCusker, Cole, Dendukuri, & Belzile, 2003; McCusker, Cole, Abrahamowicz, & Primeau, 2002; McCusker, Cole, Dendukur, Belzile, & Primeau, 2001; Vida et al., 2006; Han, Eden, Shintani, et al, 2011; Gross et al., 2012, Witlox et al., 2010). Kakuma et al. (2003) studied older adults discharged from the ED and observed that patients with unrecognized delirium had the highest mortality rate, compared to ED patients with a recognized delirium. Nine out of 10 delirious patients that ED staff has not detected, are also not recognized by the hospital staff that care for the patient on the ward (Han, Zimmerman, Cutler, et al., 2009). For this reason, the SAEM Geriatric Emergency Medicine Task Force recommends all older ED patients receive some assessment for delirium and cognitive impairment, in order to be treated early (Sanders, 2002). Therefore, it is of the utmost importance to screen for and address delirium when the patient first presents to the ED (Gower, Gatewood, & Kang, 2012). Despite reliable and valid tools existing to help clinicians recognize the presence of delirium (Schuurmans, Deschamps, Markham, Shortridge-Baggett, & Duursma, 2003; Wong, Holroyd-Leduc, Simel, & Strauss, 2010; Adamis, Sharma, Whelan, & Macdonald, 2010), 68–76% of delirium cases in ED go undetected by medical or nursing staff (Singler et al.., 2014; Han, Zimmerman, Cutler et al., 2009; Nagaraj, Burkett, Hullick, Carpenter, & Arendts, 2016). Possible reasons for low detection rates are that the screening process is not tailored to ED practice, and is too time-consuming and taxing for patients (Bellelli, Morandi, Davis et al., 2014; Witlox et al., 2010; Kakuma et al., 2003; Castle, & Engberg, 2005; Zou et al., 1998). A case in point is the CAM. It has been validated for emergency departments (Monette et al., 2001), but uptake by the end users is limited. This drawback may explain why researchers, including the original authors of the CAM, have created shorter versions of it that have yet to be validated with ED nursing staff (Marcantonio, Ngo, O'Connor et al., 2014; Han, Wilson, Graves, Shintani, Schnelle, & Ely, 2016). As is well known, the time needed to conduct an assessment is pivotal for its application (Wong, Holroyd-Leduc, Simel, & Straus, 2010), and time constraint is one of the most frequently cited barriers to daily delirium screening (Eastwood, Peck, Bellomo, Baldwin, & Reade, 2012; Pun et al., 2005; Law et al., 2012; Brummel et al., 2013). Yet, the fluctuating nature of delirium means that more than one assessment over a 24-hour period is required for its detection (APA, 2013).

To overcome these barriers, researchers developed RADAR (Recognizing Acute Delirium As part of your Routine). The assessment is based on the face-to-face interaction between nurse and patient during the administration of medication. RADAR contains three simple observation-based items (yes–no) that can be scored based on the interaction with the patient. The patient is never questioned directly. Based on more than 500 RADAR administrations by bedside nurses, completion of RADAR takes an average of seven seconds (Voyer, Champoux, Desrosiers et al., 2015; Voyer, Champoux, Desrosiers et al., 2016). When compared with DSM-5 criterion-defined delirium in validation studies, RADAR had a

sensitivity of 73% and a specificity of 67% (Voyer, Champoux, Desrosiers et al., 2015), and a sensitivity and specificity of 100% and 77% in acute care settings and long-term care facilities respectively (Bilodeau, & Voyer, 2016). Among all participants with a positive RADAR, 89% to 100% had at least one symptom of delirium and it must be stressed that even one sign of delirium is detrimental to the health of patients (Tieges, McGrath, Hall & MacLullich, 2013; Cole, McCusker, Voyer, Monette, Champoux, Ciampi, Vu, Dyachenko et al., 2013; Cole, McCusker, Voyer, Monette, Champoux, Ciampi, Vu, & Belzile, 2013; Cole, Ciampi, Belzile, & Dubuc-Sarrasin, 2013; Cole, 2013; Cole, McCusker, Voyer, et al., 2013; Cole, Bailey, Bonnycastle, et al., 2016; McAvay, Van Ness, Bogardus et al., 2006).

Although RADAR on its own is a valid delirium-screening tool, we agree with the various expert groups that recommended the adoption of a two-step approach to the detection of delirium (Young, Murthy, Westby, Akunne, & O'Mahony, 2010; O'Regan, Ryan, Boland, et al., 2014) and, specifically, in the ED (Improved awareness, 2014). The first step is to screen for the 6th vital sign, which is a measure of the two core signs of delirium: attention and consciousness (Flaherty, Rudolph, Shay et al., 2007; Bellelli, Trabucchi, 2008). The second step is to administer a more comprehensive tool, such as the CAM or 4AT (Bellelli, Morandi, Davis, et al., 2014). By so doing, the process will be quicker and only positive cases from the first step comprehensively assessed. The objective of our study is to validate RADAR in the ED as a measure of the 6th vital sign. These reliability and validation tests were examined: sensitivity, specificity, positive and negative predictive value, and inter-rater agreement.

Methods

Study design

This validation study was conducted in the ED of the Hôpital de l'Enfant-Jésus – CHU de Québec, a university-affiliated acute care hospital. Data collection took place from March 2015 to May 2015. The Research Ethics Boards of the CHU de Québec approved the study.

Sample and setting

Patient enrolment – Patients were included in the study if they were aged 65 years or over and consulting at the ED for any medical or surgical health issue. Patients had a minimum eight-hour ED stay, and were independent or semi-independent (5/7 Activities of Daily Living without any help). We excluded anyone living in a long-term care facility, with a history of psychiatric illness (specifically psychotic disorders, bipolar disorders and schizophrenia), those with moderate to severe dementia, or with intellectual disabilities, and those with delirium upon arrival or at the end of the first eight hours of ED stay. Also excluded were patients with unstable conditions that could lead to intensive care, and those who were unable to give verbal consent, to attend follow-up evaluations or to communicate in French or English.

A research assistant (RA) identified eligible patients using the Emergency Department Information System patient-tracking software. After appropriate consent, the RA first assessed patients for inclusion and exclusion criteria and then conducted an in-person evaluation of social-clinical, co-morbid, functional and psychological status. The RA used the Confusion Assessment Method (CAM) to confirm absence of delirium at this first encounter. Charts were reviewed and all confounder variables were collected.

Measures

RAs were divided into Groups A and B to ensure that the RAs who complete the RADAR are not aware of the result of the CAM. To evaluate the presence of signs of delirium with CAM the RAs from Group A followed up patients with face-to-face interviews twice a day during their entire ED stay and over a 24-hour period on hospital ward. RAs from Group B were student nurses who scored RADAR by observing the patients during the distribution of medication (8 am, 12 noon, 5 pm, 8 pm) by ED nurses. If a patient did not take a medication at a specific hour, then RADAR was administered around the same time and was based on the interaction during other clinical activities (e.g., clinical assessment, measure of vital signs, blood sample, any treatments).

Primary measures – A positive 6th vital sign is defined as the presence of both an altered level of consciousness and inattention over the course of the day (Voyer, Champoux, Desrosiers et al., 2016; Bellelli & Trabucchi, 2008; Flaherty, Shay, Weir, et al., 2009; Flaherty, Rudolph, Shay et al., 2007). The presence of these delirium symptoms was measured with the CAM (Wei, Fearing, Sternberg & Inouye, 2008; Inouye, van Dyck, Alessi, Balkin, Siegal, & Horwitz, 1990). RADAR was validated in acute (medicine, cardiology, coronary intensive care unit) and long-term settings (Voyer, Champoux, Desrosiers et al., 2015; Voyer, Champoux, Desrosiers et al., 2016; Bilodeau & Voyer, 2016). It consists of three items: "When you gave the patient his/her medication… 1) Was the patient drowsy?; 2) Did the patient have trouble following your instructions?; 3) Were the patient's movements slowed down? A RADAR screening is considered positive when at least one item is checked "Yes". During the course of the study, the RAs assessed a sample of patients simultaneously and independently to test RADAR's inter-rater reliability. Training on how to use the RADAR was based on a 25-minute video.

Instruments for descriptive measures – Data extracted from the participants' medical charts included: demographic information (e.g., age, sex, education, and living arrangement), diagnosis of dementia, and other medical diagnoses. Information on medical problems was used to compute the Charlson Comorbidity Index (Charlson, Pompei, Ales, & MacKenzie, 1987), validated as a predictive index for survival among older adults (Bravo, Dubois, Hebert, De Wals, & Messier 2002; Buntinx, et al., 2002). Patients' functional status was measured using the Older American Adult Resources and Services (OARS) (Fillenbaum, & Smyer, 1981; McCusker, Bellavance, Cardin, Trepanier,

Verdon, & Ardman, 1999). Patients' cognitive status at baseline was measured with the validated Telephone Interview for Cognitive Status (TICS-M) (de Jager, Budge, & Clarke, 2003).

Statistical analysis – A RADAR screening was deemed positive if at least one of the three items was checked as present at one point in time during the study. We evaluated inter-rater reliability between the two RAs for each RADAR item; simultaneous assessments were conducted in 26.8% of all RADAR administrations. We then quantified the inter-rater agreement using the kappa statistic in conjunction with raw agreement percentages. Second, we computed sensitivities (SE), specificities (SP), positive and negative predictive values (PPV and NPV respectively) and their confidence intervals for RADAR, as a measure of the 6th vital sign. All analyses were carried out using SAS for Windows, version 9.3.

Results

Description of the study population – This project was part of a larger multicentre project, the INDEED study (INcidence and impact measurement of DElirium induced by ED stay [Émond et al., 2017]), funded by the Fonds de Recherche du Québec—Santé (FRQ-S). The INDEED study included 111 (68.5%) patients. Of these, 54 (48.6%) were not evaluated because RAs from Group B were not available, which left a sample of 57 patients for analysis. Table 1 shows the characteristics of these patients. The mean age of participants was 74.3 years, and they had a mean Charlson Comorbidity Index score of 1.8.

A total of 256 RADAR were administered to these 57 patients during their stay in the ED, and each patient was assessed many times using the RADAR (4.5 ± 2.7 times). RADAR was positive for seven patients in our cohort (12.3%). Due to the fluctuating nature of delirium, patients with ≥ 4 RADAR assessments had more positive RADAR (6 of 7 patients, 85.7%).

Detection of the 6th vital sign – RADAR showed a sensitivity of 100% (95% CI 2.5–100) and a specificity of 89.3% (95% CI 78.1–96.0) for the 6th vital sign criteria (Table 2). Its positive predictive value (PPV) was 14.3% (95% CI 0.4–57.9), and the negative predictive value (NPV) was 100% (95% CI 92.9–100). All seven patients with a positive RADAR showed an altered cognitive status: one (14.3%) met the 6th vital sign, three (42.9%) met CAM criteria for delirium, and three (42.9%) met the Marcantonio criteria for subsyndromal delirium (SSD) (Marcantonio, Kiely, Simon et al., 2005).

Inter-rater agreement – To test RADAR's inter-rater reliability, the RAs assessed a sample of patients (n = 19/57; 33.3% of total sample) simultaneously and independently during the study. Percentage of agreement between the RAs was 89% and kappa value was 0.46 (CI 0.14–1.00), which indicates good inter-observer reliability.

Discussion

Delirium is often missed in the ED and this can cause severe consequences for the patients. Moreover, when delirium is undetected in the ED, it is often missed during the remainder of the patient's hospital stay. For this reason, researchers (Young, Murthy, Westby, Akunne, & O'Mahony, 2010; O'Regan, Ryan, Boland, et al., 2014) have suggested approaching the detection of delirium with a two-step process. The first step must be very fast and easy for nursing staff to implement. Therefore, we tested the validity of the RADAR for the detection of the 6th vital sign in the ED. This tool had previously been validated in other settings where it was well accepted by the nursing staff because of its fast administration time.

Table 1: Characteristics of patients

	Total (N = 57)	
Variables [Missing]	**N (%)**	**M (SD)**
Age (yrs.)		73.9 (7.5)
Sex (female)	32 (56.1)	
Cognitive assessment at admission (TICS-M)		29.7 (5.4)
Level of functional autonomy at admission (OARS)		26.3 (1.9)
Level of comorbidity (CCI)		1.8 (1.6)
Severe ≥8	0 (0)	

M (SD): Mean (standard deviation); HDS: Hierarchic Dementia Scale; TICS-M: Telephone Interview of Cognitive Status; OARS: Older American Resources and Services; CCI: Charlson Comorbidity Index.

Table 2: Detection of the 6th vital sign using RADAR				
		6th vital sign		
		-	+	TOTAL
RADAR	-	50	0	50
	+	6	1	7
	TOTAL	56	1	57
Sensitivity: 100% (95% CI: 2.5 – 100)				
Specificity: 89.3% (95% CI: 78.1 – 96.0)				
PPV: 14.3% (95% CI: 0.4 – 57.9)				
NPV: 100% (95% CI: 92.9 – 100)				
CI = confidence interval				

Given its 100% sensitivity, the RADAR screening tool appears to be a valid measure of the 6th vital sign. The negative impact of the presence in elderly patients of the mental health symptoms of the 6th vital sign is well known from earlier studies. Indeed, Cole, McCusker, Voyer, Monette, Champoux, Ciampi, Belzile, and Vu's study (2013) showed that, when compared to patients without delirium symptoms over a six-month period, the presence of only one symptom of delirium is associated with cognitive and functional impairments, as well as mood and behaviour problems. Similarly, Shim, DePalma, Sands and Leung (2015) found that, among elderly patients who underwent non-cardiac surgery, patients with at least one delirium symptom on the first day of surgery had a longer hospital stay and a functional decline one-month after surgery. Li, Chen, Chiu, Fu, Huang, and Chen (2015) showed similar results among patients who underwent cardiac surgery, where patients with sub-syndrome delirium [SSD] (one symptom of delirium) fell into an intermediate zone between non-delirious patients and delirious patients, for length of stay and cognitive problems. Finally, a study by Cole et al. (2016) showed that in a cohort of hospitalized elderly patients with SSD not developing into a full-blown delirium, 29% of patients still had SSD symptoms three months after onset. In view of these poor outcomes related to inattention or altered level of consciousness, a RADAR sensitivity of 100% for a positive 6th vital sign is clinically relevant (Shi, Warren, Saposnik, & Macdermid, 2013). These assertions also support the clinical importance of a RADAR+ even when not related to a positive 6th vital sign. In this study one patient was positive for the 6th vital sign, but RADAR was positive for six other cases and all of them showed signs of delirium.

In this study, we demonstrated that RAs (student nurses) with a 25-minute video training were able to use RADAR adequately (Kappa of 0.46). We know from previous studies that RADAR is a quick seven-second tool employing observations only. Given the fluctuating nature of delirium symptoms, this tool can, and must be used many times a day in order to better identify symptoms of delirium. However, these assessments should not be a burden for patients, and the patients should not improve their scores by learning the right answers (Voyer, Champoux, Desrosiers, 2015). Since RADAR is based solely on observation, these issues are unlikely to arise, and so multiple administrations are possible. This is clinically important since it was demonstrated that a number of participants who were not initially identified by RADAR as having signs of delirium, were found positive when tested again three hours later. This finding shows the obvious benefit of screening for signs of delirium at multiple points during a patient's ED visit to maximize delirium identification (LaMantia, Messina, Hobgood, & Miller, 2014), bearing in mind that the multiple screening process must be feasible for nursing staff.

Study limitations

The results of this study are based on a small sample size with only one case with a positive 6th vital sign, thus limiting their generalizability. Moreover, the number of research staff limited the capacity to include all eligible patients in this study, and may also have introduced a selection bias. Research staff (student nurses) administered RADAR and consequently another study should be conducted to test if sensitivity and specificity would be similar were bedside nurses to use the RADAR in their daily practice (as was the case in all other studies on RADAR). Nevertheless, this study has certain strengths. Attention and level of consciousness were measured using the CAM, an instrument well-recognized for its psychometric properties. Second, ratings of these signs of delirium were based on a seven-hour

observation period, a cognitive assessment and additional sources of information (staff, family members, medical chart review and a baseline cognitive assessment). Third, in order to minimize contamination bias, the RAs responsible for administering RADAR were blinded to the CAM results.

Conclusions

RADAR was developed for the detection of signs of delirium and is a brief screening tool that appears to be valid for the 6th vital sign. RADAR is certainly a tool worth considering as a first step in the detection of delirium process among ED patients. Finally, only a 25-minute training session is needed to be able to properly use the RADAR (video freely accessible at http://radar.fsi.ulaval.ca/).

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Transport determinants for continuing care residents assessed by an EMS urgent response team: A retrospective observational study

By Kevin Lobay, DMD, MD, MBA, Robyn Palmer, MD, Lorissa Mews, MD, Robert Sharman RN, EMT-P, BHScN, MA, Brian Boswell, EMT-P, and Priya Jaggi, MSc

Abstract

Introduction: Alberta Health Services (AHS) Emergency Medical Services (EMS) in the City of Edmonton recently introduced an "EMS Continuing Care Urgent Response Team" (ECCURT) to support continuing care residents by providing urgent care on-site, thereby minimizing unnecessary patient transfers to emergency departments. ECCURT is comprised of Advanced Care Paramedics and Nurse Practitioners, and is dispatched via a dedicated consult line and/or 911.

Objectives: This study will identify various patient characteristics that are correlated with frequency of transport to hospital.

Methods: This six-month retrospective, observational study of patient data includes all new patients assessed between January 1, 2016 and June 30, 2016. Multiple regression analysis was performed to determine whether a statistically significant correlation exists comparing age, Goals of Care Designation (GCD), and Canadian Triage Acuity Scale (CTAS) score, with transport frequency.

Results: Four hundred and seventy-one (83%) of 567 new patients assessed by ECCURT during the study period had established GCDs in place. Five hundred and twenty-one (92%) of our patients had a CTAS score assigned. One hundred and thirty-one (23%) of our patients were transported to hospital. All patients with a GCD of C2 were managed by our team on-site. Multiple regression analysis reveals a statistically significant correlation of age, GCD, and CTAS score with frequency of transport to hospital (F statistic = 3.26 E-11). P-values for each variable are: age = 0.92; GCD = 0.05; CTAS = 5.08 E-12.

Conclusion: Although patient age is not strongly correlated with transport frequency independently, GCD and CTAS score may be quite useful predictors for Community Care EMS Teams when selecting patients who can be managed on-site without transport to hospital.

Key words: urgent response team; paramedics; nurse practitioners; Goals of Care Designation; CTAS Score

Introduction

Many of the interventions provided during an Emergency Department (ED) visit can be performed within a continuing care facility, including therapies such as IV catheter placement with fluid administration, urethral catheter placement, oxygen administration, and oral or intravenous medication administration (Ackermann, 2001; Ackermann, 1998; Trahan, Spiers, & Cummings, 2016). When transported to hospital, patients with these needs often return to their residence following ED assessment and treatment (Reid, et al., 2013). Treatment performed safely within a patient's home, rather than in hospital, may comply with patient wishes and protect them from inherent risks of hospitalization such as hospital-acquired infections and risk of delirium (Caplan, Meller, Squires, Chan, & Willett, 2006; Fong, et al., 2012; Nyweide, Anthony, Bynum, et al., 2013).

The continuing care population is characterized by a high proportion of frail elderly patients with complex medical needs (Canadian Institute for Health Information, 2016). To serve this population in Edmonton, an EMS Continuing Care Urgent Response Team (ECCURT) was introduced by Alberta Health Services (AHS) Emergency Medical Services (EMS). ECCURT personnel include Nurse Practitioners and Advanced Care Paramedics who can assess and initiate treatment for patients in consultation with family physicians. ECCURT vehicles are equipped with standard ambulance resources and additional tools including blood gas analyzers, urinary catheters, splinting materials, sutures, intravenous antibiotics and various oral medications. On-site use of these tools can mitigate transport to hospital of many patients with lower acuity medical needs.

Objectives

This study provides an overview of the patients who are assessed and managed by ECCURT, and determines whether a

statistically significant correlation exists comparing patient age, Goals of Care Designation (GCD), and CTAS score with frequency of transport to hospital.

Methods

Research setting: Our study was conducted in the city of Edmonton, which is served by a unified 911 dispatch and ambulance service (AHS EMS). ECCURT responds to all 63 supportive-living and long-term care facilities in Edmonton, housing approximately 6894 clients.

Design: This retrospective, observational study provides an overview of ECCURT patient demographics, and relates age, GCD and CTAS score with frequency of transport to hospital using multiple regression analysis. Our study was approved by the University of Alberta Health Research Ethics Board (Panel B), and by the AHS EMS Research Committee. The authors have no conflicts of interest to declare.

Study population: All patients living in Edmonton Continuing Care facilities who were assessed by ECCURT between 1-January-2016 and 30-June-2016 are included. For patients assessed multiple times, repeat visits within a 1-month period, and repeat visits for ongoing management, were excluded from analysis.

Data collection: For all patients, the following variables were recorded in our internal Microsoft Access Database: age, CTAS score assigned on initial patient encounter, presence/level of GCD, ICD-9 diagnosis assigned upon completion of the patient encounter, and whether the patient required transport to an ED for further investigations and/or treatment.

Analysis: Statistical analysis was performed by the authors using Microsoft Excel. We performed a multiple regression analysis comparing age, CTAS Score, and GCD with frequency of transfer to hospital.

Table 1: Goals of Care Designation (GCD) and Transport Frequency

GCD	Number of Patients	Number Transported	% Transported
R1	91	20	21.98
R2	11	2	18.18
R3	23	5	21.74
M1	232	62	26.72
M2	54	6	11.10
C1	47	8	17.00
C2	13	0	0.00
Sum	471	103	21.87

Transport Frequency (unweighted) Mean 16.67; Median 18.18; Standard Deviation 8.16;
Simple Linear Regression Correlation: (*r*) -0.69; Slope -2.82; Y-intercept 27. 95; Sig F (*p*) 0.0850

Results

Five hundred and sixty-seven new patient visits by ECCURT occurred during the study period, and all are included in our analysis. Most of these patients were treated on site, with only a minority (23%) requiring transport to hospital. Eighty-nine percent of our patients had a documented diagnosis. The most common diagnoses were pneumonia, musculoskeletal injury, laceration, cellulitis, fluid/electolyte abnormality (primarily dehydration), genitourinary problem NOS (primarily urinary retention), and failure to thrive.

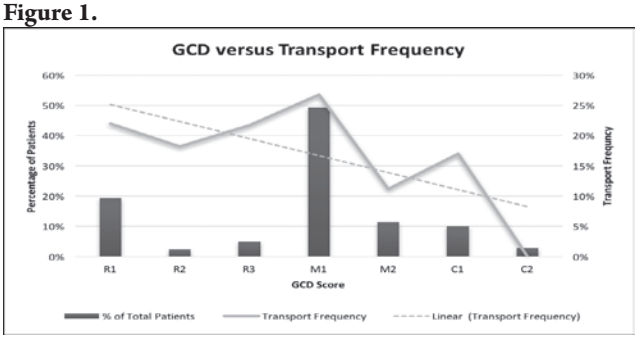
Multiple regression analysis reveals that a statistically significant relationship exists when comparing age, GCD and CTAS score with transport frequency. P-values for each variable are: age = 0.92; GCD = 0.05; CTAS = 5.08 E-12. (R^2 is 0.09). Patient age ranged from 25 to 104 years, with a median of 84 years and a mean of 80.5 years. A poor correlation exists between age and transport frequency in our model, suggesting that age is not a good independent predictor of whether a patient will require transport to hospital. Four hundred and seventy-one (83%) of our patients had existing GCDs. Patients with less-aggressive GCDs trend toward lower transport frequencies (P = 0.05) (See Table and Figure). No patient with a GCD of C2 (indicating comfort-level care without transportation) was transported to hospital. Five hundred and twenty-one (92%) of our patients were assigned CTAS scores. Patients were significantly less likely to be transferred to hospital if they had been assigned a less-acute CTAS score (P = 5.08 E-12).

Discussion

Alberta Health Services strives "to provide every patient with the right care, at the right time, by the right provider" (Alberta Health Services, 2017). ECCURT strives to meet this objective by dispatching nurse practitioners and paramedics with an enhanced scope of practice to the patient's home facility, enabling limited on-site investigations and treatment. Further analysis is needed to determine whether ECCURT programs reduce system costs, reduce ED overcrowding, and reduce morbidity and mortality associated with hospitalization.

Goals of Care documentation has become commonplace in patients whose health is in decline. Although such documentation does not consistently modify interventions performed by healthcare practitioners, a standardized form was introduced by AHS to help clarify and document interventions patients deem acceptable (Dobalian, 2004; Government of Alberta, 2013; Murray, Leblanc, & Beveridge, The Canadian Triage and Acuity Scale for Ontario paramedics, 2001; Purdy, 2002). Alberta's GCD document

Figure 1.



assigns an alphanumeric code to each level of therapy, which is documented in medical charts and provided to the patient.

Most patients (83% of our sample) living in continuing care facilities within Edmonton who are assessed by ECCURT have established GCDs. Our study suggests a trend toward decreasing transport frequencies with less-aggressive GCDs, and we believe that these scores should be considered when deciding whether a patient should be transported to hospital.

The Canadian Triage Acuity Scale (CTAS) provides a means of standardizing patients' acuity in an emergency medical environment. CTAS was introduced in Canada in 1999, and has been adopted in emergency departments worldwide, with evidence to support its reliability and validity. In 2001, CTAS was introduced for use by paramedics in Ontario (Murray, Leblanc, & Beveridge, The Canadian Triage and Acuity Scale for Ontario paramedics, 2001). That same year, a study performed in Edmonton compared paramedic and ED triage nurse score assignment on ED arrival with moderate to good weighted Kappa agreement 0.61 (95% CI 0.56 – 0.66) (Murray & Bondy, 2002). Our data reveal a very significant inverse correlation between CTAS score and transport frequency. Patients with more acute CTAS scores are much less likely to be manageable on-site.

Conclusion

Our study provides useful demographic data and suggests that CTAS scores and GCDs are important factors that impact the frequency of transport to hospital. ECCURT team members and EMS medical directors wishing to build similar programs in their communities may consider incorporating these variables into their dispatch and transport decision algorithm.

About the authors

Dr. Kevin Lobay is an Emergency Medicine physician at the University of Alberta Hospital, and serves as Associate Zone EMS Medical Director for Alberta Health Services in Edmonton. Dr. Lobay also enjoys teaching part-time at the University of Alberta School of Dentistry, volunteers internationally as a general dentist, and participates in a variety of sports.

Lorissa Mews is a fifth-year FRCPC Emergency Medicine resident with a special interest in Simulation and Quality Improvement. She grew up in Ontario, attended Western University and moved to Edmonton for medical school and residency.

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ADVERTORIAL

UNCOVERING HIDRADENITIS SUPPURATIVA

Dr. Shear, Dr. Tran and Dr. George discuss Hidradenitis Suppurativa.

DR. NEIL SHEAR
Head of Dermatology, Sunnybrook Hospital

DR. VU KIET TRAN
ER physician at University Health Network

DR. RALPH GEORGE
Associate Professor, University of Toronto, Division of General Surgery

Q. WHAT IS HS?

A. Hidradenitis Suppurativa (HS) is a chronic, painful, inflammatory skin disease which affects 1-4% of the general adult population.[1,4] It is characterized by boils usually occurring where certain sweat glands are located, such as under the breasts, buttocks and inner thighs. The boils can develop and connect, forming draining sinuses which discharge foul-smelling pus.[1,2,4]

Q. WHAT CAUSES HS?

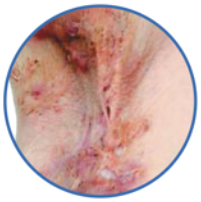
A. The cause of HS is unclear. It is thought that certain genetic markers and defects within hair follicles are at the root of the disease.[2] Risk factors include smoking and obesity.[1] About one-third of patients report a family history of HS.[1] HS has been reported to co-occur with several comorbid conditions—mostly, inflammatory bowel disease.[1]

Q. HOW DOES HS IMPACT QUALITY OF LIFE?

A. HS is often undiagnosed or misdiagnosed.[2,3,4] It interferes with social interactions, job performance and intimate relationships–often leading to isolation.[1] It is painful and causes embarrassment.[1]

Q. DO PEOPLE SUFFERING FROM HS GO TO THE ER FOR TREATMENT?

A. People with HS come to the emergency room in severe pain and discomfort requiring assistance with the draining of the boils during a flare-up.[4] It's not unusual for patients to go home undiagnosed.[4]



Q. IS THERE A CURE FOR HS?

A. There is currently no cure for HS.[4,5] Early diagnosis and proper management is important for a patient's quality of life.[1] The first step for those with HS is to speak to their dermatologist to get an accurate diagnosis.[1]

Q. HOW CAN HS BE TREATED?

A. Medical treatments for HS have included antibacterial washes, topical clindamycin, various systemic antibiotics, hormonal therapies, systemic retinoids, laser treatment, intralesional steroid injections and biologics.[3] Surgical de-roofing or wide excision procedures have long been the definitive treatment for severe HS.[3] There is no guarantee that HS will not recur in the previously excised areas.[3]

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