



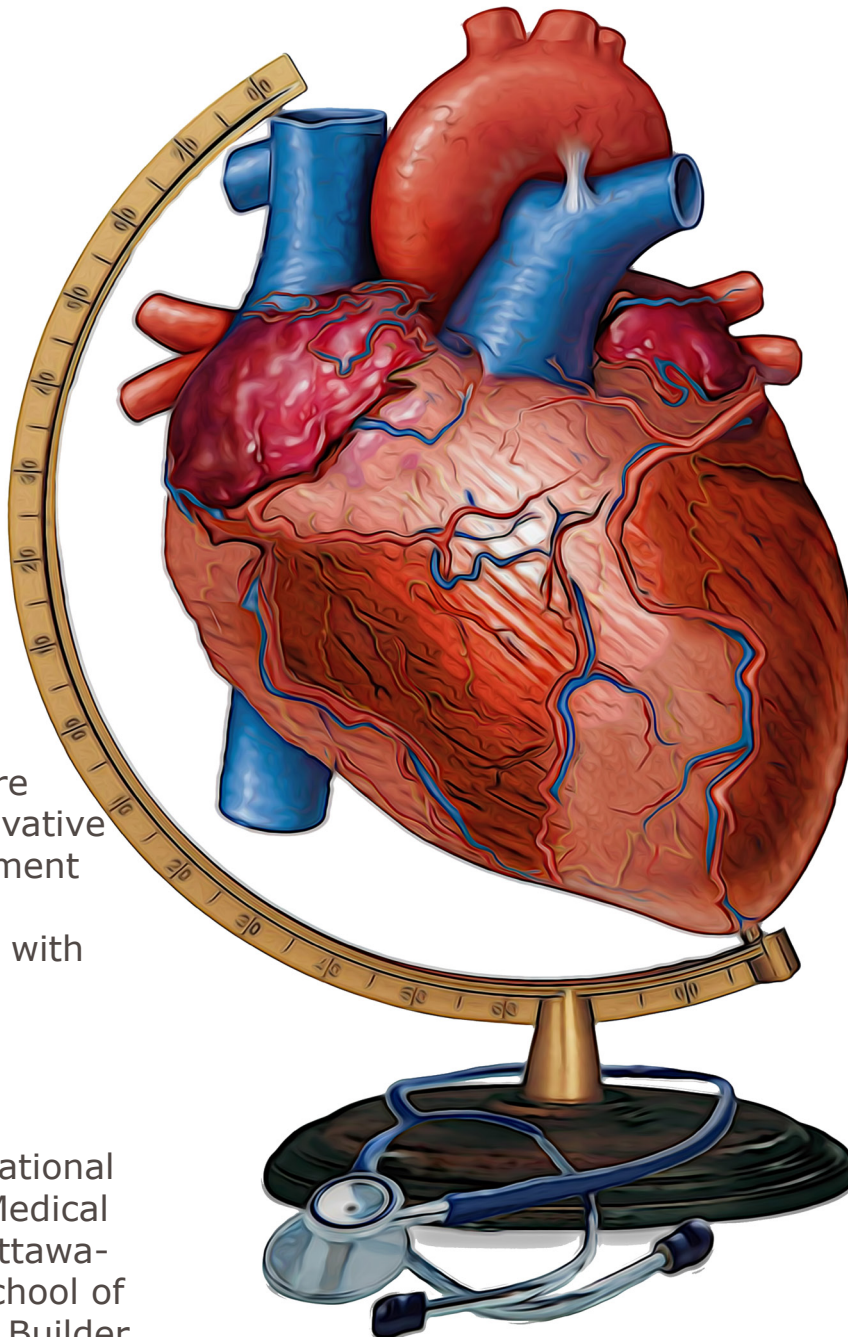
UOJM JMUO

November 2016
Volume 6 Issue 2

UNIVERSITY OF OTTAWA
JOURNAL OF MEDICINE

JOURNAL MÉDICAL DE
L'UNIVERSITÉ D'OTTAWA

GLOBAL HEALTH



INTERVIEW

Narrative Exposure
Therapy: An Innovative
Short-Term Treatment
for Refugees with
PTSD – Interview with
Dr. Morton Beiser

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ABOUT US

UOJM is an international, peer-reviewed journal led and published by the students of the Faculty of Medicine. We welcome submissions in a variety of areas in biomedical research and feature original research, reviews, news and commentaries, case reports and opinion pieces. Our articles are written in both English and French, and represent the only student-run bilingual medical journal in Canada.

Le **JMUO** est un journal revu, édité et publié par les étudiants de la Faculté de médecine. Nous encourageons les soumissions d'une variété de différents domaines en recherche biomédicale et publions des articles de recherche originale, des articles de revue, des nouvelles et commentaires, des rapports de cas et des pièces d'opinion. Nos articles sont écrits en français et en anglais et représentent le seul journal médical bilingue géré par les étudiants au Canada.

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JOURNAL OF MEDICINE



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UOJM: Preface

Now beginning its 7th cycle, the University of Ottawa Journal of Medicine (UOJM) is off to a great start following another year of growth. The 6th cycle represented our biggest expansion of the journal yet, as we increased promotions to medical schools and universities across Canada, the Canadian Federation of Medical Students (CFMS), the Ontario Medical Students' Weekend (OMSW), and indeed we've been receiving increasing numbers of submissions internationally as well.

UOJM 6.2: Global Health focuses on an increasingly important aspect of healthcare: our growing connectedness with other countries and the healthcare needs that exist abroad and for incoming refugees. With wars happening overseas, our borders have been welcoming tens of thousands of refugees, and with that comes new challenges for our healthcare system—challenges that we have no doubt Canadian healthcare professionals and researchers are keen to take on.

The articles in this issue address many aspects of refugee health, such as posttraumatic stress disorder (PTSD), problems associated with language barriers, and challenges accompanying the transition to becoming Canadian. Overseas, healthcare needs can vary greatly from our own. This issue also discusses the challenges of addressing paediatric cancer in developing countries, the potential benefits of using Community Health Workers to prevent measles outbreaks, the problems facing internally displaced people in Colombia, and student experiences of doing clinical electives in Armenia, China, and Rwanda. The Ottawa-Shanghai Joint School of Medicine (OSJSM) is the first of its kind in the world, and in this issue students discuss their experiences of working in the Chinese healthcare system, as well as the knowledge exchange between our institutions.

Global health is not just about addressing the needs of foreigners, but is also about improving the health of all people worldwide, which includes those within our borders. Despite Canada's prosperity, we are not without our own problems. The needs of our Indigenous populations have not yet been adequately addressed, though progress is being made. To that end, this issue features articles addressing the problem of Indigenous suicide and the importance of cultural learning experiences for medical students in First Nations communities, to build a stronger understanding of the needs and determinants of health of these communities.

Turning to the next year, we anticipate continued growth and new collaborations between UOJM and other medical faculties via external team members. In contrast to the broad, global focus of this issue, our Spring 2017 issue will focus on quality improvement and patient safety within Canadian borders. Quality improvement and patient safety can be defined as making changes "that will lead to better patient outcomes (health), better system performance (care) and better professional development" [1]. This problem can be addressed via basic research. There are several clinical trials that aim to elucidate treatment safety and efficacy, as well as many epidemiological studies that evaluate health threats (prevention and control) and quality improvement in healthcare. The results of these studies impact different areas of healthcare, including Canadian policy, health system design, medical education, medical technology, patient programs and education, and access to healthcare and healthcare resources.

The submission deadline of our Spring 2017 issue is March 1, 2017. High quality writing will be recognized with an honorarium award. Submissions can be made via our online submission system via this link: <https://uottawa.scholarsportal.info/ojs/index.php/uojm-jmuo/about/submissions#onlineSubmissions>. Please let us know if you have any questions at contact@uojm.ca.

We hope you enjoy the Global Health issue of UOJM!

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REFERENCES

1. Batalden PB, Davidoff F. What is "quality improvement" and how can it transform healthcare? *Qual Saf Health Care*. 2007;16:2–3.

JMUO: Préface

Entamant maintenant son 7^e cycle, le Journal médical de l'Université d'Ottawa (JMUO) part du bon pied à la suite d'une autre année de croissance. Le 6^e cycle a constitué notre plus grande expansion de la revue à ce jour. Nous avons fait plus de promotions aux écoles de médecine et aux universités partout au Canada, à la Fédération des étudiants et des étudiantes en médecine du Canada (FEMC), à la fin de semaine des étudiants en médecine de l'Ontario (OMSW), et nous avons également reçu des soumissions internationales en plus grand nombre.

JMUO 6.2 : La santé mondiale se concentre sur une facette de plus en plus importante des soins de santé : notre connexité croissante avec les autres pays et les besoins de soins de santé qui existent à l'étranger et ceux des nouveaux réfugiés. Avec les guerres qui se produisent outre-mer, nos frontières ont accueilli des dizaines de milliers de réfugiés. Cela s'accompagne de nouveaux défis pour notre système de soins de santé - des défis que les professionnels de la santé et chercheurs canadiens ont sans aucun doute hâte de relever.

Les articles dans ce numéro considèrent divers aspects de la santé des réfugiés, tels le trouble de stress post-traumatique (TSPT), les problèmes associés aux barrières linguistiques, et les défis relatifs à la transition vers la vie canadienne. À l'étranger, les besoins en matière de soins de santé peuvent varier considérablement des nôtres. Ce numéro discute également des défis quant à l'approche aux cancers pédiatriques dans les pays en voie de développement, des avantages possibles d'avoir recours aux agents de santé communautaire pour prévenir des flambées épidémiques de rougeole, des problèmes auxquels font face les personnes déplacées à l'intérieur de leur propre pays en Colombie, et des expériences des étudiants ayant fait des stages au choix cliniques en Arménie, en Chine et au Rwanda. L'école conjointe de médecine Ottawa-Shanghai (ECMOS) est la première en son genre dans le monde, et dans ce numéro, des étudiants discutent de leurs expériences avec le système de soins de santé chinois, ainsi que du partage de connaissances entre les établissements à Ottawa et à Shanghai.

La santé mondiale ne traite pas seulement des besoins des personnes venant d'ailleurs, mais plutôt de la santé de toutes les personnes mondialement, incluant les personnes d'ici. Malgré la prospérité du Canada, nous avons des problèmes encore aujourd'hui. Les besoins de nos populations autochtones n'ont pas encore été abordés adéquatement, bien qu'il y ait du progrès. À cette fin, ce numéro présente des articles qui s'attaquent au problème du suicide chez les personnes autochtones et à l'importance des expériences d'apprentissage interculturel dans les communautés des Premières Nations pour les étudiants en médecine, afin de développer une meilleure compréhension des besoins et des déterminants de la santé de ces communautés.

Pour l'année à venir, nous anticipons une croissance continue et de nouvelles collaborations entre le JMUO et les autres facultés de médecine par l'entremise de membres externes de l'équipe. En contraste à l'accent de ce numéro sur des défis vastes et mondiaux, le numéro du printemps 2017 portera sur l'amélioration de la qualité et la sécurité des patients à l'échelle du Canada. L'amélioration de la qualité et la sécurité des patients représentent des changements « qui mèneront à de meilleurs résultats pour les patients (santé), une meilleure performance du système (soins) et une meilleure formation professionnelle continue » (traduction libre) [1]. Ce problème peut être abordé par l'entremise de la recherche fondamentale. Il y a de nombreux essais cliniques visant à élucider la sécurité et l'efficacité des traitements, ainsi que plusieurs études épidémiologiques qui évaluent les menaces envers la santé (prévention et contrôle) et l'amélioration de la qualité des soins de santé. Les résultats de ces études ont des répercussions sur divers aspects des soins de santé canadiens, incluant les politiques, l'élaboration du système de soins de santé, l'éducation médicale, la technologie médicale, l'éducation et les programmes pour les patients, et l'accès aux soins et aux ressources de soins de santé.

La date limite de soumission pour notre numéro du printemps 2017 est le 1^{er} mars 2017. Un prix sera remis pour récompenser la rédaction de haute qualité. Les soumissions peuvent être envoyées par l'entremise de notre système électronique, au lien suivant : <https://uottawa.scholarsportal.info/ojs/index.php/uojm-jmuo/about/submissions#onlineSubmissions>. Si vous avez des questions, s'il vous plaît contactez-nous : contact@uojm.ca.

Nous espérons que ce numéro du JMUO sur la santé mondiale vous plaira!

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RÉFÉRENCES

1. Batalden PB, Davidoff F. What is "quality improvement" and how can it transform healthcare? *Qual Saf Health Care*. 2007;16:2-3.

Narrative Exposure Therapy: An Innovative Short-Term Treatment for Refugees with PTSD – Interview with Dr. Morton Beiser

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ABSTRACT

Dr. Morton Beiser is a Professor of Distinction in Psychology at Ryerson University, as well as Founding Director and Senior Scientist at the Centre of Excellence for Research on Immigration and Settlement (CERIS) in Toronto. After obtaining his medical degree from the University of British Columbia in 1960, he interned at the Montreal General Hospital, completed residency in Psychiatry at Duke University Medical Centre and pursued post-doctoral training in Psychiatric Epidemiology at Cornell University. Dr. Beiser was appointed as Associate Professor of Behavioural Sciences at the Harvard School of Public Health from 1967 to 1975, before returning to Toronto to assume a David Crombie Professorship of Cultural Pluralism and Health, and professorship in Psychiatry. Given his extensive research experience on immigration and resettlement work, we interviewed Dr. Beiser to gain further insight into how Narrative Exposure Therapy (NET) can be an innovative short-term option to treat refugee patients with post-traumatic stress disorder (PTSD). Dr. Beiser is currently conducting a randomized trial to assess the effectiveness of NET among refugee children and youth in Toronto.

RÉSUMÉ

Dr Morton Beiser est un professeur distingué en psychologie à l’Université Ryerson, ainsi que directeur fondateur et scientifique principal au Centre d’excellence pour la recherche en immigration et en intégration (CEREI) de Toronto. Après avoir obtenu son doctorat en médecine à l’Université de la Colombie-Britannique en 1960, il a fait son internat à l’Hôpital général de Montréal, a complété sa résidence en psychiatrie au centre médical de l’Université Duke et a suivi une formation postdoctorale en épidémiologie psychiatrique à l’Université Cornell. Dr Beiser a été nommé professeur agrégé en sciences du comportement à l’École de santé publique de Harvard de 1967 à 1975, avant de retourner à Toronto pour occuper la Chaire David Crombie sur le pluralisme culturel et la santé, et la chaire de psychiatrie. Compte tenu de sa vaste expérience en recherche sur l’immigration et la réinstallation, nous avons interviewé Dr Beiser pour mieux comprendre comment la thérapie d’exposition descriptive (TED) est une option novatrice à court terme pour traiter les patients réfugiés atteints de trouble de stress post-traumatique. À l’heure actuelle, Dr Beiser mène un essai randomisé pour évaluer l’efficacité de TED chez les enfants et jeunes réfugiés de Toronto.

WHAT IS NET? CAN YOU DESCRIBE TO US HOW NET FUNCTIONS AND THE LINK BETWEEN PTSD AND NET?

My understanding of Narrative Exposure Therapy (NET) from the people who have developed it, is that it is based on the neurophysiology of memory and they tend to think of memory as comprised of a couple of different elements: physiological-emotional and rational-cognitive components. So when we remember an episode, we remember both the sensations and feelings that were part of that episode (i.e. physiological-emotional component); but there is also a narrative framework around that experience which helps put it in context, so we recall when it happened (i.e. rational-cognitive component).

Keywords: Narrative Exposure Therapy; Refugees

One of the signature symptoms of PTSD is “intrusion” - memories will intrude in situations in which they do not belong, so that people actually re-experience a terrible event that had happened, long after the threat has actually passed. It is not that they are imagining themselves back in the situation, but that they really are re-experiencing the whole thing. That is because at the time the memory is being laid down, there is so much fear and so much terror that only the “hot memory” gets laid down without the sufficient cognitive overlay to place that memory where it belongs - which is in the past. So instead of experiencing it as a past thing, people will re-experience it as if it were in the present, where it no longer belongs.

Interview

The idea of “hot memory” is that when we experience an important event, there are physiological and emotional components (e.g. if you won an award then you may be in a flush of excitement and have a pounding heart). Then there is “cold memory,” which is the more cognitive aspect (e.g. what exactly was the award for, who presented it, what was the context, what was in the room, who was there, what was the speech like, etc.). For a person with PTSD, the past events can be so traumatic and fear-inducing that he/she does not comprehend all the details. It is counterintuitive because one would think that someone with such a bad overriding experience would have a clear memory of it. On the contrary, people often cannot recall the details, which are the cognitive aspects (i.e. cold memory), because there was so much fear at the time of the experience. As a result, the person is left only with hot memory — the physiological aspect of the memory.

NET aims to reattach the cognitive aspect of the experience (cold memory) to the emotional, physiological part of the experience (hot memory), so that it can be appropriately located in the past and not intrude into present day situations. That way I can recall that the memory happened 20 years ago and it is not happening now; hence not re-living the event daily. That is the kind of neurophysiological theory that underpins NET. An essential component of therapy in general is to be able to construct a narrative that makes sense for the individual and allows them to get on with their lives.

The actual conduct of the therapy is based on the idea of a lifeline (i.e. timeline) and you literally will hand the person (who is getting the therapy) a rope and the person will lay out that rope on the floor of the therapy room. That rope signifies the lifeline of that person to date, and you ask the person to divide the rope into a manageable period of time, such as a 10-year or 20-year interval, so that the person can identify all events on the lifeline.

Then we have 2 baskets: one is a basket of flowers and other is a basket of stones. And the therapist explains to the person that the stones represent bad events or bad circumstances in their life while the flowers represent really good events. Then the task is to lay out stones and flowers on the lifeline indicating when the events occurred and describe why and what each stone and flower represent. The job of the therapist is to note when these events occurred and to go through each of these stones and get the person to describe each event exactly. This is not to provoke the experience again, but rather to get the person to lay a cognitive framework around the experience. The emphasis is not based on the actual feelings at the time, but rather trying to contextualize the experience. So the goal is to locate the situation and try to recall the events surrounding the experience (i.e. exactly when it occurred, what the settings was, who was

in the room, what the sensations were at the time). The whole thing is an attempt to try to re-attach the cold memory to the hot memory so that it becomes easier for the person to place it appropriately in the past.

WHAT IS INNOVATIVE ABOUT NET?

NET was developed by a group of colleagues in Germany to use in a refugee population in very difficult situations — mostly at camps in Africa and South East Asia, which was very successful. The whole approach of using the neurophysiology of memory framework, a technique involving symbols such as the rope, flower and stones, is extremely powerful and innovative given the current climate of being culturally appropriate in treatments. There is never any difficulty in explaining the elements of this therapy because flowers and stones have a universal significance. People easily understand what stones and flowers represent, so it is a technique that is culturally sensitive. Besides that, NET is also innovative because it is relatively brief, usually 8 sessions 1 hour in length. Moreover, you do not need to be a highly trained mental health professional in order to administer NET. It is something that people can be trained to do in a relatively short period of time. If you are thinking of introducing the therapy on a large scale basis for a healthcare system, NET is largely inexpensive to develop.

WHAT INSPIRED YOU TO BE INVOLVED WITH REFUGEE HEALTH AND THE CREATION OF NET?

I’ve been involved in migration and refugee studies for most of my career. My first major involvement with refugee studies was in the late 70s — early 80s when Canada was accepting the Southeast Asian “boat people.” That was the largest single refugee wave that we had in Canada and was a very important event historically. I started a study of 1300 Southeast Asian refugees in 1981 and followed them for 10 years — studying how mental health affected integration, and conversely how integration affected mental health [1-6].

I read about NET and the work of my colleagues in refugee camps in Africa. What really surprised me was that they were doing really good first-class evaluations, despite the fact that doing that kind of work in terrible situations was very tough. They had data to show its real effectiveness [7-10]. One of the things that was very striking was that in the early publications they talked about not being able to achieve a lot of symptom reduction using NET, but what they did was to overcome some of the apathy or lack of motivation that is part of PTSD. People were more likely to get re-engaged in life, try to get on with their life, and to create alternatives for themselves regardless of symptoms. I think that is very important because we always emphasize symptom reduction but there is more to recovery than symptom reduction.

Interview

YOU ARE CURRENTLY LEADING A PILOT RANDOMIZED CLINICAL TRIAL IN TORONTO TITLED “LENDING A HAND TO OUR FUTURE” TO ASSESS THE EFFECTIVENESS OF NET IN REFUGEE CHILDREN (7–18YRS) WITH PTSD [11]. COULD YOU COMMENT ON WHY YOU DECIDED TO FOCUS YOUR STUDY ON YOUTH AND ON THE SIGNIFICANCE OF STUDYING NET?

We know from the literature that 20% of refugee youth have PTSD when they arrive in a refugee receiving country, while 12–15% of refugee adults have PTSD. Therefore, the effects of PTSD on children and youth tend to be greater than the rest of population. We know that PTSD affects 1 in 5 people, and is clearly a public health problem — so how do you address it? The approach we are using fits nicely with our concept of secondary prevention (of early diagnosis and treatment). It involves assessing people for PTSD and then offering them treatment that will help alleviate the problem and prevent further long-term complications. It also helps people overcome the other problems, such as challenges of resettling, and helps speed up the integration process. Our goal is to develop a public health approach to a major public health problem among newly arrived refugee people. We are obviously going to continue to receive more refugees even after the Syrian refugee crisis is over because we have come to define ourselves as a country that is compassionate, and one that cares about its international obligations towards refugees. We would need to be able to offer people not only safety but also help address their needs.

Part of the “Lending a Hand to Our Future” project mandate is to assess the effectiveness of NET among refugees in Canada. However, a more important part of this project is to see whether it is possible to introduce a way of increasing the capacity of the healthcare system to respond to refugee mental health needs, without incurring all kinds of terrible expenses. Most mental health advocates talk about neglecting refugee and immigrant mental health and the need for more psychiatrists and psychologists — and sure we do need them but you can’t keep spending. There has to be a realistic solution. So the question is — is there some way to be able to train people who will themselves be front-line workers as well as train others to assess people for PTSD? We want to be able to do this in a cost-effective way — by training medical students, nursing students, social work students, teachers and other providers. We need to promote an understanding that a child acting out in class could be an expression of PTSD, which requires exploring the possibility of an underlying mental health problem. So we are interested in having partnerships with healthcare provider groups and policy people involved as well — since they will all have to deal with the public health problem.

CAN YOU DESCRIBE A CHALLENGE YOU HAVE FACED WHILE IMPLEMENTING NET FOR REFUGEES WITH PTSD?

Some of the challenges have to do with professional skepticism and the concern about causing further harm to refugees by re-traumatizing them. I think that is a perfectly understandable concern and frankly one of my personal concerns before I actually was able to see what happens during the course of assessment and treatment — and see that empirically we don’t have re-traumatization. If anything, people are relieved and they say, “this is the first time I have been able to talk about this.” I think part of the reason that we do not see re-traumatization is because there is so much work done to put everything into context, to be able to recognize that the event is not happening now — and we do not want you to have a catharsis by re-living the experience. Instead, we want to be able to contextualize the experience and put a thick coating of memory around it (i.e. cognitive memory).

WHAT IS YOUR FUTURE PLAN FOR YOUR STUDY ON NET? DO YOU THINK NET COULD BE A REFERRAL SERVICE OR BE INCORPORATED INTO FAMILY PRACTICE?

We haven’t completed the study yet that we had funding for. We have now assessed about 1600 refugee youth and identified those who have PTSD in lots of different community settings (e.g. schools, resettlement agencies, healthcare settings) and have administered NET therapy with a good proportion of those people. What we still have to do are follow ups to assess outcomes. We have a total of 3 follow-ups which will take place at 3, 9 and 12 months after the completion of NET therapy.

I think that the less we rely on a process of referral, the better off we are, because people always get lost in the referral process. The more we can equip the people who have first-line contact with refugees with the tools to assess and to help treat PTSD, the better off we are. I don’t know if we will ever have family physicians who will do NET. Perhaps we’ll have healthcare professionals that are better informed about mental health issues among refugees and who feel more comfortable dealing with it, either directly or perhaps by supervising other people who would do the actual therapy. I think you can train almost anyone who has empathic abilities. It is important to have ongoing support and supervision. So, again I don’t know whether it would be possible for people in primary health care, family practice units or in clinics to have a service available that would be an assessment and treatment service for PTSD. I think that would be ideal because as I said, once you start the whole process of referrals people drop out, people get confused and it can end awfully. Whereas if people have a setting where they feel comfortable and know they will receive treatment or help for their mental health problems, I believe this would be an asset.

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HOW CAN WE, AS MEDICAL STUDENTS, BE TRAINED IN NET AND WHAT POTENTIAL ROLE COULD WE PLAY TOWARDS REFUGEE HEALTH?

Ideally, we want to have a cohort of people who are trained and experienced in NET therapy, to ultimately become trainers and supervisors. This is a big challenge we are trying to deal with right now. We are developing a partnership with CARE (Cooperative for Assistance and Relief Everywhere) Canada, where we are training and recruiting senior nursing staff who will be trained in NET and who will subsequently be able to train and supervise more junior nurses in the technique.

Another way we have been thinking about trying to improve the NET training itself and its availability is by developing videos of the training session. As can be expected, there are problems that occur over the course of NET therapy (e.g. experience of dissociation, problems with resistance) and there are ways of dealing with that. One way that we deal with that now is experientially — such that when patients have an experience of dissociation or resistance issues, then the supervisor will help them work through it. What we want to do is develop a more consistent course which will incorporate some of the didactic elements (e.g. lectures about the physiology of memory) but also will include components of the clinical experience using simulation. The goal would be to have a simulation of an experience where the therapist has confronted someone who is dissociating and then be able to demonstrate how such a situation should be managed. This is going to be a big advantage because the use of simulations will allow for training to be more consistent. Everyone will receive a uniform training in terms of how to deal with different situations and there will be a more ubiquitous availability. We have received some funding from Ryerson University for these additional components and are currently working on the program. There is a training workshop held by our colleagues in Italy and we will be filming part of the workshop as part of this.

I think that it is important as physicians to be both involved in helping people and advocating for them. Thus, I hope medical students will help become part of the voice of advocacy by being attentive to refugee mental health. As a result of receiving the NET training and seeing the effect of PTSD on refugees and youths I think that should help fuel a kind of advocacy and that would be important for supporting refugees amidst the ongoing crisis.

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research projects, please visit: <http://stmichaelshospitalresearch.ca/researchers/morton-beiser/>.

REFERENCES

1. Beiser M. A study of depression among tradition Africans, urban North Americans and Southeast Asian refugees. In Kleinman A, Good BJ (eds) *Culture and Depression*. Berkeley, CA: University of California Press, 1985. 272–98p.
2. Beiser M. *Strangers at the Gate: the “Boat People’s” First Ten Years in Canada*. Toronto, ON: University of Toronto Press, 1999. 214p.
3. Beiser M, Cargo M, Woodbury MA. A comparison of psychiatric disorder in different cultures: depressive typologies in Southeast Asian refugees and residential Canadians. *International Journal of Methods in Psychiatric Research*. 1994;4: 157–72.
4. Beiser M, Flemming JAE. Measuring psychiatric disorder among Southeast Asian refugees. *Psychological Medicine*. 1986;16(3): 627–39.
5. Beiser M, Hou F. Language acquisition, unemployment and depressive disorder among Southeast Asian refugees: a 10-year study. *Social Science and Medicine*. 2001;53(10):1321–34.
6. Beiser M, Johnson PJ, Turner RJ. Unemployment, underemployment and depressive affect among Southeast Asian refugees. *Psychological Medicine*. 1993;23(3): 731–43.
7. Neuner F, Schauer M, Klaschik C, Karunakara U, Elbert T. A comparison of narrative exposure therapy, supportive counseling and psychoeducation for treating posttraumatic stress disorder in an African refugee settlement. *Journal of Consulting and Clinical Psychology*. 2004; 72(4): 579–587.
8. Schauer M, Neuner F, Elbert T. *Narrative exposure therapy - A short-term treatment for traumatic stress disorder*. Cambridge, MA: Hogrefe Publishing, 2011. 112p.
9. Robjant K, Fazel M. The emerging evidence for narrative exposure therapy: A review. *Clinical Psychology Review*. 2010; 30(8): 1030–1039.
10. Schaal S, Elbert T, Neuner F. Narrative exposure therapy versus interpersonal psychotherapy. *Psychotherapy and Psychosomatics*. 2009; 78(5): 298–306.
11. Ruf M, Schauer M, Neuner F, Catani C, Schauer E, Elbert T. Narrative exposure therapy for 7 to 16-year olds: A randomized controlled trial with traumatized refugee children. *Journal of Traumatic Stress*. 2010; 23(4): 437–445.

On the Interrelationship Between Global and Public Health and a Healthy Environment: A Discussion with Professor Linda Selvey

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ABSTRACT

Dr. Linda Selvey is currently associate professor in the School of Public Health at Curtin University in Perth, Australia. She is not only a renowned Public Health physician but also has a PhD in Immunology. Her remarkable career includes projects and campaigns around the globe, encompassing countries such as Australia, Nepal, India, the Philippines and Liberia [1,2]. More recently, she was involved in the response to the Ebola epidemic and worked for the World Health Organization as a Field Coordinator for the Montserrado County in Liberia [3].

In the early 1980s she became an active environmentalist and is particularly passionate about climate change and its health implications. She has been involved in many environmental campaigns and between 2009 and 2011 she was CEO of Greenpeace Australia Pacific. Based on her huge experience in both global (and public) health and medicine, she often emphasizes on the strong links between environmentalism and health advocacy. These are going to be discussed in the interview below, including useful advice for medical students interested in global and public health.

RÉSUMÉ

Dre Linda Selvey travaille actuellement comme professeure agrégée au sein de l'École de santé publique de l'Université Curtin à Perth, en Australie. Détentrice d'un doctorat en immunologie, son travail en santé publique se distingue par de nombreux projets internationaux l'ayant menée dans divers pays, y compris l'Australie, le Népal, l'Inde et les Philippines. Elle a également récemment participé aux efforts de contrôle et d'éradication de l'Ebola au Liberia en tant que coordinatrice sur le terrain pour l'Organisation mondiale de la Santé [1-3].

Depuis les années 1980, Dre Selvey a une passion pour le changement climatique et ses effets parfois délétères sur l'homme et la santé publique. Cet intérêt s'est traduit entre autres par plusieurs campagnes pour l'environnement, allant jusqu'à siéger comme PDG de Greenpeace pour la région Australie Pacifique. S'établissant sur de longues années d'expérience, Dre Selvey préconise aujourd'hui une surveillance étroite entre la santé publique et l'environnement. C'est avec cela en tête que nous nous sommes entretenues avec Dre Selvey. Cet entretien comprend entre autres des recommandations pour les étudiants en médecine qui s'intéressent à la santé publique.

PLEASE DESCRIBE YOUR CURRENT ROLE.

I am currently an Associate Professor in the School of Public Health at Curtin University. In this role I teach postgraduate students about the epidemiology of infectious diseases as well as the public health response to climate change. I also do research, predominantly in the infectious diseases area. I also have a few voluntary roles including National Convenor of The Wilderness Society Ltd, which is one of Australia's national environmental

Keywords: Interview; Global Health; Public Health; Environment

organisations and am also president-elect of the Australasian Faculty of Public Health Medicine.

WITHIN THE PAST DECADES YOU CONTRIBUTED SIGNIFICANTLY TO THE FIELDS OF PUBLIC AND GLOBAL HEALTH. IS THERE ANYTHING YOU ARE SPECIFICALLY PROUD OF?

I'm proud of my contribution to controlling the Ebola epidemic in

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Liberia. I was working with colleagues in the World Health Organization and other organizations to develop and implement better triage processes in private health facilities to minimize the risk of Ebola transmission in health care facilities [3]. In relation to climate change, I would like to highlight the development and teaching of a unit within the Master of Public Health Program at Curtin University called the Public Health Response to Climate Change. Over the past 3 years I've witnessed a transformation of a number of students from more passive observers of climate change to passionate advocates, which is something that the world needs more of.

YOU SPENT A LOT OF TIME ON MEDICAL RESEARCH, AMONGST OTHERS AS A POST-DOCTORAL FELLOW AT THE NATIONAL INSTITUTE OF HEALTH IN THE UNITED STATES. WHY DID YOU CHOOSE TO TRANSITION TO PUBLIC HEALTH?

When I was at the NIH I lived in Washington D.C. At that time (in the early 1990s), there were a lot of people living in poverty in Washington D.C., and these people were predominantly African American. I found it impossible to live there without making some contribution to solving this problem and addressing the obvious racism that led to this position. I therefore became very active in a local neighbourhood where there were a lot of issues with crack cocaine, unemployment and overcrowded housing. It also was a neighbourhood in which the residents were predominantly friendly, open and very welcoming. I started out volunteering for a local organization there and ended up moving there. This, plus a number of other connections I made and social justice activities I was involved in, led me to the conclusion that I was more interested in having a job in which I could influence such social issues, so I decided to return to Australia and study public health.

WHAT WAS THE HIGHLIGHT OF YOUR CAREER SO FAR?

That's a difficult question. I think that there have been many highlights. Obviously being CEO of Greenpeace Australia Pacific was a huge privilege, and I got to work with some amazing people on issues that are so critical to the future of the planet. I also feel that the 13 years I spent at Queensland Health was a great opportunity to make a difference.

WOULD YOU TELL US MORE ABOUT YOUR TIME AS CEO AT GREENPEACE AUSTRALIA PACIFIC?

It was quite challenging to move from a senior position in government to becoming CEO of an activist organization. I got to work with some incredible people in Australia and the Pacific as well as throughout the world. Not long after I started at Greenpeace we had to face the tremendous defeat of the United Nations Framework Convention on Climate Change (UNFCCC) meeting in Copenhagen, which failed to deliver a much-needed global agreement

on action on Climate Change. The UNFCCC meets once a year as the Conference of the Parties (COP), in which world leaders are invited to attend. In 2009, world leaders gathered with the possibility that the outcome would be a binding agreement on limiting carbon emissions. There were very high expectations of the outcome of this particular COP meeting from climate change advocates and the general public. However, when the COP failed to deliver a binding agreement it was clear that a lot of momentum was lost from the international processes and that it would be some time before it was possible to have another opportunity for a binding agreement. Greenpeace, who had been advocating for action on climate change since the early 1990s like many other climate activist organizations, had known that the meeting may not result in a binding agreement, but still invested a lot of time and energy into trying to make this happen. The failure of the talks, given how critical it was to cut emissions quickly, meant that we had to have a rethink about the best way to achieve action for a safe climate. This led us and many other climate change activist organizations to really question our strategies. It was a very sad time of much soul-searching.

The highlight of my time at Greenpeace would have to be when Australia introduced a price on carbon. We really felt that we were starting to make a difference and that Australia would start to restructure its economy to phase out fossil fuels. Now we've gone backwards, but one thing is for sure – none of us can afford to give up, nor would we want to; there is too much at stake.

TELL US MORE ABOUT YOUR FIRST CONTACT WITH ENVIRONMENTAL PROBLEMS?

I became aware of environmental issues at a relatively young age because my father was very passionate about the environment. I grew up in Darwin in tropical Australia and there used to be coral just off the coast where we would snorkel. Sadly, the local council graded the side of the road and the tropical monsoon rain washed a huge amount of mud into the sea, killing the coral. My father made a huge fuss, but it was too late. Then when I was 14 years old, Darwin was devastated by a massive tropical cyclone and we lost our house, as did most people in Darwin. The city went from being a lush tropical landscape to one bereft of trees. Thus I got to see first-hand the devastating impacts of climate-related extreme events.

WHAT LINKS DO YOU SEE BETWEEN ENVIRONMENTALISM AND HEALTH ADVOCACY?

Human health is closely linked to the health of our natural environment, although these links aren't always obvious to see. In addition, our civilization and health are dependent on a stable climate, something that we have now irreversibly impacted. Therefore, our health will continue to suffer and we need to

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protect our climate not just to protect our natural environment but also our own health. I've also learned a lot about health advocacy from my work in advocacy for protection of the environment as well as the other way around. We can use similar tools and learn from each other in order to be more effective. Both public health advocacy and advocacy to protect our natural world and our climate are advocating for similar changes to our economic and social systems, and therefore our advocacy can be synergistic.

DO YOU THINK HEALTH PROFESSIONALS HAVE A SPECIAL RESPONSIBILITY IN REGARD TO RAISE THE AWARENESS OF CLIMATE CHANGE AND ENVIRONMENTAL PROBLEMS?

Yes, health professionals play a key role because we're trusted members of the community and we have a responsibility to protect the health of the community. We cannot do this without ensuring that climate change and environmental problems are kept in check. As long as the community see climate change as an environmental issue, in which the only people calling for change are 'radical environmentalists,' we won't succeed in getting governments to take meaningful action. Health professionals have a critical role to play here, as a trusted voice, advocating for the health of the community and also providing a voice for change beyond the environmental movement.

DURING YOUR POSITIONS AS CEO AT GREENPEACE AUSTRALIA PACIFIC AND AS DIRECTOR OF COMMUNICABLE DISEASES AND EXECUTIVE DIRECTOR PUBLIC HEALTH IN QUEENSLAND YOU WERE IN CHARGE OF HUGE TEAMS. WHAT CHARACTERIZES A GOOD LEADER FOR YOU?

A good leader is someone who can inspire, mentor and support individuals (including staff) to work together towards a common goal. A good leader also is clear about the strategic direction – where we want to go and has a vision for how to get there. A good leader is also an effective advocate and is able to build relationships and alliances with others in order to achieve their goals. Was I a good leader according to these criteria? Well, probably some of the time but I would have loved to have been even better at it.

HOW IS IT POSSIBLE TO ACHIEVE A GOOD WORK-LIFE BALANCE BEING INVOLVED IN SO MANY DIFFERENT PROJECTS?

That's a difficult question. My partner would say that I don't have a good work-life balance, but I feel as though it is not too bad most of the time. I enjoy life and I enjoy lots of great relationships with other people, which I really value. I try and be very organized, I make sure I get plenty of exercise and I eat well and I have a strong friendship network that keeps me engaged in things other than what I'm focused on. I try and build social ac-

tivities into my week to make sure that I stop working and spend time with other people.

WHAT WAS THE BIGGEST CHALLENGE OF YOUR CAREER SO FAR?

That's difficult to say. I think I've taken my own advice and have moved with the opportunities and followed my heart (which is how I ended up in Perth). I don't consider my career to be linear and I'm not particularly focused on promotions or accolades. I just try to enjoy myself and do things that I think will make a difference. If it doesn't seem to be working for me, I switch to something else!

DURING THE LAST TWO DECADES, YOU VISITED VARIOUS COUNTRIES SUCH AS INDIA, NEPAL AND LIBERIA. WHAT WAS THE MOST IMPRESSIVE EXPERIENCE YOU HAD DURING YOUR TRAVELS?

In all of those countries the standout from my experiences has been the opportunity to work with and learn from people with different life experiences and cultures. It is great to work together in a team with others who are working towards a common goal and yet have so many different skills and experiences to draw from. For me it is always about the people.

WHAT ARE THE BIGGEST GLOBAL CHALLENGES FACING HUMANITY AND OUR PLANET IN THE NEXT YEARS?

Oh, that's an easy one. Climate Change is the biggest global challenge. We are now getting very close to being committed to global average temperature rises of at least 2 degrees Celsius and this will result in a dramatically different planet to the one we're on with more severe storms, floods and droughts, not to mention heat waves and challenges to our natural systems. To add to that, we're rapidly destroying biodiversity and losing forests, grasslands and other important habitats at an incredible rate. Humanity's greatest challenge is humanity itself and the only solution is a drastic change in how we behave and how we organize our societies.

WHAT ADVICE WOULD YOU GIVE MEDICAL STUDENTS INTERESTED IN PUBLIC OR GLOBAL HEALTH?

Go for it! My career has been one of taking opportunities as they arise rather than necessarily following a clear career path. There are lots of changes ahead in the world and we need to be ready to seize opportunities as they arise and contribute where our skills are best needed. Public and global health are very rewarding areas, particularly if you like the big picture and enjoy working with a wide variety of other people.

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REFERENCES

1. Selvey LA, Wells RM, McCormack JG, Ansford AJ, Murray K, Rogers RJ, et al. Infection of humans and horses by a newly described morbillivirus. *Med J Aust.* 1995;162(12):642–5.
2. Murray K, Selleck P, Hooper P, Hyatt A, Gould A, Gleeson L, et al. A morbillivirus that caused fatal disease in horses and humans. *Science.* 1995;268(5207):94–7.
3. Nyenswah T, Massaquoi M, Gbanya MZ, Fallah M, Amegashie F, Kenta A, et al. Initiation of a ring approach to infection prevention and control at non-Ebola health care facilities - Liberia, January-February 2015. *MMWR Morb Mortal Wkly Rep.* 2015;64(18):505–8.

Preventing the Tragedy of Suicide Among Indigenous People in Canada: Physician Advocacy Through the Training Pipeline and Beyond

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ABSTRACT

For decades, Canada's Indigenous populations have experienced high rates of suicide relative to the general population. This commentary suggests that suicide among Indigenous people cannot be explained solely through the causal effects of downstream determinants of health; upstream health determinants such as Canada's colonial past and cultural continuity are equally, if not more, instructive in understanding the tragedy that is taking place in many Indigenous communities across Canada. Medical trainees and physicians can contribute to improvements in Indigenous health by advocating for culturally safe healthcare access and research, as well as Indigenous-oriented medical training.

RÉSUMÉ

Pendant des décennies, les populations autochtones au Canada ont connu des taux élevés de suicide comparativement à la population générale. Ce commentaire suggère que le suicide chez les personnes autochtones ne peut être expliqué uniquement par les effets causaux des déterminants de la santé « en aval » ; les déterminants de la santé « en amont », tels le passé colonial du Canada et la continuité culturelle, sont tout aussi, sinon plus importants pour comprendre la tragédie se déroulant dans plusieurs communautés autochtones à travers le Canada. Les médecins et étudiants en médecine peuvent contribuer à l'amélioration de la santé autochtone en plaidant pour de la recherche et un accès aux soins de santé qui sont culturellement sécuritaires, et pour des formations médicales axées sur la santé autochtone.

INTRODUCTION

In April 2016, Attawapiskat First Nation of Northern Ontario declared a state of emergency in response to a spate of suicide attempts since the fall of 2015. Just one month earlier, Pimicikamak Cree Nation (Cross Lake) of Northern Manitoba also declared a state of emergency following the suicides of six community members since December 12, 2015. Both tragedies have brought renewed – and much needed – attention to what the National Chief of the Assembly of First Nations, Perry Bellegarde, has characterized as a suicide epidemic experienced by Indigenous communities across Canada [1]. Despite headlines that might suggest otherwise, this epidemic is nothing new. For decades, Canada's Indigenous people – the First Nations, Métis and Inuit, each having unique traditional territories, cultural practices, languages and histories – have experienced high rates of suicide relative to the general population. The 1998 Royal Commission of Aboriginal Peoples noted that the suicide rate of Indigenous Canadians was three times that of non-Indigenous people [2]. The suicide rate among Indigenous youth is particularly alarming, accounting for more than one-third of mortality [3]. Recent data suggests First Nations youth commit suicide five to six times more often than non-Indigenous youth [4]. Inuit youth experience a suicide rate 11 times the national average; this is among the highest rates in the world [4]. More generally, 29% of Inuit people have attempted suicide at least once in their lifetime [5].

Keywords: Indigenous Population; Health Services, Indigenous; Patient Advocacy; Education; Medical

Suicide is the result of a complex interplay of personal, community, social, political and historical realities [3]. It is therefore important to understand suicide within the context of both individual risk factors and the broader psychosocial health of a population [3]. Suicide is a tragic response by too many Indigenous Canadians – particularly youth – to social, economic and political inequities, as well as the seemingly ineluctable effects of intergenerational trauma caused by colonial policies. This commentary argues that suicide among Indigenous people is a tragedy that cannot be explained solely through the causal effects of downstream determinants of health. Upstream health determinants such as Canada's colonial past and cultural continuity are equally, if not more, instructive in understanding what is taking place in many Indigenous communities across Canada. Physicians and medical trainees can contribute to improvements in Indigenous health by advocating for culturally safe healthcare access and research, as well as Indigenous-oriented medical training.

DOWNSTREAM DETERMINANTS OF HEALTH: INDIVIDUAL RISK FACTORS AND PROTECTIVE FACTORS

The immediate causes of suicide are attributable to the effects of downstream determinants of health. These determinants include individual-level risk factors and protective factors that influence one's health outcomes such as physical environments, developmental experiences, alcohol and substance abuse, socio-

economic status, education and access to healthcare. Poor mental health is a leading individual risk factor for suicide. Suicide by adolescents and young adults often occurs in the setting of affective disorders such as major depressive disorder and bipolar disorder [3]. Individuals are particularly vulnerable to suicide in cases of substance abuse – most notably alcohol use [6]. Indigenous youth are two to six times more likely to suffer from alcohol-related problems than non-Indigenous Canadians [7]. Compared to their non-Indigenous counterparts, Indigenous youth are more likely to use illegal drugs and to begin using these substances at an earlier age [7]. Other risk factors include suicide of family members or friends, previous physical or sexual abuse, social isolation, poverty and unemployment [3]. Suicide rates are highest in Indigenous adolescents who have physical illnesses, have previously attempted suicide, have a history with the criminal justice system or have lived in multiple home placements [3]. On the contrary, individual protective factors preventing suicide include good physical and mental health, self-esteem, future orientation, peer support and coping skills [3,8].

Individual downstream health determinants are important to consider when identifying Indigenous people at risk of committing suicide, but they are not enough to single-handedly explain high rates of suicide among Indigenous people. While non-Indigenous populations also have many of the same individual risk factors for suicide, these risk factors are more prevalent among Indigenous people as a result of broader social and historical pressures – namely the legacies of colonialism and acculturation policies imposed by Canadian political and social institutions [3,9].

UPSTREAM DETERMINANTS OF HEALTH: INDIGENOUS HEALTH AS A NEXUS OF HISTORY, POLITICS AND CULTURE

In trying to understand high levels of suicide among Indigenous people, it is important to explore the role of historical, political and cultural factors on overall health. Upstream health determinants are the overlying influences that largely determine the health status of a particular population. Upstream determinants set the context within which downstream determinants can be understood. From an Indigenous health perspective, upstream determinants include Canada's colonial history, past and present government policies such as the residential school system, self-determination and cultural continuity [10,11]. The World Health Organization contends that the colonization of Indigenous peoples is a fundamental health determinant [10]. In Canada, colonization led to "cultural genocide" of Indigenous people through institutional racism, land dispossession, family separations, residential schools and the widespread intergenerational trauma affected by these systems.

The cultural genocide of Indigenous people is linked to the dis-

ease burden and higher rates of violence and early death faced by these individuals [3,11,12]. Today, Indigenous people have a higher risk of committing suicide relative to non-Indigenous people due to acculturation stress and cultural marginalization [3]. Many individuals struggle to acquire Indigenous values, while failing to connect with the dominant values of Western society. Indigenous people also experience higher rates of chronic disease, fatal accidents and overall mortality compared to non-Indigenous populations [13]. Indigenous people are more likely to report respiratory problems and unhealthy behaviours like smoking and drinking; they also suffer from higher rates of obesity and diabetes and have less access to safe, secure and nutritious food [13]. While direct causal links to suicidality and poor health outcomes are challenging to confirm, it is important to outline the potential multi-generational impact of upstream determinants such as the residential school system on the health status of Canada's Indigenous population today.

Cultural continuity is an important upstream determinant of Indigenous health. It is defined as a community's sense of its own historical continuity and identity, and has traditionally been solidified through intergenerational bonds forged by close families and vibrant traditions [3,14]. In many Indigenous communities, cultural continuity has been challenged by government policies such as the residential school and child welfare systems. These policies have interrupted the transmission of culture – a practice that has sustained the threads of healthy Indigenous societies for thousands of years [3]. Today, residential school survivors and their families are at high risk of experiencing depression, suicidal ideation and suicide attempts [3]. Conversely, low rates of suicide within certain First Nations communities in British Columbia have been linked to conditions that promote cultural continuity such as land title, self-government and control over health, education and social programs [14]. Communities with three or more protective factors experienced suicide rates of approximately 2/100,000; the numbers were much grimmer in the absence of protective factors: nearly 138/100,000 [14].

CHAMPIONING INDIGENOUS HEALTH AND WELLBEING: WHAT CAN PHYSICIANS AND MEDICAL TRAINEES DO?

In helping to improve Indigenous health outcomes, physicians and medical trainees can lead the development of prevention-based solutions to the epidemic of suicide among Indigenous people. The complexity of this tragedy means that a broad scope of stakeholders must develop tangible prevention strategies at both the policy and community levels. There is a pressing need for more investments that will enable young people to access critical social services, as well as meaningful education, employment and recreation opportunities. As front-line care providers, physicians bear witness to the health challenges and spirited resiliency of Indigenous people. Physicians are health advocates

and therefore share a responsibility to champion the causes of marginalized populations in both urban and rural settings [15]. Advocacy means fighting for appropriate and timely access to culturally safe healthcare services. In light of historical oppression, many Indigenous people approach Western medicine with understandable caution. Cultural safety aims to mediate Indigenous peoples' interactions with healthcare and government services by acknowledging inherent inequities and power differentials. Culturally safe healthcare provision recognizes the social, political and historical context of accessing care and ensures that Indigenous people define safe healthcare on their own terms [16]. Physicians must recognize that health and wellbeing are equal parts spiritual, mental, physical and emotional; this is demonstrated in the four quadrants of the medicine wheel [17]. In acknowledging the importance of the wheel, physicians can better respect traditional beliefs and healing practices, as well as refrain from enforcing their own values on Indigenous patients. While not all physicians will promote cultural safety on a system-wide basis, they can deliver healthcare using this approach to ensure their own interactions with Indigenous patients are culturally appropriate and supportive.

Indigenous communities need to see more investments in evidence-based suicide prevention and treatment strategies. For instance, flying patients with suicidal ideation or previous suicide attempts from remote communities to distant tertiary care centres to receive short courses of mental health treatment is not a long-term solution. Physicians can contribute to the development and implementation of evidence-based strategies that emphasize the role of the upstream determinants of health in improving community health and wellbeing. Furthermore, health research should be rooted in culturally safe ethical guidelines and should foster collaboration with Indigenous groups. Ownership, Control, Access and Possession (OCAP) is an example of a research model in which Indigenous people have direct ownership and control over research knowledge about their communities. OCAP is inherently linked to the self-determination and cultural preservation of Indigenous people [18]. Community-based participatory research is another model in which studies are undertaken alongside research subjects with the end goal of promoting equitable social change [19]. At the policy level, Canada requires stronger research infrastructure to ensure important evidence is disseminated and translated into action. The creation of the National Collaborating Centre for Aboriginal Health by the Government of Canada in 2005 was a step in the right direction. This organization collaborates with researchers and clinicians to translate knowledge on what works into action. Unfortunately, other important Indigenous health organizations that espouse Indigenous research ethics, including the Aboriginal Healing Foundation and the National Aboriginal Health Organization, have seen their funding terminated in recent years [11].

Cultural safety and consensus are Indigenous values inherent to the CanMEDS "Medical Expert" role [15]. Indigenous medical education is improving across Canada, however most students are still not exposed to Indigenous health topics over the long term. At the medical school level, physicians and students can advocate for more training of Indigenous healthcare workers. Indigenous healthcare workers are often best prepared to provide culturally safe healthcare to other Indigenous people [20]. Indigenous Canadians are sorely underrepresented in Canada's healthcare workforce. They make up approximately 4.3% of the national population, but only 0.25% of its physicians [21,22]. The Canadian Federation of Medical Students (CFMS) has responded to this problem by endorsing several strategies to improve medical trainees' exposure to Indigenous health issues. Among these, the CFMS recommends that medical schools increase the recruitment of Indigenous students through a targeted, culturally safe, and comprehensive pipeline approach; implement mandatory, culturally safe Indigenous health curricula and experiential learning into medical training; and increase accountability to local Indigenous communities through meaningful engagement [23]. By actualizing these practices, Canadian medical schools will train more physicians – both Indigenous and non-Indigenous – who respect Indigenous ways of knowing and who actively promote cultural safety in clinical practice and research.

CONCLUSION

High suicide rates in many Canadian Indigenous communities are an indicator of poor health and social outcomes rooted in upstream determinants of health. While suicide among Indigenous peoples are a result of the interplay between downstream health determinants that manifest as individual risk factors and protective factors, it is important to explore the links between suicide and historical inequalities that have negatively affected the broader health status of Indigenous people. Physicians and medical trainees have a responsibility to advocate for improved Indigenous health and wellbeing by recognizing the causal effects of both downstream and upstream determinants of health and by taking action at both ends of the stream.

REFERENCES

1. Puxley C. AFN top chief Perry Bellegarde calls for national suicide strategy. [Internet]. Location. The Globe and Mail. [updated: 2016 Mar 11; cited 2016 Mar 12]. Available from: <http://www.theglobeandmail.com/news/national/afn-national-chief-perry-bellegarde-calls-for-national-suicide-strategy/article29187806/>.
2. Aboriginal Affairs and Northern Development Canada. Royal Commission on Aboriginal Peoples [Internet]. Ottawa (ON): Government of Canada; 2011 [updated: 2016 Jan 12; cited 2016 Feb 20]. Available from: <http://www.aadnc-aandc.gc.ca/eng/1307458586498/1307458751962>.
3. Kirmayer LJ, Brass GM, Holton T, Paul K, Simpson C, Tait C. Suicide among Aboriginal people in Canada [Internet]. Ottawa (ON): The Aboriginal Healing Foundation; 2007 [cited 2016 Feb 20]. Available from: <http://www.ahf.ca/downloads/suicide.pdf>.
4. Health Canada. First Nations and Inuit health: mental health and wellness

Commentary

- [Internet]. Ottawa (ON): Health Canada; 2015 Jan 27 [cited 2016 Feb 22]. Available from: <http://www.hc-sc.gc.ca/fniah-spnia/promotion/mental/index-eng.php>.
5. Galloway T, Saudny H. Inuit health survey 2007-2008: Nunavut community and personal wellness [Internet]. Montreal (QC): McGill University Centre for Indigenous Peoples' Nutrition and Environment; 2012 [cited 2016 Feb 15]. Available from: <http://www.inuitknowledge.ca/sites/naasautit/files/attachments/2008CommunityPersonalWellness-nunavut.pdf>.
 6. Turecki G. Dissecting the suicide phenotype: The role of impulsive-aggressive behaviours. *J Psychiatry Neurosci*. 2005;30(6): 398–408.
 7. Currie J. Best Practices: Treatment and Rehabilitation for Youth with Substance Abuse Problems [Internet]. Ottawa (ON): Minister of Public Works and Government Services; 2001 [cited 2016 Feb 25]. Available from: <http://www.hc-sc.gc.ca/hc-ps/pubs/adp-apd/youth-jeunes/index-eng.php>.
 8. Pharris MD, Resnick MD, Blum RW. Protecting Against Hopelessness and Suicidality in Sexually Abused American Indian Adolescents. *J Adolesc Health*. 1997; 21(6): 400–406.
 9. Borowsky IW, Resnick MD, Ireland M, Blum RW. Suicide Attempts Among American Indian and Alaska Native Youth: Risk and Protective Factors. *Arch Pediatr Adolesc Med*. 1999; 153(6): 573–580.
 10. World Health Organization Commission on Social Determinants of Health. Social determinants and Indigenous health: the international experience and its policy implications [Internet]. Geneva: World Health Commission; 2007 [cited 2016 Feb 22]. Available from: http://www.who.int/social_determinants/resources/indigenous_health_adelaide_report_07.pdf.
 11. Truth and Reconciliation Commission. Honouring the Truth, Reconciling for the Future: Summary of the Final Report of the Truth and Reconciliation Commission of Canada [Internet]. Winnipeg (MB): Truth and Reconciliation Commission; 2015 [cited 2016 Feb 22]. Available from: http://www.trc.ca/websites/trcinstitution/File/2015/Exec_Summary_2015_06_25_web_o.pdf.
 12. Reading C, Wien F. Health Inequalities and Social Determinants of Aboriginal Peoples' Health [Internet]. Prince George (BC): National Collaborating Centre for Aboriginal Health; 2013 [cited 2016 Feb 20]. Available from: http://www.nccah-cnca.ca/Publications/Lists/Publications/Attachments/46/health_inequalities_EN_web.pdf.
 13. Statistics Canada. Select Health Indicators of First Nations People Living Off Reserve, Métis and Inuit [Internet]. Ottawa (ON): Statistics Canada; 2013 [cited 2016 March 10]. Available from: <http://www.statcan.gc.ca/pub/82-624-x/2013001/article/11763-eng.htm>.
 14. Chandler MJ, Lalonde C. Cultural Continuity as a Hedge Against Suicide in Canada's First Nations. *Transcult Psychiatry*. 1998; 35(2): 191-219.
 15. Royal College of Physicians and Surgeons of Canada. CanMEDS [Internet]. Ottawa (ON): Royal College of Physicians and Surgeons of Canada; 2014 [cited 2016 Feb 20]. Available from: <http://www.royalcollege.ca/portal/page/portal/rc/canmeds>.
 16. IPAC-AFMC. Summary of Admissions and Support Programs for Indigenous Students at Canadian Faculties of Medicine [Internet]. Indigenous Physicians Association of Canada and Association of Faculties of Medicine of Canada; 2008 [cited 2016 Feb 20]. Available from: https://www.afmc.ca/pdf/IPAC-AFMC_Summary_of_Admissions_&_Support_Programs_Eng.pdf.
 17. Macauley A. Improving Aboriginal Health: How Can Health Care Professionals Contribute? *Can Fam Physician*. 2009; 55(4): 334–336.
 18. First Nations Information Governance Centre. The First Nations Principles of OCAP® [Internet]. Ottawa (ON): First Nations Information Governance Centre; 2016 [cited 2016 Feb 28]. Available from: <http://fnigc.ca/ocap.html>.
 19. Participatory Research at McGill. PRAM [Internet]. Montreal (QC): McGill University; 2016 [cited 2016 Feb 20]. Available from: <http://pram.mcgill.ca/>.
 20. Canadian Medical Schools Struggle to Recruit Aboriginal Students. *Healthy Debate* [Internet]. 2013 May 2 [cited 2016 Feb 27]. Available from: <http://healthydebate.ca/2013/05/topic/quality/recruitment-of-aboriginal-health-care-workers>.
 21. Statistics Canada. Aboriginal Peoples in Canada: First Nations People, Métis and Inuit [Internet]. Ottawa (ON): Statistics Canada; 2015 [cited 2016 Feb 20]. Available from: <https://www12.statcan.gc.ca/nhs-enm/2011/as-sa/99-011-x/99-011-x2011001-eng.cfm>.
 22. Anderson M, Lavallee B. The Development of The First Nations, Inuit and Métis Medical Workforce [Internet]. *Med J Aust*. 2007 [cited 2016 Feb 20];186 (10):539-540. Available from: <https://www.mja.com.au/journal/2007/186/10/development-first-nations-inuit-and-m-tis-medical-workforce>.
 23. Arkle M, Deschner M, Giroux R, Morrison R, Nelson D, Sauve A, Singh K. Indigenous peoples and health in Canadian medical education CFMS position paper [Internet]. Canadian Federation of Medical Students; 2015 [cited 2016 Feb 20]. Available from: <http://www.cfms.org/attachments/article/163/2015%20Indigenous%20Peoples%20and%20Health%20in%20Medical%20Education.pdf>.

The War on Language: Providing Culturally Appropriate Care to Syrian Refugees

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ABSTRACT

Ontario's Ministry of Health and Long-Term Care released a document in January 2016 regarding medical care of Syrian refugees as an effort to support primary care providers in the care and early assessment of their new patients [1]. The fourteen-page document provides an overview of the transition to Ontario medical care, from the Immigration Medical Examination prior to the refugee's entry into Canada, to health insurance coverage resources and information [1]. Health care providers may welcome this plethora of information, but the presence of a language barrier may prove to be the most considerable issue.

RÉSUMÉ

En janvier 2016, le ministère de la Santé et des Soins de longue durée de l'Ontario a publié un document au sujet des soins médicaux pour les réfugiés syriens, pour appuyer les fournisseurs de soins primaires lorsqu'ils soignent et effectuent l'évaluation initiale de leurs nouveaux patients [1]. Le document de quatorze pages fournit un survol de la transition vers les soins de santé ontariens, allant de l'examen médical aux fins d'immigration précédant l'entrée du réfugié au Canada, à de l'information sur les régimes d'assurance-maladie [1]. Les professionnels de la santé recevront sans doute favorablement cette abondance d'information, mais la présence d'une barrière linguistique pourrait se révéler comme étant le problème le plus substantiel.

INTRODUCTION

By the end of February 2016, Canada is expected to have welcomed 25,000 Syrian refugees across the country [2]. Ontario's Health Minister, Eric Hoskins, has claimed that the province will resettle 10,000 refugees, with many in the Greater Toronto Area [3]. Furthermore, nearly 6,000 will end up in Quebec, according to Quebec's Immigration Minister, Kathleen Weil [3]. With over 9,000 Syrian refugees to relocate in six of the eight remaining provinces (British Columbia, Manitoba, Alberta, Nova Scotia, Saskatchewan, and New Brunswick, to date), it is reasonable to expect that many health care providers in Canada will have a part in ensuring the health of our newest residents [2].

The current clinical guidelines for immigrants and refugees come from an article published in the Canadian Medical Association Journal (CMAJ) in 2011 [4]. The comprehensive article relates to topics on infectious diseases, mental health and maltreatment, chronic and non-communicable diseases, and women's health [4]. In December 2015, an unedited article was posted on the CMAJ website in response, highlighting the need for a relevant and specific resource for health care providers treating Syrian refugees [5]. The government of Ontario has since provided such a resource, with references to both CMAJ articles, as well as the European Centre for Disease Prevention and Control (ECDC), in an effort to support primary care providers in the early assessment and care of Syrian refugees welcomed to their practice [1, 4-6]. These documents, comprising the CMAJ articles, the gov-

ernment of Ontario package and ECDC resources, address many noteworthy topics, including post-traumatic stress disorder, contraception, and vision health, but unfortunately a lack of advice regarding transmission of information [1,4-6]. The issues stemming from a language barrier undoubtedly have a marked impact both on refugees, and health care providers who are unable to communicate with their new patients [7]. As such, the impact of the language barrier on consent and confidentiality, quality of care, and patient-physician relationship requires further discussion.

THE EFFECTS OF THE LANGUAGE BARRIER

The language barrier is a well-known issue in providing effective health care, and one that is especially relevant in the wake of welcoming the Syrian refugees [8]. Language barriers are experienced by both new and long-term immigrants due to difficulty in describing symptoms using the English language, as well as understanding English instructions from the physician [8]. These difficulties may cause delays in accessing health promotion programs, such as getting the flu shot [8], and can also lower odds of contacting a variety of health care providers, such as an optometrist [7,9]. Recent immigration contributes to a more pronounced reduction in Canadian immigrants initially accessing care due to communication difficulties, but language continues to be detrimental to health care delivery even after care is sought [9].

Keywords: Language Barrier; Refugees

Consent and Confidentiality

Consent and confidentiality are everyday occurrences in medical practice. In the circumstances where consent is to be obtained and confidentiality to be kept, many health care professionals may fail to meet current ethical standards when a language barrier is present [7]. A study by Schenker et al. (2007) found that inpatients who do not speak English are less likely to have informed consent documented for invasive procedures such as lumbar puncture, thoracentesis, and paracentesis [10]. The use of a professional interpreter may not be enough to overcome this issue; many interpreters are not highly qualified and most physicians are not trained on how to effectively work with them [11]. Furthermore, interpreter services may be avoided altogether due to difficulties in accessibility and adequacy [12]. When services for interpretation are not readily available or are declined, family and friends of the patient, or ad hoc interpreters, are often used in the interim, leading to a breach in privacy and confidentiality [13]. The topic of interpreter services brings up more than consent and confidentiality issues, particularly regarding quality of care.

Quality of Care

A lack of proper interpretation services can mean reduced timeliness and quality of care for a patient [14]. While most hospitals and in-hospital specialists have access to translation services, an initial referral from a primary care provider is required [14]. However, most providers outside of the hospital do not commonly offer translation services [14]. People who have limited language proficiency may therefore be without access to specialists in the health care system, precluding early detection and treatment of disease [14].

Ethnic and linguistic diversity in the geographic location of the newly settled refugee or immigrant can have a strong influence on utilization of and access to health care providers in the area, especially when the refugee or immigrant has limited knowledge of the official languages [14]. A study by Wang and Kwak (2014) identified transnational care seeking in a number of South Korean immigrants in Toronto, Ontario. Study participants preferred to access Korean-speaking family physicians through transnational ties due to shorter wait times, personal health beliefs, treatment expectations, and the availability of health insurance and services [8]. Participants discussed the most significant problem being the long wait time for diagnosis, treatment, and operation in Canada versus same-day service offered in South Korea [8]. Expectations regarding health services were also an issue, revealing that MRI, ultrasound, and mammography were routine procedures performed for an annual medical examination in South Korea [8]. Considering these motivations, the addition of a language barrier could decrease the likelihood that these pa-

tients would access English-speaking providers in Toronto [8,14]. The strategies used to overcome these issues ranged from receiving health information by phone or email from South Korea, importing medications from their home, or traveling to receive transnational medical care [8]. Some participants sought alternative care in Canada through practitioners of Chinese medicine, as they found it easier to communicate [8]. Cost remains an issue since these alternative practices, such as acupuncture, are not covered under the Ontario health plan [8]. Moreover, existing language barriers can further impact quality of care by stressing the relationship between the patient and provider.

The Relationship Between the Patient and Provider

Not only can language barriers affect overall quality of care, but there can also be a marked effect on the patient-provider relationship. Providers who do not speak the same language as the patient are viewed as less satisfactory, even when trained to work with, and accompanied by, a highly qualified interpreter [7,11]. Simply put, using a third party in the patient-provider interaction can have a negative impact [11]. Wang et al. (2008) found that study participants felt they could communicate more effectively with a provider who spoke the same language and have a better understanding of the diagnosis and instructions [14]. Perhaps the biggest gap in current practice is providing language access, despite knowing the effects of language barriers on immigrant and refugee health care.

CURRENT SITUATION

Part of addressing the problem with language barriers is being aware of their existence in the first place. However, the majority of working towards a solution comes from being proactive in the face of such an issue. There is an apparent absence of both motivation and resources to offer sufficient access to language services [11]. According to Gadon et al. (2006), physicians are aware of the need for language services, but little is being done about it [15]. The resource provided by the government of Ontario is available in both official languages of Canada. In an attempt to bridge the language barrier, a document translated to Arabic and two Kurdish dialects was released to provide information regarding health care options in Ontario for Syrian refugees [1]. However, the resources provided in the document are linked to websites that are only available in either English or French, and refugees are not provided with additional translated resources that are necessary for securing a family doctor or nurse practitioner [1]. While attempts are being made to address the language barrier, the question can be asked as to whether or not they are sufficient.

The healthy immigrant effect, an observed time where the health of immigrants is substantially higher than that of native-born in-

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habitants, remains an observation generally in recent immigrants and refugees but can be lost in as little as two years after arriving to a new country [16,17]. It seems that the effects of language barriers are worsening, as most immigrants are coming from locations where the language is profoundly different from those spoken in Canada [16]. Recent health outcome disparities were found within immigrant subgroups, most notably in refugee communities [18]. The need to address current language barriers has been recognized by physicians, but overcoming them using cost-effective strategies has proven difficult [15]. Recent cases have revealed the use of ad hoc interpretation instead of formal services due to cost effectiveness, availability, and the interpreter's understanding of the patient's culture [15]. Physicians in this same study voiced concern regarding the impact of language barriers on quality of care and patient safety, as well as an increased risk of malpractice [15]. As discussed, the most recent guidelines to support health care providers to practice in a culturally competent and appropriate way do not directly address language. Whether this is due to a lack of motivation, resources, or both, remains to be seen [11].

MOVING FORWARD

Perhaps the easiest piece of this puzzle is identifying the problems, but there are solutions that can be explored. The Purnell Model for Cultural Competence is a clinical assessment tool based on a multitude of theories and research, such as family development, psychology, anatomy, ecology, among many others (Figure 1) [19]. The model displays twelve domains that are related to and affected by each of the other domains, and has proven useful in planning strategies, developing assessment tools, and individualized interventions [19]. In fact, it has already been employed in the development of standards for the Oncology Nurses Society [19]. The model may also guide education strategies toward cultural practices, and administrative considerations in cultural issues among staff [19]. Research has also benefited from the model, assisting in conceptualizing research questions and the collection of demographic data [19]. Purnell's Guide to Culturally Competent Health Care was derived from the Purnell Model, and provides general and cultural specific knowl-

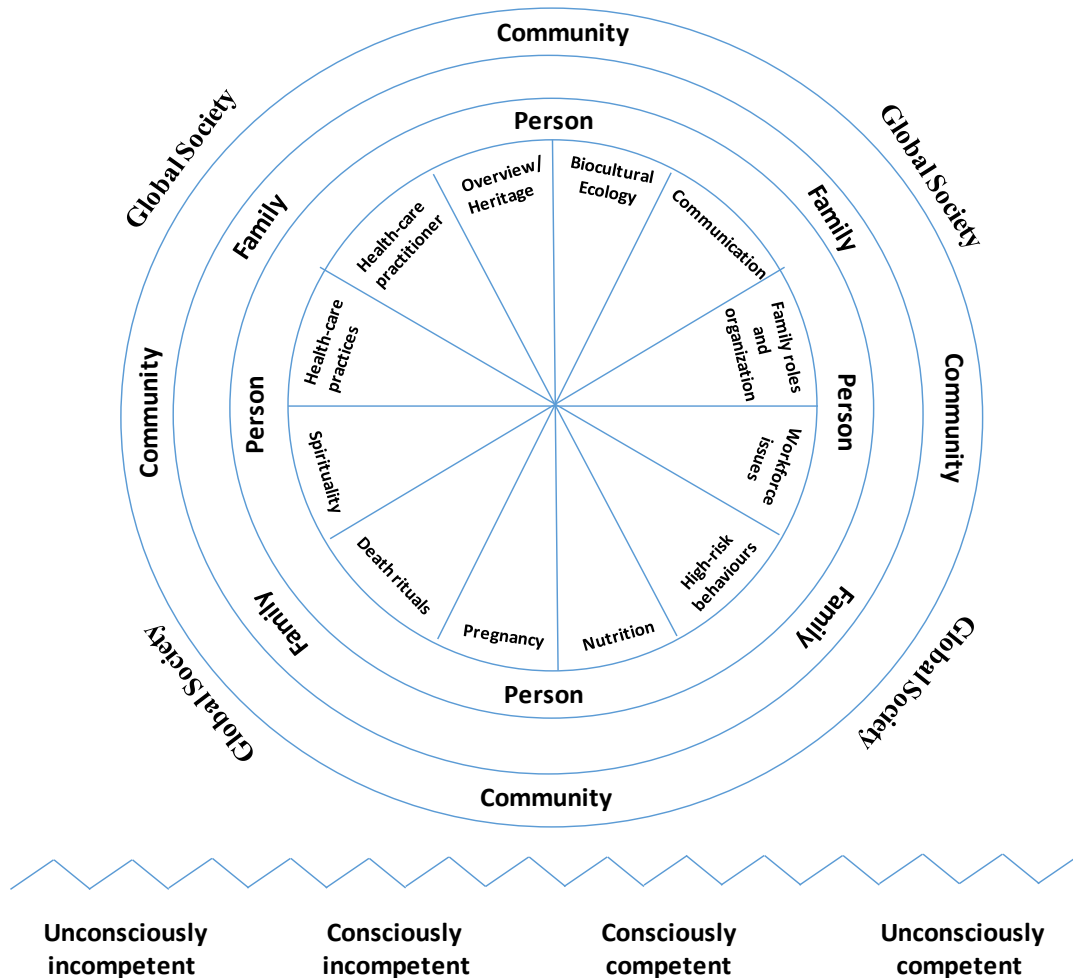


Figure 1: Purnell's Model for Cultural Competence [19].

Considerations for Interacting with Non-Official Language Speaking Patients

- Be alert to comments and behaviours from patients and family members that suggest they do not understand the provider.
- Create a system for interpretation.
- Compile a list of commonly used words in the dominant language of patients using the facility.
- Translate treatment plans and medication requirements into the languages of the patients who come to the facility.
- Translate pamphlets on common illnesses and diseases into the languages of the patients who come to the facility.
- Ensure that translated material is at grade 6 reading level.

Figure 2: Select considerations for the health care provider to contemplate when a language barrier is present in a clinical encounter, from Purnell's Guide to Culturally Competent Health Care [20].

edge to be contemplated by the health care provider [20]. **Figure 2** contains select considerations for use when a language barrier is present in a clinical encounter [20].

Additional recommendations on education, research, and interpreter services, sampled from a comprehensive report published by Health Canada in 2001 to address language barriers in health care, may be considered as potential future steps [7]. Facilitating Canadian licensing procedures for international medical graduates is a consideration to increase the amount of health care providers who speak a non-official language [7]. Currently, recruitment initiatives exist to address local language barriers of First Nations populations geared toward Aboriginal undergraduate medical students [7]. However, no such programs traditionally exist for international medical graduates in Canada [7]. Additionally, research initiatives that focus on language access could be promoted to policymakers and health service planners [7]. Inclusion of language proficiency as a variable in analysis while promoting the inclusion of non-official language participants could assist in the development of service delivery models for interpreter services in communities and institutions [7]. Additional funding for community organizations offering newcomer services may increase outreach initiatives to provide referrals to appropriate health care providers, promote primary and preventive care, and enrol eligible immigrants into insurance plans [9]. Furthermore, strategies for both the training and accreditation of interpreters, as well as national standards of practice for interpreters, could be developed [7].

CONCLUSION

Language barriers in health care affect both patients and providers. The relationship between language proficiency and self-reported health is impactful not only for services surrounding health and society, but for medical curriculum and health information as well [21]. Language barriers have proven detrimental to consent and confidentiality issues, quality of care, and the

overall patient-provider relationship. With the realization that a language barrier is a significant concern in health care access and delivery, it is time to put the numerous proposed solutions into action, and be proactive in addressing this issue directly.

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REFERENCES

1. Ministry of Health and Long-Term Care [Internet]. Toronto (ON): Ministry of Health and Long-Term Care; 2016 Jan 21 [updated 2016 Jan 21; cited 2016 Feb 9]. Available from: http://www.health.gov.on.ca/en/pro/programs/emb/syrianrefugees/docs/refugee_assessment_considerations.pdf.
2. Government of Canada [Internet]. Map of destination communities and service provider organizations. Government of Canada; 2015 Nov 9 [updated 2016 Feb 9; cited 2016 Feb 9]. Available from: <http://www.cic.gc.ca/english/refugees/welcome/map.asp>.
3. Woods A, Benzie R [Internet]. Ottawa (ON): Quebec, Ontario ready to accept 16,000 Syrian refugees, as Saskatchewan balks. Toronto Star; 2015 Nov 16 [updated 2015 Nov 16; cited 2016 Feb 9]. Available from: <http://www.thestar.com/news/canada/2015/11/16/quebec-ontario-ready-to-accept-16000-syrian-refugees-as-saskatchewan-balks.html>.
4. Pottie K, Greenaway C, Feightner J, et al. Evidence-based clinical guidelines for immigrants and refugees. *Can Med Assoc J*. 2011;183(12):824-925
5. Pottie K, Greenaway C, Hassan G, Hui C, Kirmayer LJ [Internet]. Ottawa (ON): Caring for a newly arrived Syrian refugee family. *Can Med Assoc J*; 2015 Dec 8 [updated 2015 12 8; cited 2016 Feb 9]. Available from: <http://www.cmaj.ca/site/misc/caring-for-a-newly-arrived-syrian-refugee-family-cmaj.151422.xhtml>.
6. European Centre for Disease Prevention and Control [Internet]. Sweden: Infectious diseases of specific relevance to newly-arrived migrants in the EU/EEA. 2015 Nov 19 [updated 2015 Nov 19; cited 2016 Feb 9]. Available from: <http://ecdc.europa.eu/en/publications/Publications/Infectious-diseases-of-specific-relevance-to-newly-arrived-migrants-in-EU-EEA.pdf>.
7. Health Canada [Internet]. Ottawa (ON): Language Barriers in Access to Health Care. 2001 Nov [published 2001 Nov; cited 2016 Feb 9]. Available from: http://www.hc-sc.gc.ca/hcs-sss/alt_formats/hpb-dgps/pdf/pubs/2001-lang-acces/2001-lang-acces-eng.pdf.
8. Wang L, Kwak M-J. Immigration, barriers to healthcare and transnational ties: A case study of South Korean immigrants in Toronto, Canada. *Soc Sci & Med*. 2014;133:340-348.
9. Lebrun LA. Effects of length of stay and language proficiency on health care experiences among Immigrants in Canada and the United States. *Soc Sci &*

- Med. 2012; 74:1062-1072.
10. Schenker Y, Wang F, Selig SJ, et al. The impact of language barriers on documentation of informed consent at a hospital with on-site interpreter services. *J Gen Intern Med.* 2007;22(2):294-299.
 11. Saha S, Fernandez A. Language barriers in health care. *J Gen Intern Med.* 2007;22(2):281-282.
 12. Gerrish K. The nature and effect of communication difficulties arising from interactions between district nurses and South Asian patients and their carers. *Journal of Advanced Nursing.* 2001;33(5):566-574.
 13. Gerrish K, Chau R, Sobowale A et al. Bridging the language barrier: the use of interpreters in primary care nursing. *Health and Social Care in the Community.* 2004;12(55):407-413.
 14. Wang L, Rosenberg M, Lo L. Ethnicity and utilization of family physicians: A case study of Mainland Chinese immigrant in Toronto, Canada. *Soc Sci & Med.* 2008;67:1410-1422.
 15. Gadon M, Balch GI, Jacobs EA. Caring for patients with limited English proficiency: The perspectives of small group practitioners. *J Gen Intern Med.* 2006;22[Suppl 2]:341-346.
 16. Gushulak BD, Williams LS. National immigrant health policy: Existing policy, changing needs, and future directions. *Can J Public Health.* 2004;95(3):127-129.
 17. McDonald JT, Kennedy S. Insights into the 'healthy immigrant effect': health status and health service use of immigrants to Canada. *Soc Sci & Med.* 2004;59(8):1613-1627.
 18. DesMeules M, Gold J, Kazanjian A et al. New approaches to immigrant health assessment. *Can J Public Health.* 2004;95(3):122-126
 19. Purnell L. The Purnell Model for Cultural Competence. *J of Trans Nursing.* 2002;13(3):193-196.
 20. Purnell LD. Guide to Culturally Competent Health Care. In: Chapter 3 – Barriers to Culturally Competent Health Care. 3rd ed. Philadelphia, PA: F.A. Davis Company; 2014. 22-30 p.
 21. Pottie K, Ng E, Spitzer D, et al. Language proficiency, gender and self-reported health. *Can J Public Health.* 2008;99(6):505-510.

The Effect of Conflict and Displacement on the Health of Internally Displaced People: The Colombian Crisis

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ABSTRACT

Decades of violence in Colombia led to the relocation of millions of rural families into urban areas, where the violation of human rights and abuse add to the struggle to meet most basic needs. Lack of housing, economic instability, poor access to healthcare and education impact their overall health. Unfortunately, implementation of laws created to alleviate the crisis has been unsuccessful, as armed groups target aid efforts through violence and threats. While the role of physicians is limited, advocacy and collaboration with other organizations can help improve the health and well-being of this population.

RÉSUMÉ

Des décennies de violence en Colombie ont mené au relogement de millions de familles rurales vers des milieux urbains, où la violation des droits de la personne et les sévices exacerbent la lutte pour subvenir aux besoins fondamentaux. Le manque de logement, l'instabilité économique, et l'accès restreint aux soins de santé et à l'éducation ont un impact sur leur santé globale. Malheureusement, l'établissement de lois conçues pour alléger la crise s'est révélé sans succès, puisque des groupes armés ciblent ces efforts d'aide humanitaire avec de la violence et des menaces. Bien que le rôle des médecins soit limité, les activités de plaidoyer et la collaboration avec d'autres organismes peuvent aider à améliorer la santé et le bien-être de cette population.

INTRODUCTION

As of 2014, approximately 38 million people were displaced due to conflict around the world [1]. Recently, the mass exodus of refugees from Syria has caught the attention of the international community. Unfortunately, in situations of internal conflict, not all of the individuals are able to flee; most can only resort to displacement within the country. In Syria, approximately 6.6 million individuals are known as Internally Displaced People (IDPs). Interestingly, Colombia is the country with the second-most IDPs in the world (6,044,200 Colombian IDPs as of December 2014) [1] and is the only Western country with such a problem at a massive scale [2,3]. The forced displacement of Colombians was first identified in 1985 and has since been a major national problem; it is considered one of the worst humanitarian emergencies in the world [3]. It has been estimated that more than 300,000 Colombians are displaced every year, not including those who flee the country or die during displacement [2,3]. In fact, more than one in every ten Colombians have been victims of displacement at some point in their lives [4]. The widespread violation of their human rights through violent attacks has had a profound and detrimental effect on their health and social determinants [3]. This paper will provide a brief overview of the conflict in Colombia, analyze how health determinants are affected by displacement, and provide a viewpoint on the role of medical professionals in an area of conflict. The aim is to provide an example of the situation lived by IDPs in Colombia, which reflects what happens in other conflict-ridden countries in the world. Given the large

number of refugees that immigrate to Canada every year, this may provide health professionals with the context necessary to better treat and manage this vulnerable population.

COLOMBIAN ARMED CONFLICT AND IDPS

Colombia has suffered from decades of armed conflict between the guerrillas (a left-wing insurgent group), paramilitary (a right-wing conservative militia) and government forces. Historically, the fight has been over power, natural resources [2,5], and control of drug production [2,6]. Unfortunately, civilians have been the most affected by this conflict [2,3]. The vast majority of IDPs are comprised of minority groups, indigenous peoples and Afro-Colombians [3,6] from the Pacific coast. This region is the most affected by violence due to the major exit ports for legal and illegal goods located along the coastline [7]. This long-standing struggle for power and resources has led to human rights violations that have forced Colombians to flee. Recruitment of minors, sexual violence [3,5], deployment of anti-personnel mines [3], massacres, torture, extortion, and death threats [5] are some of the reasons families flee and seek refuge elsewhere. This exodus has a negative impact on the different dimensions of health.

EFFECT ON DETERMINANTS OF HEALTH

Conflict and subsequent relocation have a significant impact on the social determinants of health. The violation of human rights and the abuse to which IDPs are subjected, results in a massive

Keywords: IDP; Determinants of Health; Forced Displacement

influx of IDPs to larger cities [3,6,8]; there are reports of up to 93% of IDPs seeking refuge in larger cities [9]. In addition, the vast majority of IDPs do not have the education or training necessary to enter the workforce in the host city [2], and therefore, they are unable to secure employment. As a result, many displaced families suffer from economic instability [3,10,11]. Furthermore, the lack of stable income will lead to food insecurity and lack of shelter, as these families are unable to keep up with the expensive lifestyle of larger cities (i.e. rent, transportation, food, etc.) [10]. For instance, the capital city, Bogotá, hosts the largest number of IDPs across the country [11]. Most are unable to find work and struggle to pay for shelter, thereby leading to economic insecurity and forcing them to resort to desperate measures to survive [6,9]. Most families are forced to send their children to work to produce an alternative source of income, and as a result they are unable to continue their education [12]. The Norwegian Refugee Council estimated that 33% of IDPs are children and young adults, and the majority are never able to return to school following their displacement [13]. This reduces their chances of entering a stable workforce and leaving the cycle of poverty.

Conflict and violence also leads to poor mental health and decreased access to health services. It has been shown that IDPs have high rates of general anxiety and depression [14,15]. More recently, Richards and colleagues found that 88% of IDPs suffered from post traumatic stress disorder (PTSD) as a direct result of abuse experienced or witnessed. Also, it was noted that females were at a higher risk of suffering negative mental outcomes, while their male counterparts were more likely to adopt destructive coping mechanisms. For instance, male IDPs were found to abuse alcohol in an attempt to manage their depression/PTSD symptoms [2]. It is important to note that men in Colombia are culturally expected to deal with their emotions in a private way [16] and mental health conditions are rarely recognized as a medical problem. As a result, there is an increased incidence of alcoholism and under-diagnosing of mental health complications in this population [17]. It was also suggested that anxiety, depression and PTSD are known to be exacerbated by economic instability, lack of housing and lack of basic necessities [18,19], all of which are present in IDPs who seek refuge in urban areas. To further aggravate the situation, there are few accessible mental health services available to IDPs [2,20,21] and, for the most part, general healthcare access is minimal or non-existent [9]. Colombia has a 2-tiered medical system, where the wealthy pay for private medical services and the poor use public healthcare [22]. However, the public medical system has limited access to hospitals, specialists, and pharmaceuticals [22]. In addition, a large number of violent attacks in smaller towns target hospitals and health centers [6], thereby limiting access to the few available healthcare resources. This results in inadequate access to medical services for IDPs, which are undoubtedly the most vulnerable and poorest in the country.

POLICY-MAKING

Over time, there have been numerous policies and laws created to protect IDPs in Colombia [2]. Unfortunately, these laws have done little to ensure their well-being. For example, in 2011 a new law known as the “Victims’ Law,” sought to provide assistance and land restitution to IDPs. Unfortunately, the government blocked said legislation because it was presumed that ex-members of the armed forces would also benefit from those provisions [6]. Even though Colombia is the country with the most laws that seek to improve work opportunities, subsidize education, and protect IDP’s human rights [6,23], the majority of IDPs remain unemployed, live below the poverty line, and cannot afford housing [2,3,8,9]. Given that there are no displacement camps in Colombia, IDPs are forced to live in overcrowded shelters in some of the poorest neighbourhoods in urban areas [3,6]. In a report published by the Overseas Development Institute, it was concluded that the main problem in Colombia was not a lack of policy-making, but instead, it was unsuccessful implementation [6]. The armed conflict has always been identified as the main factor responsible for such problems [6]. Armed groups specifically target programs created to help IDPs, thus preventing their implementation [24]. As an example, the Self-Reliance Program sought to restore previously owned land back to IDPs, enabling them to regain self-reliance through the production of agricultural products. Nonetheless, the recurrence of violence and lack of security by the government prevented long-term resettlement of IDPs; most of those who used the program found themselves displaced a second time [6]. Similarly, human rights defenders have been victims of abuse, kidnapping and death threats [3], which limit accessibility of interested parties to the target population. At this point, the solution lies on attaining a level of security that would allow the implementation of policies passed. However, the decades of civil unrest, wars between drug “cartels” and the constant attacks from armed groups have made this solution almost unattainable. Efforts to cease fire have proven to be ineffective, as the humanitarian crisis only gets worse [3].

ROLE OF HEALTH PROFESSIONALS

The role of medical professionals towards the IDP crisis can be difficult, particularly in an unstable environment. In theory, physicians could work towards improving access to healthcare, advocating for programs that will ensure that basic needs are met, and promoting health education. In the context of the Colombian crisis, access to health services could be improved by offering IDPs with medical care free of charge and bringing basic medical services directly to them. This would ensure that services are provided irrespective of the client’s inability to pay and their location. In addition, health education would allow IDPs to improve their health by giving them a sense of empowerment over their health decisions, and allowing them to regain a sense of control

and autonomy. This is best exemplified by the work of Médecins Sans Frontières. They have been able to conduct TB screening programs [25], mental health promotion [26], vaccination brigades [27], and set up mobile clinics [28]. While the TB screening programs have been successful in empowering municipalities to take over this project [25], other attempts to provide healthcare have failed due to the influence of guerrillas. More specifically, in 2004 a team from Médecins Sans Frontières was kidnapped, raising security concerns and leading to the temporary termination of several initiatives [29]. It is important to realize that health professionals alone cannot make a change, as they themselves have been victims of the armed conflict [24]. However, collaboration with the government, humanitarian organizations and the community in general would allow them to reach those most in need. As medical professionals, we have the duty and moral responsibility to advocate for the most vulnerable and to give a voice to those who cannot advocate for themselves.

The decades of conflict and violence in Colombia have led to the displacement of millions of families into urban areas, where they struggle to survive and meet their most basic needs. They are victims of human rights violations and abuse, which have a deleterious effect on their health. In addition, economic instability, lack of proper housing, access to healthcare and education exacerbate their overall health needs. Even though many policies and laws have been passed in an effort to alleviate the IDP crisis, their implementation has been unsuccessful due to the violence and attacks from armed groups. While the role of physicians may be limited, small efforts to reach IDPs can be a first step towards ensuring their well-being.

REFERENCES

1. IDMC. Capacity-building on law and policy-making on internal displacement [Internet]. [Updated 2015 May; cited 2016 Feb 14] Available from: <http://www.internal-displacement.org/global-figures/>.
2. Richards A, Ospina-Duque J, Barrera-Valencia M, et al. Post-traumatic stress disorder, anxiety and depression symptoms, and psychosocial treatment needs in Colombians internally displaced by armed conflict: a mixed-method evaluation. *Psychol Trauma: Theory, Research, Practice and Policy*. 2011;3[4]:384-393.
3. IDCM. Colombia: Internal displacement in brief. [Internet]. [Updated 2013 Dec 31; cited 2016 Feb 14] Available from: <http://www.internal-displacement.org/americas/colombia/summary/>.
4. IDMC. Displacement continues despite hopes for peace. [Internet]. [Updated 2014 Jan 14; cited 2016 Feb 22] Available from: <http://www.internal-displacement.org/americas/colombia/2014/displacement-continues-despite-hopes-for-peace>.
5. Ferris E, Mooney E, Stark C. From responsibility to response: assessing national approaches to internal displacement. The Brookings Institution-London School of Economics Project on Internal Displacement. [Internet]. [Updated 2011 Nov; cited 2016 Feb 21] Available from: <http://www.brookings.edu/~media/research/files/reports/2011/11/responsibility-response-ferris/from-responsibility-to-response-nov-2011.pdf>.
6. ODI. Protracted displacement: uncertain paths to self-reliance in exile. Annex 8- case studies: Colombia, Darfur, Jordan and Uganda. [Internet]. [Updated 2015 Sept; cited 2016 Feb 14] Available from: <http://www.odi.org/hpg/protracted-displacement/>.
7. IDCM. Colombia IDP figures analysis. [Internet]. [Updated 2014; cited 2016 Feb 14] Available from: <http://www.internal-displacement.org/americas/colombia/figures-analysis/>.
8. ORMET. Poblacion desplazada y mercado de trabajo. [Internet]. [Updated 2014 Feb 13; cited 2016 Feb 14] Available from: <http://www.co.undp.org/content/colombia/es/home/presscenter/articles/2014/02/13/ormet-poblacion-desplazada-y-mercado-de-trabajo.html>.
9. Albuja S, Ceballos M. Urban displacement to urban alienation. *Forced Migration Review*. 2010;34:10-11.
10. Roberts B, Odong VN, Browne J, et al. An exploration of social determinants of health amongst internally displaced persons in northern Uganda. *Conflict and Health*. 2009;3:10.
11. Vidal R, Atehortua C, Salcedo J. Local government responses to internal displacement in urban areas: a study of Bogotá and Cali, Colombia. The Brookings Institution- London School of Economics Project on Internal Displacement. [Internet]. [Updated 2013 May; cited 2016 Feb 21] Available from: <http://www.brookings.edu/~media/research/files/reports/2013/05/municipal-authorities-colombia/idp-municipal-authorities-colombia-may-2013-executive-summary.pdf>.
12. Ibanez AM, Moya A. Vulnerability of victims of civil conflicts: empirical evidence for the displaced population in Colombia. *World Development*. 2010;38[4]:647-663.
13. IDMC. Girl, disrupted. [Internet]. [Updated 2014 Mar; cited 2016 Feb 14] Available from: <http://www.internal-displacement.org/publications/2014/girl-disrupted>.
14. Caceres DC, Izquierdo VF, Mantilla L, et al. Perfil epidemiológico de la población desplazada por el conflicto armado interno del país en un barrio de Cartagena, Colombia. *Biomedica*. 2002;22[suppl. 2]:425-444.
15. Puertas G, Rios C, del Valle H. Prevalencia de trastornos mentales comunes en barrios marginales urbanos con población desplazada en Colombia. *Revista Panamericana de Salud Publica*. 2006;20[5]:324-33.
16. Avila Cadavis JD, Escobar Cordoba F, Chica Urzola HL. Prevalencia de ansiedad y depresión en alcohólicos hospitalizados para desintoxicación en Bogotá. *Revista Facultad de Medicina de la Universidad Nacional de Colombia*. 2005;53[4]:219-225.
17. Lilly MM, Pole N, Best SR, Metzler TM, Marmar CR. Gender and PTSD: what can we learn from female police officers? *Journal of Anxiety Disorders*. 2009;23:767-774.
18. Johnson H, Thompson A. The development and maintenance of post-traumatic stress disorder (PTSD) in civilian adult survivors of war trauma and torture: a review. *Clinical Psychology Review*. 2008;28[1]:36-47.
19. Roberts B, Ocaña KF, Browne J, Oyok T, Sondorp E. Factors associated with post-traumatic stress disorder and depression amongst internally displaced persons in northern Uganda. *BioMed Journal of Psychiatry*. 2008;153[2]:219-225.
20. Mogollon-Perez AS, Vazquez Navarrete ML. Opinión de las mujeres desplazadas sobre la repercusión en su salud del desplazamiento forzado. *Gaceta Sanitaria*. 2006;20[4]:260-265.
21. Mogollon-Perez AS, Vasquez ML. Factores que inciden en el acceso de la población desplazada a las instituciones prestadoras de servicios de salud en Colombia. *Cadernos de Saude Publica*. 2008;24[4]:745-754.
22. Webster PC. Health in Colombia: a system in crisis. *CMAJ*. 2012;184[6]:E289-E290.
23. Ferris E. The role of municipal authorities. *Forced migration review*. 2003;34:39.
24. Paredes Zapata GD. Terrorism in Colombia. *Prehospital Disaster Medicine*. 2003;18[2]:80-87.
25. Médecins Sans Frontières. International Activity Report, 2014. [Internet]. [Updated 2014; cited 2016 April 10] Available from: <http://activityreport.msf.org/country/colombia/>.
26. Médecins Sans Frontières. MSF psychiatrist on mental healthcare in Colombia. [Internet]. [Updated 2014; cited 2016 April 10] Available from: <http://www.msf.ca/en/article/msf-psychiatrist-mental-healthcare-colombia>.
27. Médecins Sans Frontières. New access for MSF teams in Bajo Atrato region, Colombia. [Internet]. [Updated 2014; cited 2016 April 10] Available from: <http://www.msf.ca/en/article/new-access-msf-teams-bajo-atrato-region-colombia>.
28. Médecins Sans Frontières. Colombia: MSF provides mental health care and other support following the latest upsurge in violence. [Internet]. [Updated 2015 July 9; cited 2016 April 10] Available from: <http://www.msf.ca/en/article/colombia-msf-provides-mental-health-care-and-other-support-following>.

ing-the-latest-upsurge-in.

29. Médecins Sans Frontières. The conflict has worsened in the Caquetà, thus making our more difficult yet more relevant as well. [Internet]. [Updated 2014; cited 2016 April 10] Available from: <http://www.msf.ca/en/article/conflict-has-worsened-caquet%C3%A1-thus-making-our-work-more-difficult-yet-more-relevant-well>.

Refugee Mental Health: How Canada Supports the World's Most Vulnerable in Their Transition to Becoming Canadian

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ABSTRACT

Canada has been a sanctuary for refugees for many generations and is currently involved in welcoming a new cohort of Syrian refugees. Refugees represent a vulnerable population in Canada who require support in order to establish themselves and prevent the onset of mental illness. This article briefly describes Canada's experience with refugees and then explores issues faced by incoming Syrians focusing specifically on factors contributing to refugee mental health. It is evident that refugees face incredible difficulties on their journey but that the various support systems in Canada significantly bolster their resilience to mental health issues.

RÉSUMÉ

Le Canada est un sanctuaire pour les réfugiés depuis plusieurs générations et accueille à l'heure actuelle une nouvelle cohorte de réfugiés syriens. Les réfugiés représentent une population vulnérable au Canada, qui nécessite du soutien afin de s'établir et de prévenir la maladie mentale. Cet article décrit brièvement l'expérience du Canada avec les réfugiés et explore par la suite les défis qu'affrontent les nouveaux venus syriens, s'attardant particulièrement sur les facteurs qui contribuent à la santé mentale des réfugiés. Il est évident que les réfugiés font face à d'incroyables difficultés tout au long de leur parcours, mais que les divers systèmes de soutien au Canada renforcent considérablement leur résilience contre les troubles de santé mentale.

A HISTORICAL PERSPECTIVE

Canada is a nation of incredible diversity with inhabitants who come from all over the globe. Even before the country's establishment in 1867 the people of this land were diverse, and that diversity has grown ever since. Canada has a rich history of refugee immigration with waves of Jewish, Ukrainian, Chilean, Bengali, Vietnamese, Cambodian, and Bhutanese refugees arriving on its shores in the 1900s [1]. The recent Syrian crisis has received much attention in Canada and with a change in political ideologies in November 2015, Canada has accepted 25,000 Syrian refugees [2].

Syrian refugees, like all refugee populations, come from unique backgrounds resulting in unique needs for successful integration into Canadian society. The Canadian health care system and regional refugee agencies are experienced with receiving refugees from nations around the world and helping with their transition [3,4]. At a national level, the Interim Federal Health Program (IFHP) was developed to cover all incoming refugees for basic medical care and prescription drugs [4]. This essential program also covers an immigration medical exam, emergency dental services, emergency vision care as well as a pair of corrective lenses [4]. After one year, refugees in Canada can be adopted into their provincial health system [4]. Due to Canada's involvement with refugee importation, Canadian physicians are encouraged to register as Medavie Blue Cross providers in order to serve IFHP beneficiaries [5]. All of these measures are in place in an attempt to

adequately support the vulnerable refugees. However, despite numerous programs and experience, issues remain with refugee integration in Canada. According to the Government of Canada "Refugees [...] often do not have the resources to easily establish themselves" [6]. Unfortunately, if not well supported, stressors for this vulnerable population can result in unique and complex mental health issues [7,8]. Consequently, as has been the case for all of Canada's history, the refugee integration process continues to require national investment to ensure that refugees are adequately supported.

THE ROLE OF MENTAL ILLNESS

There are key factors along the refugee journey that have been shown to predict the development of mental illness such as post-traumatic stress disorder (PTSD), anxiety, psychotic illness or depression later in life [7-10]. This can be understood in a sequential order beginning with a refugee's experiences in their home nation. The level of trauma endured through exposure to war, torture, food shortage, or abuse are known factors in predicting future mental health complications [9]. What refugees have witnessed may have a lasting impact on their ability to cope with change upon being adopted into Canada. As refugees come to Canada they may escape a food-deprived and war-torn region but they enter a part of the world completely new to them with its own set of challenges.

Refugees often have a significant deterioration in self-reported

Keywords: Refugee; Mental Health

health status after arrival to their new home [9]. This phenomenon is likely linked to the quality or difficulty of the transition to life in Canada. Novel stressors such as language, finances, housing, and social isolation develop as soon as refugees arrive in Canada [10]. Adequate resource availability, employment and social services in welcoming communities are three more key factors in this transition [10,11]. These potential issues necessitate why support systems need to be in place for refugees. Otherwise the novel challenges during immigration in addition to previous emotional, physical, or spiritual trauma can manifest in adverse mental health outcomes [9,10]. Fortunately, Canadians are attuned to these risks and with the help of community members, refugees are commonly integrated efficiently without developing mental illness [10]. Despite previous trauma and novel stressors, approximately 90% of incoming refugees will cope well and will not be afflicted with mental illness [8]. Therefore, despite the incredible challenges faced by refugees, the support of Canadians can dramatically impact their success in a new safe home.

A LOCAL PERSPECTIVE

The refugee immigration experience is heavily dependent on the type of support they receive and the resources of their adoptive community. While all Canadian communities are unique, those accepting refugees often have similar resources that can help in the transition process. One such community is Victoria, British Columbia which has recently become home to over 200 government sponsored Syrian refugees [12,13]. Victoria is a representative community of many others in Canada because it has experience accepting refugees and has an agency prepared for vulnerable newcomers. The Victoria Immigrant and Refugee Centre Society (VIRCS) plays a key role in introducing refugees to their new community [3]. Societies and agencies such as this exist throughout Canada for supporting refugees and facilitating their transition [14-16]. By exploring these invaluable resources, it becomes apparent how vulnerable refugees can have successful beginnings in communities throughout Canada.

VIRCS is populated by employees who can understand the refugee experience as many of them are former immigrants or refugees themselves [13]. Many refugees initially feel as if they have lost their identity and they are invisible in Canada [13]. However, with the support of VIRCS employees and volunteers, refugees can begin to integrate into their new world. Within months refugees gain employment, get their driver's licenses, buy houses and learn to speak English [13]. This form of healthy integration is the goal of VIRCS and is what drives each member of the organization [3].

VIRCS and similar societies in Vancouver, Toronto and Ottawa offer many programs to incoming refugees in order to ease the integration process [14-16]. Health, finance, shopping, yoga, and

language workshops are highly sought after and are offered for free to the refugees [13]. With large waves of refugees, VIRCS also hosts a skills connect event where refugees are connected to employers in their previous profession. These resources are tuned specifically to the needs of refugees and are offered because of their effectiveness in achieving the goals of VIRCS.

Agencies such as VIRCS possess Canada's experts for working with refugees and they can anticipate many of the potential issues for new cohorts of refugees [3,13]. At VIRCS they realize that refugees in a new country have lost their friends, family, profession, culture, and food. They know that their clients have also experienced war, lost loved ones and have been forced to abandon everything they know [13]. Consequently, VIRCS identifies mental health as the number one health issue for their clients and has taken steps to address the potential need for counselling [13]. An Immigrant and Refugee Wellness Centre for Syrian refugees was recently established in Victoria with the support of VIRCS [13]. This new centre, supported by trained volunteers, is designated for providing comprehensive trauma counselling for refugees [13]. Other health issues such as tuberculosis or malnutrition can be managed in Canada, but mental health issues are the most concerning to VIRCS as they are the most complicated [13].

The cohort of Syrian refugees settling in Victoria is 75% children who face unique challenges but have the most potential as future Canadians [13]. Refugee children often initially miss their friends and former culture, but with the efforts of individuals at VIRCS and other refugee agencies throughout Canada, children adapt and integrate easily. In some cases, counselling may be necessary for helping children cope with previous trauma and to prevent possible issues with anger and violence [13]. Given support, within ten years refugee children will learn a new language, make friends, grow up, go to university and eventually pay back into the economy which brought them here [13]. Victoria, like many other Canadian communities, has incredible resources for refugees which can help with their challenging transition.

CONCLUDING REMARKS

Canada has been accepting refugees for over 100 years and has developed systems to properly support and integrate this vulnerable population. Refugees have access, both nationally and regionally, to resources that can help them cope with previous trauma and explore options for their future in Canada. Agencies and programs such as VIRCS and the IFHP allow refugees to gain new employment, learn English, and access counselling; all key factors in a refugee's integration. However, with all of these services there will continue to be unique challenges for incoming waves of refugees. Amid the current Syrian importation, housing shortages have evolved in many major Canadian cities, which has likely inflicted stress on the newcomers [17-19]. Yet despite

this additional stressor, the data suggest that the resilience of the refugees will help them overcome this challenge [7]. All of the resources available to refugees in Canada bolster their resiliency, thus resulting in controlled levels of mental illness in populations who have survived incredible trauma. The level of support provided to refugees is a major predictor of future well-being and Canadians must remain committed to ensuring that our nation is equipped to welcome global citizens in need.

REFERENCES

1. Government of Canada [Internet]. Immigration: Canada: A history of refuge; [updated Jun 2012, cited 2016 Mar 9]. Available from: <http://www.cic.gc.ca/english/games/teachers-corner/refugee/refuge.asp>.
2. 25,000th Syrian refugee lands in Canada [Internet]. CBC News; 2016 Feb 27 [Cited 2016 May 29]. Available from: <http://www.cbc.ca/news/canada/montreal/25-000th-syrian-refugee-lands-in-canada-1.3467886>.
3. Welcome to VIRCS: Our mission [Internet]. Victoria Immigrant and Refugee Society; [cited 2016 Mar 28]. Available from: <http://www.vircs.bc.ca/content/about>.
4. Government of Canada [Internet]. Determine your eligibility – Interim Federal Health Program; [updated May 2016, cited 2016 Mar 11]. Available from: <http://www.cic.gc.ca/english/refugees/outside/arriving-healthcare/individuals/apply-who.asp>.
5. Information Handbook for Health-care professionals. Immigration, Refugee and Citizenship Canada, Medavie Bluecross; [updated April 2016, cited 2016 April 8]. Available from: <http://www.cic.gc.ca/english/refugees/outside/arriving-healthcare/practitioners.asp>.
6. Government of Canada [Internet]. Immigration: The refugee system in Canada; [updated Nov 2015, cited 2016 Mar 11]. Available from: <http://www.cic.gc.ca/english/refugees/canada.asp>.
7. Kirmayer LJ, Narasiah L, Munoz M, et al. Common mental health problems in immigrants and refugees: general approach in primary care. *Canadian Medical Association Journal*. 2011;183(12): 959-67.
8. Fazel M, Wheeler J, Danesh J. Prevalence of serious mental disorder in 7000 refugees resettled in western countries: a systematic review. *The Lancet*. 2005;365(9467):1309-14.
9. Pottie K, Greenaway C, Feightner J, et al. Evidence-based clinical guidelines for immigrants and refugees. *Canadian Medical Association Journal*. 2011;183(12): 824-925.
10. Kirmayer LJ, Narasiah L, Munoz M, et al. Common mental health problems in immigrants and refugees: general approach in primary care. *Canadian Medical Association Journal*. 2011;183(12):E959-67.
11. Carlsson JM, Olsen DR, Mortensen EL, et al. Mental health and health-related quality of life: a 10-year follow-up of tortured refugees. *The Journal of nervous and mental disease*. 2006;194(10):725-31.
12. Victoria to receive up to 400 refugees this year [Internet]. *Times Colonist*; 2016 Feb 5 [Cited 2016 May 18]. Available from: <http://www.timescolonist.com/news/local/victoria-to-receive-up-to-400-syrian-refugees-this-year-1.2167029>.
13. Okot Ochen, A. Victoria Immigrant and Refugee Centre Society. Personal interview; 2016 Mar 10.
14. About: Mission Statement [Internet]. Inland Refugee Society of BC; [cited 2016 Aug 28]. Available from: <http://inlandrefugeesociety.ca>.
15. Welcome to the Christie Refugee Welcome Centre [Internet]. Christie Refugee Welcome Centre; [cited 2016 Aug 28]. Available from: <http://christies-treetc.com>.
16. About us: OCISO [Internet]. Ottawa Community Immigrant Services Organization; [cited 2016 Aug 28]. Available from: <http://ociso.org>.
17. Kerur S. Refugees' needs expose Canada's housing crisis [Internet]. *The star*; 2016 Feb 5 [2016 Apr 22]. Available from: <https://www.thestar.com/opinion/commentary/2016/02/05/refugees-needs-expose-canadas-housing-crisis.html>.
18. Turner C. Refugee agencies making headway in housing Syrians, but thousands still need homes [Internet]. CBC News; 2016 Mar 8 [Cited 2016 May 11]. Available from: <http://www.cbc.ca/news/canada/refugees-housing-moving-in-1.3476893>.
19. Thomas M. Refugee sponsors struggle to find available housing in Victoria [Internet]. CBC News; 2016 Jan 13 [Cited 2016 Apr 22]. Available from: <http://www.cbc.ca/news/canada/british-columbia/refugee-sponsors-struggle-to-find-available-housing-in-victoria-1.3401185>.

Interim Federal Health Program for Refugees: Looking Back and Moving Forward

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ABSTRACT

Refugee health continues to be an important topic in domestic and foreign affairs. In Canada, the interim federal health program (IFHP) is what provides refugees with healthcare insurance. Since 2012, there have been a series of changes to the IFHP. Due to the precarious status of the IFHP over the past few years, there have been a number of challenges associated with it. This commentary provides a review of the IFHP's history, outlines specific challenges that remain within the program, and puts forward potential solutions to those challenges.

RÉSUMÉ

La santé des réfugiés continue d'être un sujet important dans les affaires domestiques et étrangères. Au Canada, le programme fédéral de santé intérimaire (PFSI) est responsable de fournir l'assurance maladie aux réfugiés. Depuis 2012, il y a eu une série de changements au PFSI. Étant donné l'état précaire du PFSI au cours des dernières années, il existe un certain nombre de défis qui y sont associés. Ce commentaire fournit un aperçu de l'histoire du PFSI, souligne les défis précis qui persistent dans le programme, et propose des solutions potentielles à ces défis.

INTRODUCTION

The ongoing Syrian conflict has created the world's largest humanitarian crisis since the Second World War. Since the start of the conflict, millions of Syrian citizens have been forcibly displaced, including over 4 million refugees [1]. Canada has taken positive steps to address this crisis, such as sponsoring over 25,000 Syrian refugees to migrate to the country. When the federal government sponsors refugees, the goal is not to simply get them onto Canadian soil, but also to provide them with appropriate support to help them integrate into society. This includes access to adequate physical and mental healthcare services, which together are provided through the interim federal health program (IFHP).

THE IFHP – OVERVIEW & HISTORY

During the Second World War, the world experienced an immense humanitarian crisis resulting in millions of people fleeing their countries of origin. In the aftermath of the war, capable nations, such as Canada, experienced an influx of refugees from around the globe.

The Canadian federal government in the 1950s acknowledged that refugees faced considerable difficulties integrating and establishing themselves. Furthermore, it became clear that refugees with emergency health concerns were frequently unable to afford the healthcare that they required. Since universal healthcare in Canada was not yet established, many

refugees with traumatic and sometimes violent experiences did not receive even the most basic primary care. To address this issue, in 1957 the federal government established the IFHP. The IFHP mandated the federal government to provide temporary essential healthcare insurance to refugees and other newcomers to Canada [2]. From 1957 to 1995 the IFHP was managed by the Department of National Health and Welfare and since 1995, the IFHP has been managed by Citizenship and Immigration Canada [2,3].

In April 2012, the federal government announced planned changes to the IFHP as a way to decrease spending in this sector. The federal government purported it would save around \$20 million through cost cutting measures [4-6]. According to some researchers, however, those costs would merely trickle down to provincial health budgets [4-6]. For instance, by not having access to primary care through the IFHP, refugees presented to emergency departments, at the expense of the provinces, with health concerns that could otherwise have been dealt with earlier and at a lower cost [4-6].

The planned changes to the IFHP took effect in June 2012. As a result, healthcare coverage for many refugees was eliminated and other refugees received significantly reduced coverage. Prior to this, the IFHP had provided equal healthcare coverage to all eligible refugees. With the 2012 cuts, different categories of beneficiaries were created based on refugee status and healthcare coverage was provided based on those categories. For example, government assisted refugees maintained full IFHP coverage,

Keywords: Refugee Health; Interim Federal Health Program; Health Policy; Healthcare Access

while privately sponsored refugees and refugee claimants lost all medication coverage [2,6]. Most refugee claimants were still covered for medical services, the exceptions being those from designated countries of origin that were considered safe by the federal government [2,5,6]. Under the 2012 IFHP, refugees from these countries lost all coverage except for benefits that were considered a public health and safety concern [2,6]. Further categorization of refugees was integrated into the revised IFHP, dividing the refugee population into eleven groups and providing four different levels of healthcare coverage [2,6]. Without IFHP coverage or only partial coverage, refugees would effectively lose all or part of their sole form of healthcare insurance.

On July 4, 2014, a federal court struck down the 2012 revisions to the IFHP [2,3,7]. According to the court, these revisions breached sections 12 and 15 of the Charter of Rights and Freedoms [2,3,7]. The court considered the cuts to be “cruel and unusual treatment” as they intentionally set out to make the lives of an already vulnerable population even more difficult [2,3,7]. The federal government decided to appeal the court’s decision and in the meantime, it restored parts of the IFHP, but still provided considerably less coverage than had previously been available [2,3,7]. With the November 2014 revisions, two additional refugee categories were created bringing the total to 13, and one additional health benefit category was created for a total of five different levels of coverage. This made the 2014 version of the IFHP arguably more complicated than the 2012 version [2,6].

October 19, 2015 saw the election of a new federal government in Canada. In December 2015, the newly elected government took initial steps to restore the IFHP to its pre-2012 state by dropping the federal government’s appeal of the 2014 court decision. In February 2016, the federal government announced it would fully restore the IFHP by April 2016 [8]. It also decided to expand on aspects of the program relating to overseas management of refugee healthcare by April 2017 [8]. As of now, the IFHP again offers full healthcare coverage to all refugees equally [8].

CONSEQUENCES OF THE CHANGES TO THE IFHP

From the 2012 cuts to the IFHP, to their subsequent reversal in 2016, there have been both positive and negative developments. Among the positive developments are the consolidated efforts of people and organizations from both inside and outside the medical community to stand with our refugee population. These efforts led to the eventual restoration and expansion of the IFHP along with important research demonstrating the importance of such a program [2,6]

Negative consequences include decreased funding, resulting in significant direct health consequences for specific individuals who lost their IFHP coverage [2-4,6,7]. Additionally, owing to the

manufactured complexity of the IFHP’s reimbursement scheme, some healthcare professionals have accepted refugee patients and charged them directly for services to which they were entitled [2,4,7,9]. There is also considerable confusion among healthcare professionals about the working of the IFHP stemming from the multiple changes over the years [2,4,7,9]. This has led some healthcare professionals to not take on refugee patients because of uncertainty as to whether or not they will be reimbursed for their services [2,4,7-9]. Lastly, while the restored IFHP is less complex than IFHP 2012 or 2014, accessing the IFHP can be burdensome for healthcare professionals (e.g., registration requirements) who take on refugee patients [2,4,7-10].

POTENTIAL SOLUTIONS

The first step in addressing some of the problems with the IFHP was to restore the program to its pre-2012 capacity. In doing so, adequate resources were made available and the complexity of the IFHP was reduced by eliminating all categories of refugees and available health care services. With these measures in place, the federal government is now well placed to take steps to address two further problems; confusion among healthcare professionals about the working of the IFHP, and the excessive burden it places on healthcare professionals.

Regarding the confusion surrounding the IFHP, when healthcare professionals are unsure who is covered and to what extent they are covered, refugee patients with IFHP coverage may be charged for services that they are entitled to and sometimes may be refused care [2,4,7-10]. If the federal government can implement policies that simplify the IFHP’s complicated registration and reimbursement schemes it may help healthcare professionals better understand the IFHP and what it entails. Furthermore, an awareness campaign by the federal government, targeting healthcare professionals specifically, may be useful in communicating the current IFHP policy in place. The government can benefit from working with provincial and national healthcare associations, as well as colleges, in communicating with healthcare professionals around the country.

Regarding the burdens imposed on healthcare professionals with the IFHP, it is important to understand how the registration and reimbursement scheme continues to deter healthcare professionals from taking on refugees as patients [2,4,7-10]. If a healthcare professional wants to take on refugee patients that use the IFHP, they must first become a Medavie Blue Cross registered provider [10]. They must then ensure that their patients are covered by the IFHP each time they see them [10]. The additional paperwork and time commitment involved in registering for the IFHP, along with waiting to receive reimbursement, has resulted in some clinics refusing patients with IFHP coverage [2,4,7-10]. Establishing a simple, easy to navigate system where healthcare

professionals are not burdened in registering for the program or receiving reimbursement for their work could be a potential solution. Details regarding IFHP registration and reimbursement policy should be made in consult with healthcare professionals who are directly involved in utilizing the IFHP and caring for refugee patients.

SUMMARY

Since its establishment in 1957, the IFHP has provided temporary essential healthcare insurance to refugees and other newcomers to Canada. With the 2012 and 2014 changes to the IFHP, numerous challenges developed. First, the federal government significantly decreased program funding. Second, there was increased complexity of the program as a result of the changes made to its funding scheme. Third, there was increased confusion among healthcare professionals resulting from this complexity, as well as the frequent changes to the program. Last, the registration and reimbursement processes were made more burdensome for refugees and health care providers. In 2016, a new federal government returned the IFHP to its pre-2012 capacity by restoring its funding and eliminating the categorization of refugees. The government also went on to expand certain provisions within the IFHP. With these measures in place, the federal government is now ready to take further steps in addressing the remaining challenges. These challenges include the continued confusion surrounding the Federal Program and the excessive burden it places on health care providers who service patients insured under the program.

To address these challenges, the federal government can work with provincial and national medical associations to create an awareness campaign about what the IFHP entails, how it can be accessed, who is covered, and to what extent they are covered. The government should also work to simplify the IFHP's registration and reimbursement processes to reduce the burden placed on healthcare providers who are trying to take on refugee patients.

REFERENCES

1. Government of Turkey. Syria Regional Refugee Response [Internet]. Ankara (TR): United Nations High Commissioner for Refugees; 2016 [cited 2016 July 20]. Available from: <http://data.unhcr.org/syrianrefugees/regional.php>.
2. Ruiz-Casares M, Cleveland J, Oulhote Y, et al. Knowledge of Healthcare Coverage for Refugee Claimants: Results from a Survey of Health Service Providers in Montreal. *PLoS One*. 2016;11(1):20.
3. Mactavish A. Canadian Doctors for Refugee Care v. Canada (Attorney general) [Internet]. Ottawa (ON): Canadian Legal Information Institute; 2014 July 4 [cited 2016 July 20]. Available from: <http://canlii.ca/t/g81sg>.
4. Chen YY. Ontario right to fix Ottawa's mistake on refugee health care. [Internet]. Toronto (ON): Toronto Star; 2013 Dec 12 [cited 2016 July 22] Available from: https://www.thestar.com/opinion/commentary/2013/12/12/ontario_right_to_fix_ottawas_mistake_on_refugee_health_care.html.
5. Stanbrook MB. Canada owes refugees adequate health coverage. *CMAJ*. 2014;186(2):91.
6. Barnes S. The Real Cost of Cutting The Interim Federal Health Program. *Wellesley Institute*. 2013;1-19.
7. Webster PC. Many refugees still denied care despite ruling. *CMAJ*. 2015;187(10): E307-8.
8. Keung N. Ottawa to restore and expand refugee health benefits [Internet]. Toronto (ON): Toronto Star; 2016 Feb 18 [cited 2016 July 23] Available from: <https://www.thestar.com/news/immigration/2016/02/18/ottawa-to-restore-and-expand-health-care-for-refugees.html>.
9. Eggertson L. Optimism for restoration of refugee health care. *CMAJ*. 2016;188(1): E1.
10. Government of Canada. Interim Federal Health Program – Information for health-care professionals [Internet]. Ottawa (ON): Government of Canada: Immigration and citizenship; 2016 [cited 2016 July 23]. Available from: <http://www.cic.gc.ca/english/refugees/outside/arriving-healthcare/practitioners.asp>.

The Community Health Worker Model: A Grass-Roots Approach for Measles Prevention in Refugee Camps

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ABSTRACT

Syria's protracted civil war has resulted in massive population movements into refugee camps. Such movements, in conjunction with lower vaccination rates, potentiate infectious disease outbreaks. Measles transmission is a continuous threat in refugee camps, and a sustainable approach to providing preventative medicine in camps is warranted. The community health worker model can be used to identify unvaccinated persons, detect probable cases and refer individuals to health clinics within the camps for prophylaxis and medical care, respectively. Through this grass-roots approach, community health workers become an on-the-ground surveillance system that can determine demographic trends and facilitate public health responses to potential outbreaks.

RÉSUMÉ

L'interminable guerre civile en Syrie a entraîné des déplacements massifs de population vers des camps de réfugiés. De tels mouvements de population, en concomitance avec de plus faibles taux de vaccination, accroissent les risques de flambées épidémiques. La transmission de la rougeole est une menace continue dans les camps de réfugiés, et une solution durable dans l'administration de médecine préventive dans ces camps est justifiée. Le modèle des agents de santé communautaires peut être adopté pour identifier les personnes non vaccinées, détecter les cas probables et adresser ces individus aux cliniques de santé des camps pour qu'ils puissent y recevoir de la prophylaxie et des soins médicaux, respectivement. Grâce à cette approche locale, les agents de santé communautaires forment un système de surveillance sur le terrain qui permet de déterminer les tendances démographiques et de faciliter les interventions de santé publique contre les épidémies potentielles.

BACKGROUND

Syria is at the epicentre of one of the worst humanitarian crises of the 21st century [1]. The prolonged civil war has mobilized mass migrations, with neighbouring countries alone harbouring over 4 million refugees [1]. The Syrian experience has created a need for rethinking the global relief process, as renewed infectious disease threats are proving unmanageable under the current regime of refugee management practices.

With large population movements, in conjunction with a disrupted pharmaceutical industry [2], communicable diseases can cross international borders [3]. The resurgence of previously contained infectious diseases serves as a reminder of the vulnerability of the many fragile health systems, such as Syria's [3].

Most mortality cases in refugee camps are caused by diarrheal diseases, pneumonia, measles and malaria [4]. In Syria's case, measles is the primary infectious concern, where up to 7000 cases were reported in 2013 [5]. Current estimates remain unknown due to the lack of epidemiological surveillance. Neighbouring countries are naturally concerned [3], and the destabilization of their health infrastructures is a possibility [6].

The significance of measles in refugee camps is three-fold: 1) rou-

tine vaccinations are not up-to-date [2]; 2) porous camp borders allow influx of new, perhaps unimmunized, persons [3]; and 3) measles is one of the most contagious communicable diseases [7,8].

An improvement in the infectious disease management process in refugee camps must be considered, with the Syrian experience as a model for improvement. This paper outlines a strategy to employ community health workers (CHW) specifically to assuage the spread of infectious diseases in refugee camps, with specific attention to the threat of measles in Syrian camps. Increased reliance on CHWs will facilitate the following: prevention of measles contagion through early identification of unvaccinated individuals, case detection and subsequent referral to a treatment centre, and establishing a surveillance system.

COMMUNITY HEALTH WORKERS

CHWs act as the interface between health providers and the community within the realm of primary health care (PHC) [9]. As CHWs come from the same background as the population they serve, translation of health information within lingual and cultural considerations is possible [10]. PHC is advocated as the vehicle of access to basic health services and most applicable in refugee camps [11-13]. Theoretically, the CHW model can

Keywords: Measles; Community Health Workers; Refugee Camps; Prevention; Vaccinations

be applied in refugee camps to facilitate access to PHC. Few studies have investigated the use of CHWs in refugee camps [14, 15], with no published study considering measles prevention specifically. While evaluation processes for CHW implementation have not been well explored nor elucidated [15], there is sufficient evidence to suggest that an increased reliance on local resources, particularly CHWs, to sustain health in refugee camps, is warranted.

IDENTIFICATION OF UNVACCINATED PERSONS

CHWs provide a practical approach to measles prevention within refugee camps. Measles epidemics are a major public health concern in populations with poor vaccination coverage [4]. Given that over 50% of children born since the conflict origin are not vaccinated against preventable diseases [16], it is a logical conclusion that more unvaccinated individuals are entering overcrowded camps [3].

CHWs facilitate the identification of unimmunized persons [10]. Assuming that the approximate layout and magnitude of the camp is known, each CHW would be responsible for a predetermined zone. Since CHWs would be well-acquainted with families living in each area, a rapport could be established [10], allowing improved consistency in follow-up.

CHW presence has shown to increase immunization rates [17]. In one study, a CHW intervention improved rates by 39% in 4 months in low-income communities in Karachi, Pakistan [18]. Although measles often targets children due to their increased vulnerability [19], all family members should be vaccinated to reduce the viral reproductive capacity [20,21]. With immunization being a key mechanism for measles control [19], CHWs can assist in acquiring the minimum 95% vaccination rate to ascertain herd immunity [22].

Delegating prevention procedures to CHWs allows clinicians to remain within health centres. The measles vaccine requires specific storage guidelines, thus having a mobile clinician on the ground conducting a door-to-door strategy is impractical, as environmental conditions can decrease vaccine potency [23-25]. CHWs can direct individuals to the facility, where they can be vaccinated without the risk of decreasing vaccine potency [26]. Following the referral, with a timeline of when to go to the clinic, follow-up visits by the CHWs would be necessary to determine whether all unimmunized persons have been vaccinated. Repeated visits are unfeasible for an understaffed and overstressed health care team to undertake [27]. Thus, CHWs uphold the right to preventative medicine [28], which coincides with the human right to health services.

INTERVENTION THROUGH SYMPTOM IDENTIFICATION

CHWs provide minimal health interventions within the context of small-scale projects that have a positive long-term impact [29]. With the first sign of measles typically being a high fever [19], a literate CHW can easily measure body temperature if provided with basic training and a functional thermometer [30]. By informing CHWs of signs and symptoms, they can refer individuals to the health facility for a more exhaustive exam and conclusive diagnosis [29]. As clinics may receive cases during the infectious phase [31], CHWs provide an on-the-ground detection mechanism [32]. Proactive detection procedures facilitate the identification of potential cases and ensure persons are brought to the clinic for medical care and standard isolation practices [31].

Following the identification and referral to the camp health centre, CHWs can conduct contact-tracing protocols [32]. Health care teams maximize the mitigation of measles contagion by tracing persons at risk [33], and dedicated CHWs can relieve this task from clinicians, thereby allowing them to treat urgent cases in the clinic. Unimmunized persons can be given a measles vaccination up to 72-hours post-exposure [24]. As this practice requires prompt action and dialogue between CHWs responsible for different zones, an environment of responsibility and self-reliance is created [34].

RESOURCE ALLOCATION IN AT-RISK REGIONS

The use of CHWs to gather data on measles risk factors provides the ability to characterize the demographics of the population at-risk and subsequent health planning methods [35]. Although epidemiologic assessment is important in emergency contexts [36,37], such assessments are of equal importance in managing health in long-term camps [38]. With Syrian refugee camps quickly becoming long-term settlements rather than transient habitations, such surveillance investigations are essential in determining population health status [35]. Trend analyses in camp zones facilitate geographical documentation of seasonal and epidemic patterns of measles [35]. If CHWs are able to gather this information, clinicians are subsequently made aware of disease patterns and become better equipped to provide quality care [35]. Additionally, the CHW-facilitated monitoring system can identify potential outbreaks and call for a large-scale public health intervention [35].

Furthermore, CHWs contribute to security. Given that refugee camps are often adjacent to international borders, there is a greater risk of cross-border epidemics with large population movements [3]. With medical attention in clinics often diverted to life-threatening conditions, preventative medicine is given lower priority in favour of more curative therapies [39-41]. This effort is hampered by the presence of uncoordinated efforts by

short-term humanitarian relief personnel, possibly leading to the depletion of scarce resources [34]. Through trend analyses enhanced by CHW activities, health care teams are better able to anticipate the measles burden and subsequently allocate resources to proper preventative measures [35]. CHWs serve not only as the interface between the health system and the community [9], they remain the lifeline of preventative medicine and by association, outbreak prevention.

POTENTIAL LIMITATIONS OF THE CHW MODEL

Numerous limitations exist and must be considered prior to implementing a CHW model. The vulnerability of this model is increased for the following reasons: the absence of community participation, attrition rates of CHWs, and lack of stewardship [42].

Firstly, the number of CHWs required for large refugee camps is an important consideration. As it may be unfeasible for CHWs to conduct repeated body temperature measurements in unimmunized persons, community buy-in becomes increasingly important. Although CHWs would be trained in the signs and symptoms to look for, this information should be relayed to a family representative to continuously monitor their family members on days where they are not visited by a CHW.

Secondly, although the logistics of using CHWs in refugee camps is not well-defined, remuneration of CHWs in non-refugee camp settings optimizes the success of a program [43]. Within the resource-limited setting of a refugee camp, CHW motivation may diminish. Hence, non-financial incentive mechanisms may need to be developed [44].

Thirdly, appropriate stewardship is required to mitigate the limitations mentioned above [42]. Refugee camps bring together health professionals from different areas for short-term relief efforts [34], which inhibit the formation of a proper network of leadership figures to continuously run the program in long-term settlements. Prior to implementing a CHW program in a refugee camp, an organizational structure needs to be in place to ensure sustainability [42].

CONCLUSION

Measles immunization campaigns by CHWs can mitigate the potentiation of an outbreak. The provision of health care in long-term refugee camps requires a strong community-based approach [35], and the CHW model is intrinsically community-based. By capitalizing on the rapport and trust established between CHWs and recipients [10], there is an increase in compliance in seeking immunization and treatment [17]. This compliance may not occur if foreign medical personnel, unaccustomed to local cultures,

conduct outreach initiatives [34].

By being relatively inexpensive to implement, train, hire and supervise [45], CHWs provide a cost-effective extension to preventative medicine and PHC in refugee camps, particularly with respect to common infectious diseases, such as measles.

REFERENCES

1. International Medical Corps. Syria: The 21st Century's Worst Crisis [Internet]. Los Angeles (CA): International Medical Corps; 2015 [cited 2016 Jul 27]. Available from: <https://internationalmedicalcorps.org/syria-crisis>.
2. Médecins Sans Frontières. Syria two years on: The failure of international aid [Internet]. New York (NY): Médecins Sans Frontières; 2013 Mar 7 [cited 2016 Jul 27]. Available from: <http://www.doctorswithoutborders.org/news-stories/special-report/syria-two-years-failure-international-aid>.
3. Sharara SL, Kanj SS. War and infectious diseases: Challenges of the Syrian civil war. *PLoS Pathog*. 2014;10(11):e1004438.
4. Seear M. An introduction to international health. Toronto: Canadian Scholars' Press Inc.; 2007. Chapter 13, Natural and Humanitarian Disasters and Displaced Populations; 259-282 p.
5. Médecins Sans Frontières. Syria: Measles epidemic reveals growing humanitarian needs [Internet]. New York (NY): Médecins Sans Frontières; 2013 Jun 18 [cited 2016 Jul 27]. Available from: <http://www.doctorswithoutborders.org/news-stories/press-release/syria-measles-epidemic-reveals-growing-humanitarian-needs>.
6. Stone-Brown K. Syria: A healthcare system on the brink of collapse. *BMJ*. 2013;347:f7375.
7. Centers for Disease Control and Prevention. Hospital-associated measles outbreak - Pennsylvania, March-April 2009. *Morbidity and Mortality Weekly Report*. 2012;61(2):30.
8. Kelly HA, Riddell MA, Andrews RM. Measles transmission in healthcare settings in Australia. *Med J Aust*. 2002;176(2):50.
9. Bryant JH. Community health workers: The interface between communities and health care systems. *WHO Chron*. 1978;32(4):144-8.
10. Bender DE, Pitkin K. Bridging the gap: The village health worker as the cornerstone of the primary health care model. *Soc Sci Med*. 1987;24(6):515-28.
11. United Nations High Commissioner for Refugees. Handbook for emergencies. Third Edition ed. [Internet]. Geneva (CH): United Nations High Commissioner for Refugees; 2007 Feb [cited 2016 Jul 27]. Available from: http://www.ifrc.org/PageFiles/95884/D.01.03.%20Handbook%20for%20Emergencies_UNHCR.pdf.
12. Young H, Harvey P. The sphere project: The humanitarian charter and minimum standards in disaster response: Introduction. *Disasters*. 2004;28(2):99.
13. Walt G, Vaughan P. An Introduction to the Primary Health Care Approach in Developing Countries. A review with selected annotated references. London (UK): London School of Hygiene and Tropical Medicine, Ross Institute of Tropical Hygiene Publication No. 13. 1981:61.
14. Cutts F. Training community health workers in refugee camps: A case study from Pakistan. *Disasters*. 1984;8(3):198-205.
15. Ehiri J, Gunn J, Center K, Li Y, Rouhani M, Ezeanolue EE. Training and deployment of lay refugee/internally displaced persons to provide basic health services in camps: A systematic review. *Global Health Action*. 2014;7:1-14.
16. Sparrow A. Syria's polio epidemic: The suppressed truth [Internet]. New York (NY): The New York Review of Books; 2014 Feb 20 [cited 2016 Jul 27]. Available from: <http://www.nybooks.com/articles/2014/02/20/syrias-polio-epidemic-suppressed-truth/>.
17. Stewart JC, Hood WR. Using workers from "hard-core" areas to increase immunization levels. *Public Health Rep*. 1970;85(2):177.
18. Owais A, Hanif B, Siddiqui AR, Agha A, Zaidi AKM. Does improving maternal knowledge of vaccines impact infant immunization rates? A community-based randomized-controlled trial in Karachi, Pakistan. *BMC Public Health*. 2011;11:239.
19. World Health Organization. Measles [Internet]. Geneva (CH): World Health Organization; 2016 Mar [cited 2016 Jul 27]. Available from: <http://www.who.int/mediacentre/factsheets/fs286/en/>.
20. Moss WJ. Measles control and the prospect of eradication. *Current Topics in*

- Microbiology and Immunology. 2009;330:173-189.
21. Perry RT, Halsey NA. The clinical significance of measles: A review. *J Infect Dis.* 2004;189:S4-S16.
 22. Ludlow M, Mcquaid S, Milner D, De Swart RL, Duprex WP. Pathological consequences of systemic measles virus infection. *J Pathol.* 2015;235(2):253-65.
 23. Moss WJ, Griffin DE. Global measles elimination. *Nature Reviews Microbiology.* 2006;4(12):900-908.
 24. Signore C. Rubeola. *Primary Care Update for Ob/Gyns.* 2001;8(4):138-140.
 25. Centers for Disease Control and Prevention. Less pain, more gain: Measles vaccination using a microneedle patch holds great life-saving potential [Internet]. Atlanta (GA): Centers for Disease Control and Prevention; 2015 Apr 1 [cited 2016 Jul 27]. Available from: <https://www.cdc.gov/globalhealth/immunization/stories/microneedle-patch.htm>.
 26. Cutts FT, Monteiro O, Tabard P, Cliff J. Measles control in Maputo, Mozambique, using a single dose of Schwarz vaccine at age 9 months. *Bull World Health Organ.* 1994;72(2):227.
 27. Sheikh M. The health and well-being of refugee children and adolescents: Challenges and opportunities In: Elliott D, Segal U, eds. *Refugees Worldwide Vol 1: Global Perspectives.* United States: Praeger; 2012; 135-160 p.
 28. Werner D. The village health worker: Lackey or liberator? *World Health Forum.* 1981;2(1):46-48.
 29. Berman PA, Gwatkin DR, Burger SE. Community-based health workers: Head start or false start towards health for all? *Soc Sci Med.* 1987;25(5):443-59.
 30. Werner D, Bower B. *Helping health workers learn: A book of methods, aids, and ideas for instructors at the village level.* 1st ed. Palo Alto (CA): Hesperian Foundation; 1982.
 31. International Medical Corps. International Medical Corps teams avert outbreaks in Chad refugee camps [Internet]. Los Angeles (CA): International Medical Corps; 2009 Nov 15 [cited 2016 Jul 27]. Available from: <http://internationalmedicalcorps.org/page.aspx?pid=1334>.
 32. Heydt P. Commentary: The role of CHWs in a Crisis like Ebola [Internet]. New York (NY): Office of the UN Secretary-General's Special Envoy for Health in Agenda 2030 and for Malaria; 2014 Aug 29 [cited 2016 Jul 27]. Available from: <http://www.healthenvoy.org/commentary-the-role-of-chws-in-a-crisis-like-ebola/>.
 33. Guris D, Harpaz R, Redd SB, Smith NJ, Papania MJ. Measles surveillance in the United States: An overview. *J Infect Dis.* 2004;189 Suppl 1:S177.
 34. Dick B, Simmonds S. Refugee health care: Similar but different? *Disasters.* 1983;7(4):291-303.
 35. Elias CJ, Alexander BH, Sokly T. Infectious disease control in a long-term refugee camp: The role of epidemiologic surveillance and investigation. *Am J Public Health.* 1990;80(7):824.
 36. Lechat MF. Disaster epidemiology (editorial). *Int J Epidemiol.* 1975;4(1):5.
 37. Lechat MF. Disasters and public health. *Bull World Health Organ.* 1979;57(1):11.
 38. Kreiss J. Epidemiology and health planning In: Sandler RH, Jones TC, editors. *Medical Care of Refugees.* New York (NY): Oxford University Press; 1987.
 39. Simmonds S, Brown H. Curative medicine or community health? Appropriate health services with refugees. *Disasters.* 1980;4(1):107-10.
 40. Buist NR. Perspective from Khao-I-Dang refugee camp. *Br Med J.* 1980;281(6232):36.
 41. Bhiwandiwala P. Thai initiatives in Kampuchean refugee camps. *Br Med J.* 1980;281(6243):812.
 42. World Health Organization. Community health workers: What do we know about them? [Internet]. Geneva (CH): World Health Organization; 2007 Jan [cited 2016 Oct 16]. Available from: http://www.who.int/hrh/documents/community_health_workers_brief.pdf.
 43. De Zoysa I, Cole-King S. Remuneration of the community health worker: what are the options?. *World Health Forum.* 1983;4(2):125-130.
 44. Haile F, Yemane D, Gebreslassie A. Assessment of non-financial incentives for volunteer community health workers - the case of Wukro district, Tigray, Ethiopia. *Hum Resour Health.* 2014;12:54.
 45. Giblin PT. Effective utilization and evaluation of indigenous health care workers. *Public Health Reports.* 1989;104(4):361-8.

Mind the Gap: Improving Pediatric Cancer Care in Developing Countries

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ABSTRACT

Despite the fact that the majority of childhood cancer cases occur in the developing world, pediatric oncology in developing countries has not been afforded the ground breaking advances and successes that are available in developed countries. It is an underestimated global child health concern, and the factors contributing to the two-tiered cancer outcome profile between developed and developing countries are complex and expansive. There are some initiatives in place, such as the twinning program, that are successfully improving cancer treatment in resource-limited regions, but more international advocacy is needed to make state of the art cancer therapy available to all children.

RÉSUMÉ

Bien que la majorité des cas de cancers pédiatriques se produisent dans des pays en voie de développement, l'oncologie pédiatrique dans ces pays n'a pas pu profiter des avancées révolutionnaires qui sont accessibles dans les pays développés. Cela est un problème de santé pédiatrique mondiale sous-estimé, et les facteurs contribuant au profil à deux paliers des taux de survie du cancer entre les pays développés et ceux en voie de développement sont complexes et de grande ampleur. Il y a des initiatives en place, tels les programmes de jumelage, qui améliorent avec succès le traitement du cancer dans les régions possédant des ressources limitées, mais plus de défense internationale des droits des enfants est nécessaire pour assurer la disponibilité des toutes dernières thérapies contre le cancer pour tous les enfants.

INTRODUCTION

Pediatric cancer is often overlooked when discussing global child health due to the impact of infectious diseases on childhood mortality in developing countries. While infectious diseases are a child health concern, there is a decline in communicable diseases in developing countries while cancer causes a large and growing proportion of childhood mortality [1]. Almost 90% of the world's population of children live in low- and middle-income countries (LMIC) and this is where 84% of childhood cancers occur [2]. The wealth of cases in the developing world underlines the importance of developing strategies for improving pediatric oncology care in LMICs.

THE DISCREPANCY BETWEEN CANCER OUTCOMES IN HIGH-INCOME COUNTRIES (HICs) AND LMICs

A myriad of interrelated issues involving limited health care resources and poverty have shielded many of the recent advances made in cancer treatment and research from reaching developing countries. It is for this reason that they do not experience the positive outcomes found in high income countries (HICs), where over 80% of childhood cancers are cured [3].

One factor contributing to the poorer pediatric cancer outcomes in LMICs is that cancer is underdiagnosed and is often diagnosed at an advanced stage [4]. Embedded within this issue is the lack of population-based cancer registries in many developing

countries, thus limiting our knowledge of the extent of the severity of this problem. Retinoblastoma, a childhood cancer whose outcome largely depends on how early it is diagnosed, is a prime example of the disparities of disease outcomes between developing and developed countries. In developed countries, it is often diagnosed early and the disease-free survival probability reaches 80-90% [5]. Retinoblastoma unfortunately brews silently in LMICs and usually is not diagnosed until the metastatic stage, resulting in much lower survival rates. Some developing countries have implemented educational public awareness campaigns in an effort to diagnose retinoblastoma before it reaches the metastatic stage. A study conducted in Honduras provided positive results in support of the utility of educational campaigns [6]. After the initiation of a retinoblastoma education program to the public, adjoined with a vaccination clinic, the percentage of diagnosed cases showing extraocular spread decreased from 73% to 35% [6]. The educational program proved to be an effective and attainable method of combatting late diagnosis of the disease.

Leukemia is another childhood cancer that unfortunately has a worse outcome in LMICs compared to HICs (75% 5-year event free survival in HICs compared to 37% in LMICs) [7]. The poor outcome could also be attributed to the late diagnosis of this disease in developing countries. A study compared the time between initial symptoms and diagnosis in children with acute myeloid leukemia or acute lymphoblastic leukemia between two referral centres: one in Nicaragua and one in Italy [7]. It was

Keywords: Global Health; Oncology; Pediatrics

shown that the median lag time was longer in Nicaragua than Italy (29 compared to 14 days) and this discrepancy was mainly due to 'physician delay,' which involved the timespan from initial consultation to diagnosis. The authors suggest that a medical educational program promoting suspicion for oncologic diseases for physicians could lessen the delay, as there was a shorter lag time in areas of Nicaragua with a childhood cancer training program in place.

Poor cancer outcomes in LMICs can also be partially explained by treatment abandonment, a major cause of therapeutic failure in the developing world. Treatment abandonment is defined as treatment that is initiated but not completed [8]. Of the new cancer cases that occur yearly in children aged 0-14, 15% were found to abandon treatment [9]. Although this study collected results from countries all over the world of different levels of income, 99% of cases of treatment abandonment were found to occur in LMICs. The reasons for abandonment of therapy in developing countries are numerous and vary greatly among countries and individuals. Many of these reasons are based upon limited financial and medical resources, and lack of social support [8]. For example, in Honduras a study showed that in a population of children with acute lymphoblastic leukemia, treatment abandonment was associated with travel time to the clinic and age younger than 4.5 years [10].

Malnutrition is also an important factor to consider in the discussion of negative outcomes in developing countries. In countries with limited resources, it is believed that malnutrition is present in 50% of children with cancer [11]. Nutritional status is tightly linked to therapeutic outcome as it can greatly affect the response to treatment, the development of comorbidities and the rate of overall survival [11]. There are gaps in knowledge in many areas concerning the particularities of these effects, therefore nutritional interventions should be further investigated to delineate some of these gaps [11]. In resource-limited LMICs, measuring nutritional status in children is another barrier as an inexpensive, accurate and widely available method must be used. There is also no current gold standard for measuring nutritional status, but techniques involving arm anthropometry are feasible in LMICs and have been shown to be more sensitive than those based on body weight [12]. Arm anthropometry measurements include mid upper arm circumference and triceps skin fold thickness, which determine lean body mass and fat mass, respectively [13]. It is important to recognize that there is a substantial void in normative data on body weight and composition of children in LMICs, which limits foundational knowledge for interventional studies.

A lack of supportive care resources in LMICs also plays a role in the poorer outcomes witnessed in the developing world. With a lack of resources in LMICs comes poorer infection control and

correspondingly higher rates of infection in neutropenic patients [4]. This underlines the importance of controlling nosocomial infections in LMICs. A lack of transfusion support is also detrimental to therapeutic outcomes in pediatric cancer. LMICs, which contain about 85% of the population, only collect half of the global blood donations [14]. Therefore, limited availability of blood products in these regions is a notable concern as many pediatric cancer patients may not have timely access to blood products when needed. Another crucial issue is the lack of palliative care in LMICs. With the large incidence of advanced stage cancer diagnosis in resource-limited countries, adequate palliative care programs are of utmost importance but are often lacking in oncologic units. A pediatric palliative care unit was developed in Pakistan in 2008 but there are problems still impeding its success, such as a lack of trained personnel, a lack of outreach programs, and insufficient morphine supplies [15].

TWINNING AND OTHER EDUCATIONAL INITIATIVES IMPROVE CANCER TREATMENT IN LMICs

In recent years, the medical community has become more cognizant of the disparities in pediatric cancer treatment in the developing world and several initiatives have been launched in an effort to improve outcomes in LMICs. An example of a prominent initiative that has proven to be effective is the twinning program. Devised as an effort to build pediatric oncology units in LMICs, the twinning program links an oncology unit in a developed country to a hospital in a developing country [16]. A successful example of the twinning program is the partnership existing between the Hospital for Sick Children in Toronto and Amman, Jordan [17]. This twinning program was a pioneer in the field of neuro-oncology in children – a type of cancer that is more difficult to treat due to the multidisciplinary nature of the specialists required for the appropriate care. The correspondence began with email communication and progressed to monthly video conferences and exchanges between the two institutions. Over the treatment period of the study, from 2002–2006, there was an overall 3-year survival rate of 100% in average risk patients and 81% in high-risk patients [17]. The researchers speculated that the twinning program aided the oncologists in Jordan to refine treatment protocols based on available resources, to develop the proper use of imaging techniques and to discuss exceptions in individual cases requiring special care. The collaboration allowed for valuable consultation between the two institutions and provided an educational experience on both ends.

Aside from the twinning program, more initiatives are in place to improve cancer care in LMICs. Some of these initiatives were designed to decrease the incidence of treatment abandonment, a primary reason for poor cancer outcomes in these regions. An example is a satellite clinic that was opened in Honduras to decrease the travel time to receive care [9]. The pediatric cancer

centre in Honduras is distant from population-dense regions so the implementation of this clinic should decrease travel time for 36% of patients and hopefully decrease the rate of treatment abandonment as well. Another effective initiative took place in Indonesia, where the implementation of a parental education program to poor families decreased the rate of treatment abandonment from 14% to 2% and increased the event free survival from 13% to 29% in poor patients [18]. These researchers were specifically concerned with education in poor families as treatment abandonment occurred at a much higher rate in poor patients, compared to prosperous ones.

FUTURE DIRECTIONS

Although there are many individual success stories in global pediatric oncology treatment, there is certainly more that can be done to ameliorate outcomes in developing countries. The formation of national child cancer strategies in these countries would be very beneficial as many countries have no overarching policy or structure for treatment [19]. A component of this national strategy should include the development of national standards of care and treatment protocols in LMICs. These standards should be developed according to available resources in the specific country and should be feasible to implement. The implementation of these standards should also include the development of risk stratification systems. Risk stratification systems are an integral part to standards of care as they allow for the optimization of treatment by matching the disease risk to treatment intensity to prevent over- or under-treatment. An example of a risk stratification system tailored to the resources available to the region was developed for neuroblastoma patients in developing countries [20]. A method of classifying disease risk based on clinical factors (age, serum ferritin, and serum lactate dehydrogenase) was shown to be just as effective as tests for genomic biomarkers and histological factors, and is more economically feasible in resource-limited areas.

The implementation of national cancer strategies would also involve mandatory reporting and registration of childhood cancer cases [19]. In 2006, only 21% of the world's population was covered in population-based cancer registries, with only 8% of the Asian population and 11% of the African population covered [21]. The collection of this data would allow researchers to determine the burden of disease in developing countries. They can then use this information to improve the efficiency of resource allocation, as well as determine the effectiveness of treatment policies [19].

CONCLUSION

With almost 90% of the world's population of children living in LMICs, pediatric cancer in these regions cannot be neglected [2]. There must be more advocacy on an international scale to work

to improve treatment efficiency and cure rates. Global initiatives by cancer centres in major academic institutions will provide the education and capacity to create sustainable programs to improve cancer care in developing countries. Striving for improvements in pediatric cancer outcomes in less developed regions of our world should be the next step in achieving breakthroughs in the management of this disease.

REFERENCES

1. Liu L, Oza S, Hogan D, et al. Global, regional, and national causes of child mortality in 2000-13, with projections to inform post-2015 priorities: an updated systematic analysis. *Lancet*. 2015;385(9966):430-440.
2. Magrath I, Steliarova-Foucher S, Epelman S, et al. Pediatric cancer in low-income and middle-income countries. *Lancet Oncol*. 2013;14(3):e104-e116.
3. Ellison L, Pogany L, Mery L. Childhood and adolescent cancer survival: a period analysis of data from the Canadian Cancer Registry. *Eur J Cancer*. 2007;43(13):1967-1975.
4. Rodriguez-Galindo C, Friedrich P, Morrissey L, et al. Global challenges in pediatric oncology. *Curr Opin Pediatr*. 2013;25(1):3-15.
5. Chantada G, Qaddoumi I, Canturk S, et al. Strategies to manage retinoblastoma in developing countries. *Pediatr Blood Cancer*. 2010;56(3):341-348.
6. Leander C, Fu L, Pena A, et al. Impact of an education program on late diagnosis of retinoblastoma in Honduras. *Pediatr Blood Cancer*. 2006;49(6):817-819.
7. De Angelis C, Pacheco C, Lucchini G, et al. The experience in Nicaragua: childhood leukemia in low income countries – the main cause of late diagnosis may be “medical delay”. *Int J Pediatr*. 2012.
8. Arora R, Eden T, Pizer B. The problem of treatment abandonment in children from developing countries with cancer. *Pediatr Blood Cancer*. 2007;49(7):941-946.
9. Friedrich P, Lam C, Itriago E, et al. Magnitude of treatment abandonment in childhood cancer. *PLOS One*. 2015;10(9):e0135230.
10. Metzger M, Howard S, Fu L, et al. Outcome of childhood acute lymphoblastic leukaemia in resource-poor countries. *Lancet*. 2003;362(9385):706-708.
11. Sala A, Pencharz P, Barr R. Children, cancer, and nutrition – a dynamic triangle in review. *Cancer* 2004;100(4):677-687.
12. Sala A, Rossi E, Antillon F, et al. Nutritional status at diagnosis is related to clinical outcomes in children and adolescents with cancer: a perspective from Central America. *Eur J Cancer*. 2012;48(2):243-252.
13. Antillon F, Rossi M, Molina A, et al. Nutritional status of children during treatment for acute lymphoblastic leukemia in Guatemala. *Pediatr Blood Cancer*. 2012;60(6):911-915.
14. World Health Organization. Blood safety and availability. [Last modified: July 2016]. [Cited August 29, 2016]. Available from <http://www.who.int/media-centre/factsheets/fs279/en/>.
15. Shad A, Ashraf M, Hafeez H. Development of palliative-care services in a developing country: Pakistan. *J Pediatr Hematol Oncol*. 2011;33:S62-S63.
16. White Y, Castle V, Haig A. Pediatric oncology in developing countries: challenges and solutions. *J Pediatr*. 2013;162(6):1090-1091.
17. Qaddoumi I, Musharbash A, Elayyan M, et al. Closing the survival gap: implementation of medulloblastoma protocols in a low-income country through a twinning program. *Int J Cancer*. 2008;122(6):1203-1206.
18. Mostert S, Sitaesmi N, Gundy C, et al. Comparing childhood leukemia before and after the introduction of a parental education programme in Indonesia. *Arch Dis Child*. 2010;95:20-25.
19. Gupta S, Rivera-Luna R, Ribeiro R, et al. Pediatric oncology as the next global child health priority: the need for national childhood cancer strategies in low- and middle-income countries. *PLOS Medicine*. 2014;11(6):e1001656.
20. London W, Moroz V, Hero B, et al. A neuroblastoma risk classification model for developing countries: a study from the international neuroblastoma risk group database. *Pediatr Blood Cancer*. 2014;61(S2):S119.
21. Ferlay J, Shin H, Bray F, et al. Estimates of worldwide burden of cancer in 2008: GLOBOCAN 2008. *Int J Cancer*. 2010;127(12):2893-2917.

First Nation and Medical Student Perspectives on the Participation in Culturally Immersive Learning Experiences During Medical Training

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ABSTRACT

Immersive cultural learning placements in First Nations communities allow medical students to develop a first-person perspective and a deeper understanding of the determinants of Indigenous health. Complementary student and community viewpoints on a medical student placement at Mattagami 71 reserve, a First Nations community in Northern Ontario, are presented in this commentary.

RÉSUMÉ

Les placements d'apprentissage culturel par immersion dans les communautés des Premières Nations permettent aux étudiants en médecine de développer une perspective personnelle et une compréhension approfondie des déterminants de la santé chez les personnes autochtones. Ce commentaire présente les points de vue complémentaires d'une étudiante et d'un membre de la communauté sur un placement étudiant à la réserve Mattagami 71, une communauté des Premières Nations dans le nord de l'Ontario.

INTRODUCTION

Understanding and integrating concepts in Indigenous health are essential in delivering comprehensive medical education in Canada. The twenty-fourth Call to Action put forth by the Truth and Reconciliation Commission (TRC) asks that cultural competency training covering “the history and legacy of residential schools, the *United Nations Declaration on the Rights of Indigenous Peoples*, Treaties and Aboriginal rights, and Indigenous teachings and practices be integrated into the education of health professionals” [1]. While comprehensive coursework might often technically satisfy this obligation, several Undergraduate Medical Education (UGME) programs offer students the opportunity to partake in learning experiences of greater depth, in the form of integrated community learning. Medical students at the Northern Ontario School of Medicine (NOSM), for instance, spend four weeks during the first year of their program living in various First Nations communities across Northern Ontario. There, they continue their regular medical studies while spending the majority of their time immersed in daily community life. A variety of settings (cultural, clinical, leisure, etc.) provide a space for students and community members to share their stories, values, needs, and goals in a reciprocal learning environment. The communities are encouraged by the school to direct the experiences of the learners as they wish, exposing them to cultural and social activities that are of importance to that specific community. As a result, the perspectives gained from the student experiences cannot be generalized across all Indigenous communities. These integrative community experiences nevertheless allow students to develop a better appreciation of how historical, systemic, and lifestyle factors are determinants in the health of Aboriginal com-

munity members [2].

Mattagami First Nation, a small, road accessible Ojibway/Oji-Cree First Nation community in northern Ontario, has hosted first year medical students from NOSM each year for the past 10 years. This commentary offers complementary perspectives on a NOSM medical student placement at Mattagami. The student, Caitlyn Vlasschaert, shares her perspective on how the experience has shaped her professional development, while Jennifer Constant, a Mattagami band council member, relays historical and community perspectives, and offers concluding remarks.

HISTORICAL PERSPECTIVE

Mattagami First Nation, like most other First Nation communities in Canada, has a long history of colonialism and systemic oppression. Our people once lived on the land and were self-sufficient in their hunting and gathering practices. Seasonal gatherings occurred annually. Traditional medicines were harvested and used in our territory. Having an understanding of this perspective is important: our people had the freedom to carry-out their way of life and traditional practices. Systems existed as well, and included governance, education, justice, environment management, wildlife management, etc. These altogether helped our people and communities live in harmony with our environment and our neighbours, while also serving to protect and provide for our community.

A number of Hudson Bay posts were established within our territory throughout the 19th century, which influenced and drove the practice of trapping for the fur trade. Treaty 9 was signed in

Keywords: Indigenous Health; Integrated Community Learning; Cultural Competence

Mattagami on July 7, 1906. The relationship at this point in time with our visitors and settlers had already started changing with dire effects to be realized soon after. Reserve systems were created and imposed shortly after the signing of treaties. *The Indian Act* (1876) had set the framework for deception and prevarication. A confined and unnatural way of life was imposed onto a people who were healthy, vibrant, physically strong and skilled, and self-governing. While several oppressive systems imposed upon Aboriginal people have since been abolished, they leave in their wake much devastation.

A common misconception exists that our socio-economic situation is one that we have created as a result of laziness and lack of competency or capacity. These stereotypes have adverse effects on the quality of care received by Indigenous people accessing any type of service. Several recent initiatives have sought to dispel misconstrued beliefs by exposing the truth. The TRC focused its work on residential schools. The accounts reported through the TRC gave a voice to those who endured this particular aspect of the system of oppression imposed upon Indigenous people. Those who survived this system lived a life forever affected by the trauma they experienced. The quality of life of First Nations people remains disproportionately filled with the compounded effects of this trauma, poverty, and internalized oppression (or a perceived inferiority). Intergenerational trauma, and the lateral violence that results, is a grave issue that perpetuates an unhealthy social atmosphere within many communities. These symptoms of oppression affect general mental and physical health [3]. Among the TRC's Calls to Action are explicit requests that accurate renderings of Canada's history regarding the treatment of its Indigenous population (including its contemporary repercussions) be incorporated into formal education systems, from elementary to professional school curricula.

STUDENT PERSPECTIVE

Forming a better picture of my role in Aboriginal healthcare

Prior to my placement, I read an array of literature in order to become familiar with "key concepts" in Aboriginal health. These readings covered, among other topics, the historical context of Indigenous people in Canada, sacred and traditional medicines, and the delivery of healthcare services to "Status Indians," as defined by *The Indian Act* (1876), through federal agencies. I developed a broad understanding of factors affecting the Aboriginal population, including the timeline of colonial atrocities (e.g. the residential school system, '60s Scoop; see *Indigenous Foundations* [4] for further reading) and the need for reconciliation and culturally safe healthcare. My theoretical frames of reference, however, lacked a concrete understanding of how these factors actually affect daily community life and health in Mattagami, similar to how reading about a disease process doesn't necessarily

mean you'll be able to predict or identify its clinical presentation. Over the course of my time in Mattagami, I connected with several community members largely due to our common ground (my hometown – the closest urban community to Mattagami – is actually the place of residence of many band members). In routinely bonding over shared experiences, I found myself at times forgetting that the people with whom I was interacting may hold important sets of values that I was there to learn about. Conversely, I wondered if forcing an unnatural context recollection meant I had overestimated its importance in this community. Though I initially struggled with the semantic difference between the meaning of culturally sensitive care and the process of "othering" or reinforcing an "us-them" mentality, living in Mattagami for a month allowed me to be exposed to the community's diversity and afforded me an intuitive comfort in gauging the appropriate level of attention to be given to the Aboriginal context. In addition, shadowing both Aboriginal and non-Aboriginal health care workers in the community enabled me to learn not just when, but how traditional practices and values are factored into care. Altogether, I consider my learning experiences in Mattagami First Nation to have been invaluable to my future practice of medicine as they allowed me to reshape the theoretical frames of reference I'd constructed to reflect my actual experiences in Aboriginal health care.

FIRST NATION PERSPECTIVE

Relationship building through cultural immersion placements

The relationship that has been established between NOSM and Mattagami First Nation has provided an opportunity for medical students to truly immerse themselves in our community. It has afforded the community the chance to create bonds and meet future service providers. At a minimum, this type of interaction serves a great purpose in itself. Beyond this, the placement provides many opportunities to truly understand one another. In a professional and personal capacity, the First Nation can demonstrate the successes of our community, administration, and governing body, as observed at our many planned events and functions. We get to teach our values, our customs, and our ways in a practical and hands-on manner, which incidentally is the primary method of teaching and learning in our culture. The medical students get to understand our care for our members. They also gain firsthand exposure to the struggles, financial constraints (and subsequent necessary resourcefulness), and different living conditions of our community members. Whether known to them or not, they see and meet the people who have survived residential schools, those who endure intergenerational trauma, those who have survived the '60s Scoop, those who are in the foster care system, as well as those surviving in the reserve system. The medical students also get to witness our efforts to revive our traditional ceremonies, practices, language, etc. The setting fosters

a different type of understanding about why and how our people are the way they are, and why we do the things we do.

CONCLUDING REMARKS

Our story, for too long, was told by others. Telling our truth puts us in a position of vulnerability, but we forge ahead to make our peoples' ways known according to us, by us. With each placement we have formed relationships and friendships between our members, leaders, staff, youth, and guests. We become people who understand each other.

I was once told that many things can't be translated into English from our language; so too, is the understanding of our people to those who only read about it in books. You can know what you read in a book, but you can never truly know the meaning of those words without experiencing and immersing yourself with First Nation people in their community.

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REFERENCES

1. Truth and Reconciliation Commission of Canada. Truth and Reconciliation Commission of Canada: Calls to Action [Electronic monograph in PDF format]. Winnipeg, MB; 2015. Retrieved from: http://www.trc.ca/websites/trcinstitution/File/2015/Findings/Calls_to_Action_English2.pdf.
2. Reading C, Wien F. Health inequalities and social determinants of Aboriginal peoples' health. Prince George, BC: National Collaborating Centre for Aboriginal Health; 2009.
3. Haskell L, Randall M. Disrupted attachments: A social context complex trauma framework and the lives of Aboriginal Peoples in Canada. *Journal of Aboriginal Health*. November 2009;5(3):48-99.
4. University of British Columbia. Indigenous Foundations – Government Policy [Internet]. Vancouver, BC; 2009. Retrieved from: <http://indigenousfoundations.arts.ubc.ca/home/government-policy.html>.

The WHO's Need to Address Insecticide Resistance in Malaria Vectors

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ABSTRACT

Since 2000, incidence and mortality rates attributable to malaria have declined significantly. However, this decline may be short-lived due to the emergence of insecticide-resistant malaria vectors caused by the overuse of indoor residual spraying (IRS) and insecticide treated nets (ITNs). This policy paper will discuss the emergence, causes, and implications of vector resistance and will propose solutions to prevent a future public health crisis.

RÉSUMÉ

Depuis 2000, l'incidence et les taux de mortalité attribuables au paludisme ont diminué significativement. Toutefois, ce déclin risque d'être de courte durée en raison de l'émergence de vecteurs du paludisme résistants aux insecticides, causée par la surutilisation de la pulvérisation intradomiciliaire (PID) et de moustiquaires imprégnées d'insecticides (MII). Cet article de politique discutera de l'émergence, des causes et des implications de la résistance des vecteurs, et proposera des solutions dans le but de prévenir une éventuelle crise sanitaire.

INTRODUCTION

Malaria has long been a disease that has caused much suffering and death in the developing world. In 2015 alone, there were a total of 214 million cases of malaria, with 438,000 resulting deaths – the majority being children from Sub-Saharan Africa [1]. The economic consequences of malaria have also been significant. As an example, the management of endemic malaria has cost some Sub-Saharan countries approximately US\$300 million annually since the year 2000 [1,2]. In addition, estimates from 2010 suggest that malaria has caused a 1.3% decrease in gross domestic product and has accounted for up to 40% of public health expenditure in these countries [1,2]. That being said, current indicators and trends are demonstrating that the worst of the disease may now be behind us. Funding for malaria control, prevention, and treatment has reached US \$2.5 billion, resulting in 1.2 billion fewer cases and 6.2 million fewer deaths since 2000, predominantly in Sub-Saharan Africa [1]. These advances have led to a cautious optimism that malaria may one day be brought down to negligible levels. However, the emergence of insecticide-resistant malaria vectors, in part due to policies and recommendations promoting the widespread use of selected insecticides, has threatened these successes. The following policy paper seeks to highlight the shortcomings of the malaria prevention policies enforced by the World Health Organization (WHO), while providing potential strategies to mitigate the development of resistance and prevent a future public health crisis.

CURRENT APPROACHES AND PITFALLS

Two of the most widely used prevention methods promoted by

the WHO include insecticide treated nets (ITNs) and indoor residual spraying (IRS) [1]. ITNs are a primary intervention for effective malaria prevention and control as they act as both a physical and chemical barrier; physically separating humans from vectors and killing vectors via the insecticide coating found on the nets [3,4]. In the case of IRS, insecticide is sprayed on walls and roofs of buildings to kill mosquitoes when they land on such surfaces [3]. Together, ITNs and IRS work to decrease malaria vector density, and in turn lower the potential for human-vector contact. The WHO attributes much of the decline in malaria seen over the past 15 years to the growing use of both interventions [1].

ITNs and IRS both use a limited range of insecticides in their formulations, and are therefore at increased risk for the development of insecticide resistant malaria mosquito vectors resulting from overuse [1,5]. Since 2010, 60 of 78 reporting countries have discovered vector resistance to at least one insecticide type, while 49 reported resistance to two or more insecticide classes [1,5]. Furthermore, resistance has been discovered within all major mosquito vector species in Sub-Saharan Africa and Asia [6-7].

Currently, there are four classes of insecticides available for use in controlling malaria-carrying mosquitoes: organochlorines, organophosphates, carbamates and pyrethroids [8]. However, the WHO has only approved the pyrethroid class of insecticides for use in ITNs, while IRS is mainly pyrethroid-based due to proven effectiveness and cost [8-11]. Unfortunately, the extensive use of pyrethroids has promoted mutations in vectors, specifically affecting voltage-gated channels

Keywords: Malaria; Vector Resistance; Insecticide Resistance; IRS; ITN

which results in insecticide target site insensitivity [1,8,12-13]. As voltage-gated channels are a conserved target for many other insecticides, cross-resistance among various insecticide classes may be conferred in this manner [8,11,14].

The implications of developing resistance are profound, as evidence suggests that loss of pyrethroid insecticide efficacy would result in a 55% decline in malaria control, resulting in an additional 120,000 deaths annually [11]. As an example, malaria vector resistance has already been implicated in the failure of an IRS vector control program in a community in South Africa [11]. Experts suggest that other control programs may have failed due to resistance, although they have likely gone unreported due to the difficulty of teasing out the causes of such failures [11]. The WHO has acknowledged this problem within their Global Plan for Insecticide Resistance Management (GPIRM) [11]. They have stated that resistance has the potential to become a “major public health problem,” having already reported increased rates of resistance [1-2].

STRATEGIES TO ADDRESS RESISTANCE

Although the implementation of ITN and IRS control measures over the past few decades has been impressive, the concurrent acknowledgement and awareness of the vector resistance is only just starting to affect WHO policy. The GPIRM was an important first step in acknowledging the risk of resistance development, and the potential implications of such a public health crisis. However, it is imperative that this plan be put into action, while additional resources and research be implemented and conducted to stop the development of resistance.

At present, the WHO has proposed a few strategies to control resistance development. In particular, they have highlighted the need to introduce insecticide mixtures which could be applied to both ITNs and IRS, in turn killing more vectors [11]. With regards to controlling resistance due to IRS, the WHO recommends additive spraying of pyrethroid-based insecticide, while non-pyrethroids are to be used on a rotational basis because of cost and availability [1,15]. Unfortunately, the risk associated with increased vector resistance is greater when using IRS in comparison to ITNs, as IRS forces a much greater amount of insecticide to be sprayed into the environment, thereby placing strong selective pressure on mosquito populations [14]. As for ITNs, the WHO has no major recommendations to deter the development of resistance as they remain exclusively pyrethroid-based [1,8]. Inevitably, the insecticide of an ITN becomes ineffective through washing and degradation over time, resulting in less effective bed nets which promotes the development of resistant vectors [16]. Ultimately, recent studies within endemic areas have found the effectiveness of ITNs and IRS in vector killing to be lowered by 80%. This estimate of resistance may be underreported, how-

ever, given that this phenomenon has only just begun to emerge in many parts of the world [6,17].

PROPOSED CHANGES

Currently the WHO recommends only the use of the pyrethroid class of insecticides in ITNs [9]. As such, the development of alternative insecticides for use in ITNs would be highly beneficial. Various studies have demonstrated that non-pyrethroid insecticides are equally effective in killing mosquitoes, although not all have been adequately studied as a singular insecticide component for this application [15,18]. Conversely, IRS insecticides are not solely pyrethroid-based, although the majority of IRS use this insecticide due to known effectiveness and lower cost [1]. As such, the WHO should work to support countries in using an IRS insecticide rotation, which employs additional insecticides in combination with pyrethroids, thereby preventing resistance selection pressures in vectors [11]. Furthermore, the WHO should also place more attention and resources on the development of bed nets and sprays that incorporate multiple types of insecticides. A similar therapeutic combination strategy, known as artemisinin combination therapy (ACT), has been successfully applied in the prevention of malarial parasite resistance to anti-malarial treatments [2]. Recently, the WHO approved a combination ITN, which included both a pyrethroid insecticide and piperonyl butoxide (a non-insecticide) as a synergist to promote insecticide activity [19,20]. By expanding research and development into the range of pesticides used in bed nets, resistance associated with extensive use of a single class of pesticides may be avoided.

Presently, ITNs that are available in most of the global south are either conventional or long-lasting insecticide nets (LLIN). LLINs are manufactured to maintain their biological efficacy for a minimum of 3 years or 20 washes, as insecticides are incorporated and bound to the individual fibres of the net [4]. Conversely, conventional ITNs are dipped into an insecticide solution – and thus the insecticide is not built into the net, requiring retreatment a minimum of once per year [4]. As previously mentioned, conventional ITNs begin to demonstrate decreased potency within one year of use, thereby promoting the survival and selection of insecticide resistant mosquitoes [21]. As such, the WHO should continue in their support of LLIN use, but should also actively replace and improve existing conventional ITNs that are being used in households.

In conjunction with these interventions, the WHO would benefit from improving surveillance, monitoring and diagnostic measures to prevent malaria resurgence and the development of resistance. Research has already suggested that resistance rates are underreported, potentially reducing the effectiveness of future interventions [6]. Although the WHO has created a global

insecticide resistance database to track trends internationally, the organization has acknowledged that many countries do not carry out adequate monitoring for vector resistance [22]. Furthermore, the timely reporting of monitoring data is an additional concern limiting the utility of such databases [22]. Improvement in assessments of planning, processes, outcome and impact will allow for the measurement of indicators and trends, and will help establish whether goals and targets are being met – thus informing future policy decisions and recommendations, and informing public health actions [23].

CONCLUSION

Malaria incidence and mortality rates have been steadily declining for over a decade throughout malaria endemic countries [1]. However, these successes may be short-lived if the WHO does not significantly increase its efforts to prevent widespread malaria vector resistance to available insecticides. Although the desire to reduce current malaria incidence through extensive use of ITNs and IRS is admirable, the WHO must also recognize that such policies and recommendations may contribute to the resurgence of malaria due to widespread insecticide resistance. Therefore, the WHO should be proactive in ensuring that the reductions seen in malaria incidence and mortality are sustained, preventing a resurgence of malaria through resistance control. The WHO still has time to modify their policies and recommendations, as well as support alternative interventions, research and development against resistance. Otherwise, insecticide resistance in vectors has the potential to become a public health crisis which may erase decades of tremendous success fighting malaria.

REFERENCES

- World Health Organization. World Malaria Report 2015 [Internet]. Geneva: World Health Organization; 2015 Dec [cited 2016 Feb]. 280 p. Available from: <http://www.who.int/malaria/publications/world-malaria-report-2015/report/en/>.
- World Health Organization. World Malaria Report 2010 [Internet]. Geneva: World Health Organization; 2010 [cited 2016 Feb]. 238 p. Available from: <http://www.who.int/malaria/publications/atoz/9789241564106/en/>.
- World Health Organization. Global Malaria Programme Indoor Residual Spraying [Internet]. Geneva: World Health Organization; 2006 [cited 2016 Feb]. 16 p. Available from: http://apps.who.int/iris/bitstream/10665/69386/1/WHO_HTM_MAL_2006.1112_eng.pdf.
- World Health Organization. Global Malaria Programme Insecticide-Treated Mosquito Nets: a WHO Position Statement [Internet]. Geneva: WHO; 2007 [cited 2016 Feb]. 12 p. Available from: <http://files.givewell.org/files/DWDA%202009/Interventions/Nets/itnspospaperfinal.pdf>.
- Yewhalaw D, Wassie F, Steurbaut W, et al. Multiple insecticide resistance: an impediment to insecticide-based malaria vector control program. *PLoS One*. 2011; 6(1):e16606.
- African Network for Vector Resistance. Atlas of Insecticide Resistance in Malaria Vectors of the WHO African Region [Internet]. Harare: ANVR; 2005 Oct [cited 2016 Feb]. 27 p. Available from: http://www.afro.who.int/index.php?option=com_docman&task=doc_download&gid=2141.
- Paeporn P, Supaphathom K, Srisawat R, et al. Biochemical detection of pyrethroid resistance mechanism in *Aedes aegypti* in Ratchaburi province, Thailand. *Trop Biomed*. 2004;21(2):145-151.
- Malaria Consortium. Insecticides Fact Sheet [Internet]. London: Malaria Consortium; 2011 [cited 2016 Feb]. 3 p. Available from <http://www.malariaconsortium.org/resources/publications/19/insecticides-fact-sheet>.
- World Health Organization. WHO recommended insecticide products treatment of mosquito nets for malaria vector control [Internet]. Geneva: World Health Organization; 2007 [cited 2016 Feb]. 1 p. Available from: <http://www.who.int/whopes/recommendations/en/>.
- Kelly-Hope L, Ranson H, Hemingway J. Lessons from the past: managing insecticide resistance in malaria control and eradication programmes. *Lancet Infect Dis*. 2008;8(6):387-389.
- WHO Global Malaria Programme. Global Plan for Insecticide Resistance Management in Malaria Vectors [Internet]. Geneva: World Health Organization; 2012 [cited 2016 Mar]. 24 p. Available from: http://www.who.int/malaria/vector_control/gpirm_executive_summary.pdf?ua=1.
- World Health Organization. Techniques to detect insecticide resistance mechanisms (field and laboratory manual) [Internet]. Geneva: World Health Organization; 1998 [cited 2016 Feb]. 42 p. Available from: http://www.who.int/malaria/publications/atoz/who_cds_cpc_mal_98_6/en/.
- Awolola T, Oduola O, Strode C, et al. Evidence of multiple pyrethroid resistance mechanisms in the malaria vector *Anopheles gambiae* sensu stricto from Nigeria. *Trans R Soc Trop Med Hyg*. 2009;103(11):1139-1145.
- Greenwood BM, Fidock D, Kyle D, et al. Malaria: progress, perils, and prospects for eradication. *J Clin Invest*. 2008; 118(4):1266-1276.
- World Health Organization. WHO recommended insecticides for indoor residual spraying against malaria vectors [Internet]. Geneva: World Health Organization; 2013 [cited Feb 2016]. 1 p. Available from: http://www.who.int/whopes/Insecticides_IRS_Malaria_25_Oct_2013.pdf.
- Clarke S, Bøgh C, Brown R, et al. Do untreated bednets protect against malaria? *Trans R Soc Trop Med Hyg*. 2001;95(5):457-462.
- N'Guessan R, Corbel V, Akogbéto M, et al. Reduced Efficacy of Insecticide-treated Nets and Indoor Residual Spraying for Malaria Control in Pyrethroid Resistance Area, Benin. *Emerg Infect Dis*. 2007; 13(2):199-206.
- Asidi A, N'Guessan R, Koffi A, et al. Experimental hut evaluation of bednets treated with an organophosphate (chlorpyrifos-methyl) or a pyrethroid (lambda-cyhalothrin) alone and in combination against insecticide-resistant *Anopheles gambiae* and *Culex quinquefasciatus* mosquitoes. *Malar J*. 2005. 4:25.
- World Health Organization: Conditions for use of long-lasting insecticidal nets treated with a pyrethroid and piperonyl butoxide [Internet]. Geneva: World Health Organization; 2015 [cited 2016 Mar]. 2 p. Available from: <http://www.who.int/malaria/publications/atoz/use-of-pbo-treated-lins/en/>.
- Guillet P, N'Guessan R, Darriet F, et al. Combined pyrethroid and carbamate 'two-in-one' treated mosquito nets: field efficacy against pyrethroid-resistant *Anopheles gambiae* and *Culex quinquefasciatus*. *Med Vet Entomol*. 2001; 15(1):105-112.
- Yukich J, Tediosi F, Lengeler C. Comparative cost-effectiveness of ITNs or IRS in Sub-Saharan Africa. *Malaria Matters*. 2007; 2-4.
- World Health Organization. Insecticide resistance [Internet]. Geneva: World Health Organization; 2015 [cited 2016 Mar]. Available from: http://www.who.int/malaria/areas/vector_control/insecticide_resistance/en/.
- The malERA Consultative Group on Monitoring, Evaluation, and Surveillance. A Research Agenda for Malaria Eradication: Monitoring, Evaluation, and Surveillance. *PLoS Med*. 2011;8(1): e1000400.

Pioneering International Collaboration in Medical Education: The Ottawa-Shanghai Joint School of Medicine (OSJSM) Student Builder Program (SBP)

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ABSTRACT

Shanghai is one of the world's fastest growing megacities. With a population of 24 million, it is clear that there is a huge demand for healthcare services. With the establishment of the first Canadian-International medical school, Ottawa-Shanghai Joint School of Medicine (OSJSM), four Student Builders were chosen to pilot clinical learning at Shanghai Jiao Tong University (SJTU) affiliated hospitals. Students were given opportunities to learn about the healthcare system in Shanghai, to work closely with medical students and physicians, to complete pre-clerkship observerships, and to be immersed in Chinese culture. The ongoing purpose of the Student Builder Program (SBP) is to evaluate the feasibility of having comprehensive undergraduate medical student engagement between the two cities. Students spent over 3 months in clinical settings with SJTU affiliated hospitals. Additionally, students worked closely with the OSJSM Student Affairs Office (SAO), delivered a presentation about Ottawa's medical curriculum to SJTU faculty, as well as conducted clinical research. To gain a deeper understanding of Chinese healthcare, students also had the opportunity to take a one-month Traditional Chinese Medicine (TCM) course. As a result, the Canadian medical students became familiarized with the Chinese healthcare system and culture, in addition to expanding their knowledge in medicine. This experience also provided the students with an opportunity to work with a large volume of patients. Moreover, the physicians at SJTU affiliated hospitals (primarily Renji Hospital) were able to gain a deeper understanding of University of Ottawa's medical school curriculum and clinical teaching methods.

RÉSUMÉ

Shanghai est une mégapole connaissant une des croissances les plus rapides. Avec une population de 24 millions de personnes, il est clair qu'il y existe une demande soutenue de services de soins de santé. À la suite de la fondation de la première école de médecine canadienne internationale, soit l'École conjointe de médecine Ottawa-Shanghai (ECMOS), quatre étudiants « bâtisseurs » ont été sélectionnés pour être les premiers à explorer l'enseignement clinique offert dans les hôpitaux affiliés à l'Université Jiao Tong de Shanghai (UJTS). Les étudiants ont eu la possibilité d'en apprendre plus au sujet du système de soins de santé à Shanghai, de travailler en étroite collaboration avec des étudiants en médecine et des médecins, de compléter des stages observatoires du préexternat, et de s'immerger dans la culture chinoise. L'objectif du programme des étudiants-bâtisseurs, qui persiste à ce jour, est d'évaluer la possibilité d'établir un partenariat complet entre les deux villes, dont bénéficieraient les étudiants de premier cycle en médecine. Les étudiants ont passé plus de trois mois en milieu clinique dans les hôpitaux affiliés à la UJTS. En outre, ils ont travaillé de près avec le Bureau des services aux étudiants du ECMOS, ont présenté le curriculum médical d'Ottawa à la faculté de la SJTU, et ont effectué de la recherche clinique. Afin d'approfondir leur compréhension des soins de santé chinois, les étudiants ont aussi eu l'occasion de suivre un cours de médecine chinoise traditionnelle pendant un mois. Par conséquent, les étudiants en médecine canadiens se sont familiarisés avec le système de soins de santé chinois et la culture chinoise, en plus d'avoir acquis de nouvelles connaissances médicales. Cette expérience a aussi permis aux étudiants de travailler avec un grand nombre de patients. De surcroît, les médecins des hôpitaux affiliés à la UJTS (principalement l'hôpital Renji) ont pu développer une meilleure compréhension du curriculum médical à l'Université d'Ottawa et de ses méthodes d'enseignement clinique.

INTRODUCTION

As the world becomes increasingly globalized, medical schools are looking for ways to create programs and partnerships that reflect changes in the global landscape through a process known as internationalization [1]. The internationalization of medical schools and their curriculums present many challenges but also opportunities for students and faculty to mutually advance the

Keywords: Shanghai; Electives; OSJSM; Jiao Tong University; UOttawa; Student Builder

medical learning experience in addition to promoting global citizenship [1,2].

The relationship between Ottawa and Shanghai began in 2011 when Shanghai Jiao Tong University (SJTU), the University of Ottawa, and their affiliated hospitals collaborated on medical research projects. With the signing of the Memorandum of Agreement in October 2013 and both schools' commitment to

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innovating medical education, the idea of a joint school of medicine was born. It was not until March 2014 when the new Memorandum of Agreement was signed that the idea of a joint medical school began to turn into a reality with the development of the undergraduate medical education program [3].

With the establishment of the Ottawa-Shanghai Joint School of Medicine (OSJSM), four pre-clerkship Student Builders from the University of Ottawa piloted clinical observerships, worked closely with medical students and physicians, and immersed themselves in Chinese culture and healthcare systems.

The OSJSM Student Builder Program (SBP) serves to foster more comprehensive undergraduate medical student engagement between the two cities. The purpose of this study was to under-

stand the challenges of completing international medical electives, such as when students do not speak the native language. In addition, students sought to understand the differences in the quality and quantity of education to be gained in Shanghai compared to Canada. This study wishes to determine the feasibility of electives in Shanghai and to further emerging opportunities for Undergraduate Medical Education (UGME) students.

METHODS

Four pre-clerkship medical students were chosen (of whom three had completed year one, and one had completed year two), and each student's summer studentship varied in composition. As outlined in **Figure 1**, their work was comprised of the following: exposure to several departments at SJTU affiliated hospitals

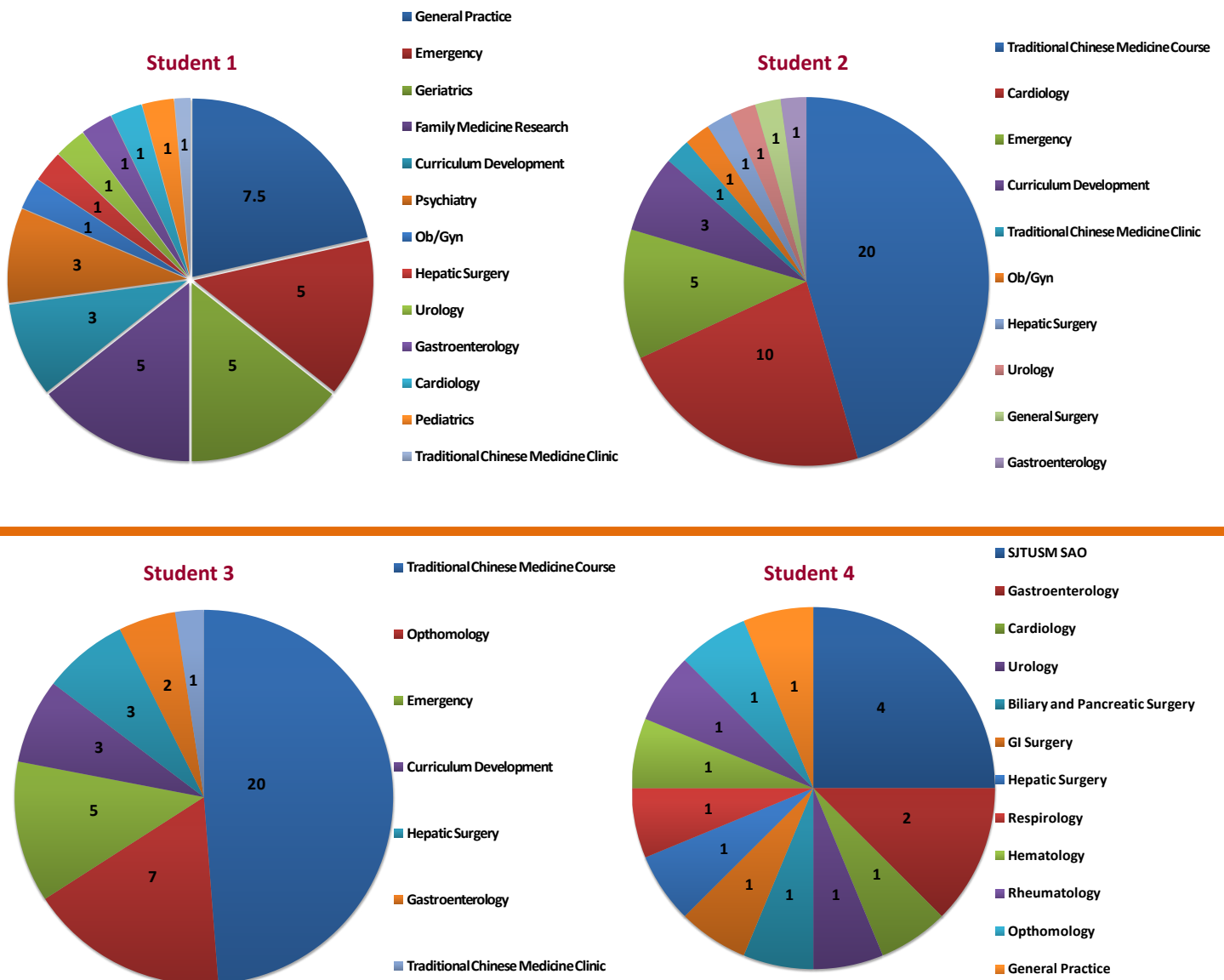


Figure 1: Days spent completing electives for each of the four participants during their summer studentships.

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(mainly at Renji hospital), work with the OSJSM Student Affairs Office (SAO), delivery of a presentation about Ottawa's medical curriculum to Shanghai faculty, participation in a one-month Traditional Chinese Medicine (TCM) course at Shanghai University of Traditional Chinese Medicine, and clinical research in Family Medicine.

Students chose electives based on specialties that Renji Hospital recommended and the individual student's interests. Amount of time spent in each specialty varied from a day to a few weeks depending on student preference. Electives were evaluated to see whether or not they were beneficial for pre-clerkship medical students based on fundamental objectives of any elective: learning the day-to-day lifestyle of physicians in a particular specialty, recognizing the common pathologies of that specialty, and practicing clinical skills (including history taking and physical examination skills). Of interest was the extent that the inherent language barrier and cultural differences had on the learning experience. In terms of collaborating with the OSJSM SAO, focus group discussions, class auditing, and questionnaires were used to understand the SJTU medical education system from the perspective of pre-clerkship students. The SJTU provided significant administrative support to facilitate the observational and focus group discussions. All student interactions were confidential. Information gathered from the students and staff was analyzed and utilized to guide future development of the OSJSM.

Another objective of this studentship was to share the University of Ottawa Faculty of Medicine's pre-clerkship curriculum with the Shanghai faculty, which was achieved through an oral presentation with the aid of a PowerPoint slideshow by JBH, CS and KN. JBH and CS took the opportunity to attend a TCM summer course at the Shanghai University of Traditional Chinese Medicine to better understand an integral part of medicine practiced in China.

Finally, an ongoing clinical research project was undertaken to better understand the primary care needs and perspectives of Shanghai patients in community health centers and tertiary care centers. KN undertook this project in partnership with the staff at the Office of Internationalization and under the supervision of Dr. Dianne Delva (Chair of Family Medicine at University of Ottawa) and Dr. Chao Meng (Professor of Geriatric Medicine at Renji Hospital). A 20-question survey was administered to 400 patients at 2 community health centers and at Renji Hospital, and currently remains in the analysis phase.

RESULTS

All in all, the Shanghai SBP provided an added benefit above and beyond what might be expected in other international elective settings. The gross results include four elective evaluation reports, a Shanghai Medical Student Guide, a curriculum presenta-

tion to OSJSM faculty, a Family Medicine clinical survey, and a submission to the Canadian Conference on Medical Education. This was made possible through the close working relationship with faculty, the support of administrative staff in Ottawa and Shanghai, and the openness of Shanghai partners.

These results can be broadly categorized into both advancing the medical education of Ottawa learners, as well as advancing clinical and faculty development in Shanghai. Current and future Student Builders bear the responsibility of explaining the pros and cons of doing an elective in Shanghai, as well as elaborating on daily survival tips in one of Asia's biggest megacities. These were fulfilled through elective evaluation reports and the Shanghai Medical Student Guide, respectively, which are both available through the Office of Internationalization upon request.

Through the bilateral nature of the SBP, students were also given the opportunity to provide feedback in the hopes of benefiting patients and future learners. This was done primarily through the presentation on Ottawa's medical curriculum, as well as feedback through elective reports. While the OSJSM professors were eager to hear about the strengths and benefits of a North American undergraduate medical education system, they were made aware of weaknesses in Ottawa's UGME curriculum. It may yet prove to be a long time before substantial changes are effected, but the hope is that ongoing bilateral exchanges, such as the SBP, will facilitate positive learning exchange for healthcare systems in Ottawa and Shanghai.

Language

One of the main concerns from the beginning was that the potential presence of a language barrier might hinder the learning experience. This was not the case in most respects. Most preceptors were strong English communicators and thus were able to teach concepts and summarize patient interactions in order for students to learn from patient encounters. In particular, because physicians took extra time to explain each encounter, students generally had more didactic learning during these electives than during electives in Ottawa. It should be mentioned that not all students had the opportunity to take patient histories because of the language barrier. Moreover, students were given procedural skill learning opportunities that would have been otherwise tougher to obtain during electives in Ottawa. For example, a student was taught how to use the slit lamp and was allowed to practice with a medical student from SJTU.

Clinical Learning Advantages

There were many clinical advantages to completing an elective in Shanghai (**Table 1**). Firstly, completing an elective in a large tertiary hospital allowed students to be exposed to a higher patient volume and greater disease variety than in Ottawa. This created

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Table 1: Comparison of students' pre-clerkship electives in Shanghai versus Ottawa in various medical fields

Specialty	Shanghai	Ottawa
Ophthalmology	<p>Strengths:</p> <ul style="list-style-type: none"> • Able to observe in OR • Direct access to staff physicians • Learned how to use slit lamp • Can be booked 1 week in advance • Able to see imaging techniques <p>Weaknesses:</p> <ul style="list-style-type: none"> • Did not have teaching scopes • Language barrier: doctor had to summarize findings and interaction post-examination 	<p>Strengths:</p> <ul style="list-style-type: none"> • Able to communicate with patient, follow doctor-patient interaction • Have teaching scope in 1 room <p>Weaknesses:</p> <ul style="list-style-type: none"> • Not allowed to observe in OR • Shadowed residents • Did not have the opportunity to learn slit lamp • Must be booked months in advance • Limited exposure to imaging
Emergency	<p>Strength:</p> <ul style="list-style-type: none"> • High volume • More available shifts in ER <p>Weaknesses:</p> <ul style="list-style-type: none"> • Little bedside teaching • Less physician-patient interaction • No student-patient interaction • Poorly structured emergency system & specialty • Physicians not accustomed to teaching international pre-clerkship students 	<p>Strengths:</p> <ul style="list-style-type: none"> • High quality teaching • One on one exposure to patients in pre-clerkship • Procedural learning (i.e. stitches) • History/Physical with feedback <p>Weaknesses:</p> <ul style="list-style-type: none"> • Less volume • Hard to find availability in TOH emergency for electives
Cardiology	<p>Strengths:</p> <ul style="list-style-type: none"> • Observed PCI and PDA • Observed cardiac care unit rounds • Observed Treadmill tests • Observed Echo lab • Observed electrophysiology and ablation • Observed cardiac MRI <p>Weaknesses:</p> <ul style="list-style-type: none"> • Did not take patient histories and conducted minimal physical exams 	<p>Strengths:</p> <ul style="list-style-type: none"> • Observed PCI • Observed cardiac care unit rounds • Took patient histories and conducted physical exams in outpatient clinic • Shadowed doctor <p>Weaknesses:</p> <ul style="list-style-type: none"> • Not enough exposure to outline significant weaknesses
General Practice	<p>Strengths:</p> <ul style="list-style-type: none"> • General practice exists in Community Health Centers and Stations around Shanghai • General practice emphasizes home visits, prescription renewals, TCM <p>Weaknesses:</p> <ul style="list-style-type: none"> • General practice limited in scope by pharmaceutical distribution policy, by infection control policy, by training, by practice limitations • Minimal history or physical exams done by physicians, even fewer by students 	<p>Strengths:</p> <ul style="list-style-type: none"> • Family Medicine introduced very early in Medical school curriculum, mandatory exposure • Family medicine wide ranging in scope, and self regulated limits • Students take patient histories, physical exams, differential diagnoses done under supervision by preceptors <p>Weaknesses:</p> <ul style="list-style-type: none"> • Preceptor dependent variable experience • Lower volume of patients (though highly variable across clinics)

Abbreviations:

OR: Operating Room

ER: Emergency Room

TOH: The Ottawa Hospital

PCI: Percutaneous Coronary Intervention

PDA: Patent Ductus Arteriosus

MRI: Magnetic Resonance Imagin

TCM: Traditional Chinese Medicine

more opportunities for students to learn and apply their knowledge. Another highlight of completing electives at Renji Hospital were the staff physicians, who were easily accessible, even with short notice, and were very enthusiastic about teaching. Physicians were eager to educate, to show students their specialty of medicine, and to provide them with unique opportunities including: cardiac MRI, TCM, scrubbing in during allogeneic liver transplant surgery, watching endoscopic sub-mucosal dissection, and watching ophthalmologic surgeries. When students observed surgeries or medical procedures, staff physicians generally erred on the side of caution, resulting in students facing less ethical concerns. Finally, completing electives in Shanghai allowed for cross-systems learning, as students were able to learn about the Chinese healthcare system and the staff physicians learned about the Canadian healthcare system. Primary care systems and specialist referrals were among the highlighted topics discussed, compared, and researched. Overall, students were able to acquire knowledge, apply core concepts learned in pre-clerkship, and observe a variety of procedures.

Main Clinical Disadvantages

On the other hand, in order to appreciate and provide care to patients from a completely different culture, one has to spend a significant amount of time living in Shanghai to be fully immersed in the culture. Not unlike most healthcare systems, Chinese healthcare is complex and requires a significant amount of time to appreciate how the healthcare system functions. This understanding would be a necessary pre-requisite to providing effective and culturally appropriate patient care. Therefore, the challenge for most Canadian medical students will be the amount of time that they can spend to be accustomed to the culture of healthcare. For instance, with the heavy patient volume, specialists only have 3 to 5 minutes with a patient and some specialists may see up to one hundred patients in a day. This phenomenon leads to a culture that is heavily reliant on laboratory and radiological testing, as opposed to extensive histories or physical examinations.

With the differences in medical education, Canadian clerkship and pre-clerkship students will be at a different level in terms of medical knowledge and expertise. Most preceptors were not accustomed to international pre-clerkship learners following them and the objectives associated with the observership. When informed about the students' current knowledge and objectives, preceptors then were tasked with facing this new situation and thus had varying levels of success in terms of providing teaching. This aspect will improve as time goes on since the preceptors are given feedback and they will have more experience with international learners.

In terms of the elective experience, elective opportunities varied widely in effectiveness and quality, across departments and be-

tween preceptors (**Table 1**). For instance, electives in Emergency Medicine and General Practice demonstrate that high patient volume can also compromise the quality of teaching as the staff physicians are struggling to meet the demand for healthcare. Preceptors in China are not familiar with pre-clerkship knowledge, which makes it challenging to address learning objectives, but this will improve over time with the development of the partnership.

Traditional Chinese Medicine Course

JBH and CS obtained certificates for completing the 4-week course from the Shanghai University of Traditional Chinese Medicine. The course was taught in English by Chinese physicians and consisted of didactic lectures, clinical workshops for acupuncture and tuina, cultural workshops and field trips, Taiji and Qi Gong, clinical exposure to TCM hospital wards, and Chinese language classes. Although only touching the surface of this complex field, this course shed light on a previously unfamiliar aspect that is an integral part of Chinese healthcare.

DISCUSSION

The SBP offers a unique and advantageous experience with cross-systems learning, high volume procedural learning, OSJSM curriculum development, research opportunities, and most importantly strong student-faculty partnership and post-program involvement when compared to pre-clerkship electives in Ottawa. Bedside teaching at select departments were very accessible in English and well organized, however other departments that were explored had room for pre-clerkship teaching development. However variable, participating students gained clinical and medical education research experience, gained cultural exposure, and furthered the Ottawa-Shanghai Joint Medical School curriculum and partnership development through evaluation facilitated by the first iteration of the SBP. In comparison to the organization of most ad hoc international placements, this elective allows for an unprecedented conversation between visiting and host faculties, as well as students (**Figure 2**). As the program moves forward, students and faculties involved will require additional evaluation for the improvement of future University of Ottawa elective opportunities, Shanghai clinical learning, and the development of the OSJSM.

CONCLUSION

Individually, each of the Student Builders was able to gain valuable clinical exposure and was challenged to approach healthcare in a culturally sensitive manner. Collectively, by collaborating with the students and faculty from both countries, valuable relationships and partnerships were built, which will enhance further student engagement in the OSJSM. From a societal per-

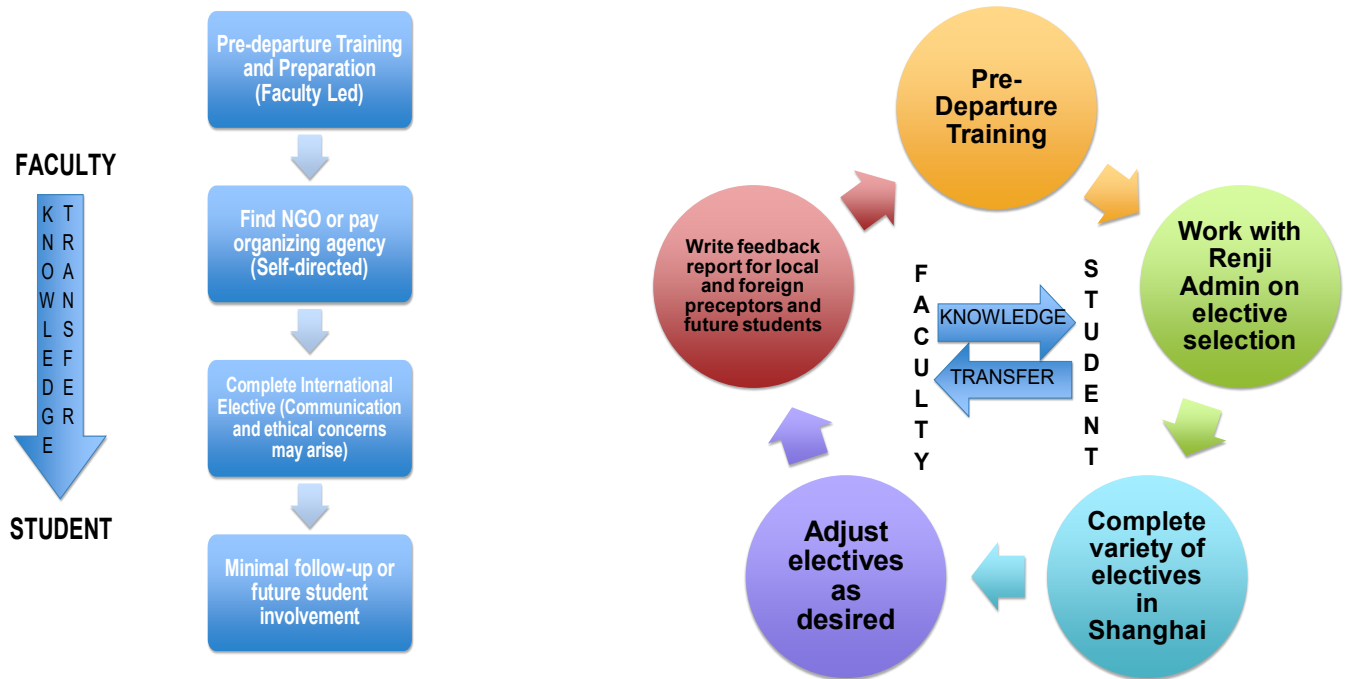


Figure 2: Comparison of ad hoc international electives and Renji Hospital organized electives.

spective, this OSJSM partnership provides an integrated faculty model for Canadian medical schools that mutually and sustainably shares medical knowledge, resources, and education methods globally.

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REFERENCES

1. Hansons L. Global Citizenship, Global Health, and the Internationalization of Curriculum: A Study of Transformative Potential. *Journal of Studies in International Education*. 2010;14(1), 70-88.
2. Harden RM. International medical education and future directions: a global perspective. *Acad Med*. 2006;81(12 Suppl), S22-29.
3. Ottawa Shanghai Joint School of Medicine. History of the Joint School [Internet]. Ottawa (ON): University of Ottawa, Department of Medicine; [cited 2016 Jan 2]. Available from: <http://med.uottawa.ca/joint-school/about-us/history-joint-school>.

Strategies for Improving the International Elective Process: SWOT Analysis of an Elective in Butare, Rwanda

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ABSTRACT

Background: Medical electives in developing countries present challenges in their planning and execution. We are two University of Ottawa Medical School students who recently completed a 3-week pre-clerkship elective in Butare, Rwanda and have insight into the elective planning process.

Methods: A Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis was conducted to evaluate the elective process for areas of improvement. “Internal factors” were defined as those pertaining to the University of Ottawa and us as the elective students. “External factors” were defined as those pertaining to Butare and Rwanda, including the teaching and administration staff, and the hospital itself.

SWOT Analysis: The main strengths of the elective program at the University of Ottawa was its ability to support students in the choice of elective, training, and funding, while the weaknesses involved communication between faculties and students. The opportunities for students included excellent learning opportunities and exposure to novel medical settings, while the threats involved clinical, administrative, and cultural factors.

Conclusion: We present a proposed template of an “elective hand-off” document for students to complete after returning from their elective. This document addresses the significant lack of longitudinal communication between students and presents a more detailed summary of the opportunities and threats associated with a given placement. We also propose mandated email contact between the elective student and the home faculty as well as between home and foreign faculties.

RÉSUMÉ

Contexte: Les stages au choix en médecine dans les pays en développement comportent des défis d'organisation et d'exécution. Nous sommes deux étudiants à l'école de médecine de l'Université d'Ottawa ayant récemment complété un stage au choix au préexternat de trois semaines à Butare, au Rwanda, et avons ainsi une vue d'ensemble du processus de planification de stages au choix.

Méthodes: Une analyse des forces, faiblesses, possibilités et menaces (SWOT, de l'anglais) a été menée pour évaluer les éléments des stages au choix pouvant bénéficier d'améliorations. Les « facteurs internes » étaient définis comme ceux étant reliés à l'Université d'Ottawa et à nous, les étudiants participant au stage. Les « facteurs externes » étaient définis comme ceux étant reliés à Butare et au Rwanda, incluant les personnels enseignant et administratif, et l'hôpital lui-même.

Analyse SWOT: La force principale du programme de stages au choix de l'Université d'Ottawa était sa capacité de soutenir les étudiants dans leur sélection de stages, leur formation et leur financement, alors que sa faiblesse était dans la communication entre les facultés et les étudiants. Les possibilités pour les étudiants incluaient d'excellentes opportunités d'apprentissage et l'exposition à de nouveaux milieux médicaux, tandis que les menaces comprenaient des facteurs cliniques, administratifs et culturels.

Conclusion: Nous proposons un gabarit pour l'évaluation des stages au choix, à compléter par les étudiants lorsqu'ils reviennent de leur stage. Ce document aborde le problème que représente le manque considérable de communication longitudinale entre les étudiants, et offre un résumé plus détaillé des possibilités et des menaces propres à un placement précis. Nous proposons également une communication par courriel obligatoire entre l'étudiant faisant un stage et sa faculté, ainsi qu'entre la faculté de l'étudiant et les autres facultés de médecine.

INTRODUCTION

International medical electives serve as great opportunities for medical students to gain exposure to new types of medicine and healthcare settings, to pursue interest in global health aid work, and to network with healthcare practitioners around the world. In particular, electives in developing countries present students

with perspective into under-resourced healthcare systems and rare illnesses that many Canadian healthcare workers will never encounter. However, the process of planning and executing such electives can be rife with challenges, uncertainty, and even danger. From selecting placement locations with secure accommodations to obtaining immunizations and travel visas, planning international electives is a demanding task, and it is essential that

Keywords: SWOT; Elective; Developing Country

a student's faculty provides guidance for a successful outcome. The Faculty of Medicine at the University of Ottawa facilitates international electives through the Global Health Office. The Global Health Office provides students with a checklist of requirements to complete when requesting approval for an international elective placement including site, location, dates, and medical specialty. It is the student's responsibility to find and confirm the elective independently. The student must also ensure that their essential immunizations are up to date and that they are in good academic standing. Furthermore, the student must attend a pre-departure training course provided by the faculty which outlines an approach to international electives and features experiences from other medical students and physicians while abroad. After the elective is completed, the student must provide the faculty with evidence of feedback from a supervisor that they worked with during their elective along with a self-reflection of their experience.

We are two University of Ottawa medical students who attended a clinical elective at the University Teaching Hospital of Butare in Butare, Rwanda in June 2016. This took place immediately after we completed our final pre-clerkship examinations at the end of the second year of a four-year medical degree. We were each in Rwanda for approximately three weeks, with ten of those days coinciding with the other. We worked on different services but stayed in the same accommodations and met daily for meals and after our respective shifts. Additionally, we prepared for and planned parts of the elective together. Our individual and common experiences gave us insight into the overall elective experience with the unique disposition to reflect upon and evaluate the elective both individually and collectively.

We systematically analyzed our elective experience using a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis. The SWOT model is a commonly used tool in business, industry, education, and community health to assess efficacy and strategize improvements [1-3]. It involves identifying strengths and weaknesses intrinsic to a program or organization itself which are defined as the "internal factors." These are considered in the context of the opportunities and threats posed by the environment in which the program functions which are defined as "external factors."

The purpose of this study was to analyze our elective in Rwanda in order to identify strategies for improving the University of Ottawa's international medical elective process, specifically with regards to electives in developing countries. While our experiences were limited to a pre-clerkship elective in a developing country, we anticipate that the strategies we suggest may be applicable to electives in clerkship and developed countries as well.

METHODS

A SWOT model was used to analyze the elective experience. The "internal factors" were defined as those pertaining to The Faculty of Medicine at the University of Ottawa and the medical students attending the international elective. The "external factors" were defined as those pertaining to the Faculty of Medicine at the National University of Rwanda, the teaching and administration staff at the University Teaching Hospital of Butare, as well as the broader setting of Butare and Rwanda itself.

The SWOT analysis identified key elective components and categorized them into strengths, weaknesses, threats or opportunities. These components were then analyzed using a cross-factor method, identifying strategies in "Strength-Opportunities," "Strength-Threats," "Weakness-Opportunities," and "Weakness-Threats". For example, "Strength-Opportunities" contained strategies that utilized the identified strengths to optimize opportunities, whereas "Strength-Threats" utilized the identified strengths to mitigate threats. Major trends were recognized in each of these groups, which informed the proposed strategies.

STRENGTHS

Freedom of Choice

The Faculty at The University of Ottawa allowed us to attend an international elective in a service and location of our choice, provided that the Canadian federal government had not issued any severe travel warnings for that country. This allowed us to reach out to a breadth of international medical faculties and pursue electives in medical fields in which we were interested and considering as career options.

Pre-departure Training

As medical students attending an international elective we were required to complete a 7-hour pre-departure training course. The course outlined safety and travel precautions, essential immunizations, and expected behaviour and attitude. During the training there were a series of lectures by physicians and students who had worked internationally which provided us with a chance to inquire about different locations and get advice on optimizing our elective experience.

Action Global Health Network (AGHN)

The AGHN is an organization that provides international healthcare resources for professionals and students. The information made available to us included contact information for global health projects and groups, and training modules pertaining to cultural competency and ethics. The AGHN also hosts an annual

global health conference at the University of Ottawa.

Scholarship Opportunity

The Office of Global Health at the University of Ottawa Faculty of Medicine annually provides twenty awards of \$1000 to students attending international electives to mitigate the high costs of international travel. We were both awarded this scholarship pending submission of our elective reflections.

WEAKNESSES

Limited contact to home faculty while abroad

There is currently no mandated contact with the home faculty when the student has arrived at their elective location. Although we were both fortunate to have very positive elective experiences, situations may arise where students face difficulty with transportation, boarding, the hospital setting, or adapting to a new culture. Additionally, the faculty has no way of knowing that a student has arrived at their location safely. This lack of contact could also provoke a sense of isolation for students traveling alone.

Limited feedback to foreign faculty

Following the elective, there was no formal process to give feedback to the faculty with which we did the elective. While student suggestions may not be especially valuable following a single elective, the foreign faculty could utilize ongoing feedback if more students wish to attend the elective in the future.

No communication between home and foreign faculties

Throughout the span of our elective, there was no direct contact between the home and foreign faculties — we facilitated all communication. This jeopardized the potential for a longitudinal relationship between faculties in order to garner a better elective experience for all the involved parties.

Limited longitudinal communication between students traveling to the same centre

While we were fortunate to know a student who had done an elective in Rwanda, there is currently no system in place for students interested in an elective to communicate with past attendees who would be an invaluable resource of suggestions for travel, accommodations, etc. Currently, a host of information is being lost between subsequent electives. While there is an electives database provided by the University of Ottawa Global Health Interest Group, the feedback is limited and does not provide the level

of detail that is practically useful for elective students.

OPPORTUNITIES

Expatriate physicians available to orient and teach

Expatriate physicians working in developing countries can be excellent supervisors and educational resources for visiting elective students. In Butare, there were several physicians from countries such as the United States and Australia who were participating in one-year placements in their department of specialization. The primary goal of these physicians was educating the medical students and residents in Rwanda which created an excellent environment for learners in the department, including visiting students.

Excellent housing available

Situated next to the hospital were student dorms that provided all necessities for approximately \$15 CAD per night. The rooms they provided us were private, clean and secure, and included en suite bathrooms with hot water. Laundry and meals were also offered for very reasonable prices. The proximity of the accommodation to the hospital and the available amenities greatly enhanced the elective experience.

Full service hospital

The hospital at which we were placed was a full-service referral hospital and included subspecialty departments such as otolaryngology. The variety of specialties allowed us to rotate through and see a variety of cases, as well as observe inter-department transfers and consultations.

Teaching hospital

There were many Rwandan medical students around the hospital who provided us with support and orientation. The medical students were very welcoming and willing to share their knowledge about common illnesses in Rwanda such as malaria, while we reciprocated by sharing our knowledge about topics such as developmental disorders in children and mental health disease. The medical students also provided a good example of what kind of responsibilities we could take on as fellow medical students.

Rare illnesses

We had the opportunity to see patients who were sick with regional illnesses that we learn about but rarely see in Canada. These cases served as an invaluable learning opportunity. Some examples of the rare illnesses we encountered were malaria,

rheumatic fever in children, cryptococcal meningitis, osteogenesis imperfecta, trachea-esophageal fistula in an adult, and trauma cases such as stabbings, clubbings, and motor vehicle accidents.

Small registration fee

The hospital asked for a \$200 USD elective fee. Although this may seem expensive, it is extremely small when compared to setting up an international elective with a large company such as Work the World. Additionally, the cost of living in Butare was small compared to any developed country.

THREATS

Language

In Butare, nearly all of the patients exclusively spoke Kinyarwanda. This language barrier made it mandatory to work with another physician, medical student, or allied health care worker to communicate with patients. Often the doctor and patient would speak Kinyarwanda for the entire appointment and the doctor would quickly summarize the interaction for us in English between patients. This situation caused us to miss out on the nuances of the conversation which are key components of clinical encounters.

Limited investigations and tests available

There was no availability of advanced diagnostic medical imaging machines such as CT scanners or MRIs. There was also a lack of laboratory tests available for specific organisms or antibodies. The lack of resources made clinical care and learning difficult at times and facilitated it at other times, as students were required to hone and trust their physical examination.

Different standards of care can put students in difficult ethical situations

The standard of care in Rwanda was very different than in Canada making it difficult to decide when to advocate for patients. For example, pain management is not emphasized in the Rwandan medical system or culture and it was often difficult to know when to advocate for patients to receive proper pain management. Additionally, due to the lack of staff and overcrowding of the hospital, we sometimes felt pressured to do procedures that we may not have been qualified to do in Canada. Even with prior training in dealing with these types of situations the uncomfortable position was unwelcome.

Lower hygiene standard

Many departments ran out of gloves, masks, and alcohol-based

hand sanitizer. Additionally, surgery often used cloth face-masks and caps that were reused and not necessarily washed between wearers. Had we not brought our own personal protective equipment, this would have been a threat to our own health and safety.

No formal orientation to program/hospital

There was no formal orientation upon arrival in Butare. Students were required to find their own way around the hospital and locate the department they were to start in. There was very little contact from the elective administrator and physicians were not always aware we were going to be on their service before our arrival or contact a few days prior.

Limited teaching opportunities

The hospital was understaffed and overcrowded which sometimes created a difficult learning environment. Rwandan doctors were overwhelmed by patient load and had less time for teaching even if they were very eager to do so. There was also a variable amount of enthusiasm by some physicians despite being in a teaching hospital.

Transportation planning can be difficult

Given that the elective was outside of Kigali, where the international airport is located, some extra transportation planning was required by the students. Unlike in Canada, Google searches and telephoning bus companies is not a viable option for planning transportation. Taxis often had to be arranged through hotels or hostels and motorcycle taxis were the standard mode of transportation. Additionally, the Kigali-Butare bus schedule was only available at the bus station where we bought our tickets. The buses were often overfilled and had no designated luggage space.

ANALYSIS

Upon identifying the strengths, weaknesses, opportunities and threats of the elective, major themes were extracted from the information in hopes of creating strategies to enrich the elective experience.

The intrinsic strengths of the University of Ottawa elective program were primarily due to the Global Health Office and its ability to support students in elective choice, training, and funding. Medical students are fortunate to have thorough training prior to departure, and it should be further utilized to address some of the external threats posed by international electives.

The opportunities for students include excellent learning envi-

ronments and exposure to novel ways of practicing medicine. Factors such as safe, comfortable housing and low registration and living costs can be very important to students in unfamiliar settings. The learning opportunities, in the form of both cases and teachers, provided depth and enriched learning that are vital to a successful elective.

The weaknesses of the University of Ottawa elective program involved communication-related factors. The identified gaps in communication expose the need for increased sharing of information between all involved parties in the elective process, namely the current attending medical student, the home faculty, the foreign faculty, and past attendees. The need for communication between the home faculty and the student during the elective is essential, as it poses a personal safety concern for the student especially in developing countries where safety is not always assured. Mandated email contact with the home faculty provides the student with support on arrival in an unfamiliar setting — a crucial time for ensuring the rest of the elective goes smoothly.

The threats posed by the elective setting involved both clinical and administrative components. It is important to note that neither the visiting medical student nor the home faculty can solve all threats, nor is that necessarily an ideal outcome; some of the threats identified may be the reason why the student is interested in the elective in the first place, such as exposure to resource-limited healthcare settings. The goal is for students to recognize what they may encounter and be prepared for all scenarios. Pre-departure training does an adequate job of broadly addressing these threats but it would be useful for students to have specific information about their chosen placement.

STRATEGIES

As an outcome of the analysis we have outlined one primary and two secondary strategies. Our primary strategy is a longitudinal resource that is specific to each elective experience in order to facilitate ease of registration, planning, and preparation. This resource can be implemented into the online electives database and consists of a form that students fill out upon return home from their elective (**Figure 1**). This “elective hand-off” document will contain information outlined in the threats section as well as the opportunities section, which is specific to the elective. The document should be dated and every time a student visits the same location they will update the document with new resources and information. This document will help to enhance the experience of all students doing a future elective in the same location.

A secondary strategy is to mandate contact from students traveling to developing countries or countries with travel precautions once the student has arrived. This point of contact will give the

student a sense of security and allow the student to touch base with the faculty and voice any concerns with the placement.

An additional secondary strategy is to foster a single point of communication between the University of Ottawa Faculty of Medicine and the foreign Faculty of Medicine. When repeated over multiple electives, this could help forge a relationship between faculties and familiarize the foreign faculty with Ottawa medical students, with the hope of making them more inclined to accept elective requests in the future.

CONCLUSION

The SWOT analysis presented outlines specific themes for which the elective process at the University of Ottawa both succeeds and needs improvement. Through this analysis we were able to identify factors that we could influence versus those that were specific to the environment we entered. This served to make the strategies we developed realistic and feasible. Furthermore, the manner in which we defined our internal and external factors allowed us to generalize our findings to other developing country electives facilitated by the University of Ottawa faculty. In all such electives, the internal factors would be the same as those in our analysis, with the external factors having similar themes.

Planning an elective is a great deal of work. While it is incumbent upon medical students to be motivated and proactive in their efforts to attain a placement, it is also crucial that one’s home faculty facilitates a streamlined approach in order to make such a valuable opportunity accessible for their students. Providing resources for finding and contacting foreign faculties, funding opportunities to help mitigate personal costs, along with developing strategies for students to prepare and deal with uncertainties regarding accommodation, transportation, and security during their elective, will undoubtedly optimize the student’s learning experience. We present a proposed template of an “elective hand-off” document for students to complete after returning from their elective. This document addresses the major lack of longitudinal communication between students and presents a more detailed, specific summary of the opportunities and threats associated with a given placement.

REFERENCES

1. Coman A, Ronen B. Focused SWOT: diagnosing critical strengths and weaknesses. *International Journal of Production Research*. 2009;47(20):5677-89.
2. Marques JF. How politically correct is political correctness?: A SWOT analysis of this phenomenon. *Business and Society*. 2009;48(2): 257-78.
3. Panagiotou G. Bringing SWOT into focus. *Business Strategy Review*. 2003;24(2): 8-16.

Research

Location	Length of time
Ground Transportation Advice	
Transfer from airport	
Transfer from airport city to elective city	
Location Advice	
Was your place rural or urban? Was this a positive or negative?	
Accommodation Advice	
Where did you stay?	
Website/Contact Info	
Price	
Comment on cleanliness/safety	
Overall advice on accommodation	
Education Advice	
Is the hospital a teaching hospital?	
Are other learners present?	
Are foreign doctors placed in the hospital? What departments?	
What was the quality of clinical teaching?	
What services did you rotate on?	
Comment on education	
Miscellaneous Advice	
Do you need your white coat?	
Day to day attire?	
What personal protective equipment should be brought?	
Tourism advice	
Extra advice	

Figure 1: Elective hand-off document. This is a form for students to complete post elective to provide key information for future students.

The Borders that Remain: Prevention of Cervical Cancer in Refugee and Immigrant Women in Canada

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ABSTRACT

Objectives: Cancer of the uterine cervix is primarily caused by infection of human papillomavirus (HPV), and annually results in the deaths of 266,000 women worldwide. Screening for cervical cancer, predominantly via Papanicolaou (Pap) tests, has tremendously reduced cervical cancer morbidity and mortality in many developed countries, Canada included. Vaccination against HPV also shows great potential as a preventative measure. Unfortunately, refugee and recently immigrated women are among the least likely to participate in screening or vaccination at rates recommended by national and provincial guidelines. To gain insight into the barriers faced by refugee women in their access to preventative measures against cervical cancer, it is imperative that we understand the current state of screening and vaccination in this population, and the cultural and systemic barriers by which they are affected.

Methods: To gather information on prevention of cervical cancer in refugee women in Canada, three databases were searched: PubMed, CINAHL, and Web of Science. A total of thirteen studies were analyzed, as well as eight other supplemental resources.

Results: Rates of cervical cancer screening among refugee and immigrant women were consistently lower than those recommended by provincial guidelines. However, little research dedicated to analyzing HPV vaccination rates of refugees exists. Predictors of low screening and vaccination rates included low socioeconomic factors, recent entry into Canada, and lack of proficiency in English, whereas indicators of screening participation include longer duration spent in Canada, proficiency in English, and access to female physicians and physicians of a similar ethnic background. Screening rates were notably high in an Ontario facility that offers multidisciplinary support to refugees. Furthermore, a study in the Netherlands has drawn attention to the cultural differences that can act as a barrier to HPV vaccination for immigrants and refugees in Western countries.

Conclusions: Preventative health care initiatives should consider the barriers specific to the population at which they are aimed, and work in close collaboration with multidisciplinary settlement services. Further research regarding HPV vaccination rates among refugees in Canada is also required. In light of the current global refugee crisis, applying the insight gained from this research to the incoming Syrian refugee population will be of vital importance.

RÉSUMÉ

Objectifs: Le cancer du col de l'utérus est causé principalement par le virus du papillome humain (VPH), et est responsable du décès de 266 000 femmes annuellement à l'échelle mondiale. Le dépistage du cancer du col de l'utérus, notamment avec le frottis de Papanicolaou (test Pap), a vastement réduit la morbidité et la mortalité dues au cancer du col utérin dans plusieurs pays développés, incluant le Canada. La vaccination contre le VPH démontre aussi un grand potentiel en tant que mesure préventive. Malheureusement, les femmes réfugiées et les femmes ayant récemment immigré sont parmi les moins susceptibles de participer au dépistage et à la vaccination aux taux recommandés par les lignes directrices nationales et provinciales. Pour mieux comprendre les obstacles auxquels font face les femmes réfugiées en ce qui a trait à l'accès aux mesures préventives contre le cancer du col utérin, il est impératif de comprendre l'état actuel du dépistage et de la vaccination de cette population, et les obstacles culturels et systémiques qui les affectent.

Méthodes: Pour rassembler de l'information sur la prévention du cancer du col de l'utérus chez les femmes réfugiées au Canada, trois bases de données ont été examinées : PubMed, CINAHL et Web of Science. Un total de treize études ont été analysées, ainsi que huit autres ressources supplémentaires.

Résultats: Les taux de dépistage du cancer du col de l'utérus parmi les femmes réfugiées et immigrantes étaient invariablement plus bas que ceux recommandés par les lignes directrices provinciales. Toutefois, il existe peu de recherche dévouée à l'analyse des taux de vaccination contre le VPH chez les réfugiés. Les facteurs prédictifs de faibles taux de dépistage et de vaccination incluent les facteurs socio-économiques faibles, l'arrivée récente au Canada et le manque de compétence en anglais, tandis que les indicateurs prédictifs de participation au dépistage incluent un plus long séjour au Canada, la maîtrise de l'anglais, et l'accès à des femmes médecins et des médecins d'origine ethnique similaire. Les taux de dépistage étaient particulièrement élevés dans un établissement ontarien offrant du soutien multidisciplinaire aux réfugiés. En outre, une étude aux Pays-Bas a attiré l'attention sur les différences culturelles pouvant agir comme obstacle à la vaccination contre le VPH pour les immigrants et réfugiés dans les pays occidentaux.

Conclusions: Les initiatives de soins de santé préventifs devraient considérer les obstacles précis auxquels fait face la population ciblée, et devraient travailler en étroite collaboration avec les services multidisciplinaires d'établissement. Plus de recherche sur les taux de vaccination contre le VPH parmi les réfugiés au Canada est également nécessaire. À la lumière de l'actuelle crise mondiale de réfugiés, l'application des connaissances acquises par l'entremise de cette recherche à la population de nouveaux réfugiés syriens sera d'importance vitale.

Keywords: Cervical Cancer; HPV; Pap Testing; Refugee

INTRODUCTION

Cervical cancer is the malignant, autonomous growth of cells of the uterine cervix [1]. It is primarily caused by chronic infection of an oncogenic form of human papillomavirus (HPV), which is transferred predominantly through sexual contact [2]. The fourth most common form of cancer, cervical cancer annually results in the deaths of 266,000 women worldwide, the majority of whom reside in low- to middle-income countries [3]. In developed countries, cervical cancer and associated death are more prevalent among women older than age 30 [2]. The Canadian Cancer Society currently estimates that 1500 women in Canada will receive a diagnosis of cervical cancer in the coming year, and 380 women will die with the disease [4]. This disease has become largely preventable in Canada and elsewhere due to advances in screening for cancerous or precancerous lesions, vaccination against HPV, and early treatment [5]. Canadian rates of cervical cancer are currently among the lowest in the world, the lifetime risk of diagnosis having fallen from 1.5% in the 1950s to 0.66% in the 2000s [6].

Routine cervical cancer screening among women is vital for disease prevention. Although HPV infection is common, subsequent development of cervical cancer is comparatively rare and progresses slowly [7]. Young women commonly contract transient HPV infections that do not manifest as cervical precancer or cancer, as development of the disease often requires years of chronic infection [1,2]. Therefore, while it is rare for women younger than 30 to develop cervical cancer, it is essential that women between ages 30 and 60 participate in regular screening [1,2]. In Canada, current guidelines suggest that women over the age of 21 receive a Papanicolaou (Pap) test every one to three years, depending on provincial or territorial policies [7]. A Pap test is able to detect abnormal and potentially precancerous or cancerous cells of the cervix [7]. Widespread Pap screening has substantially reduced morbidity and mortality associated with cervical cancer [8]. Recently developed HPV-based screening techniques may provide further sensitivity and aid in the prevention of precancerous lesions if used in conjunction with Pap testing [9]. At this point, however, the Canadian Task Force on Preventative Health Care does not provide recommendations regarding HPV screening practice, stating that further evidence is necessary [9]. Recent initiatives to administer widespread HPV vaccination, particularly among school-aged girls and young adult women, have been predicted to decrease rates of cervical cancer significantly [10]. Women who do not participate in Pap testing, however, remain at highest risk following vaccination, demonstrating the necessity for continuous screening within the appropriate age range [10].

Although approximately 80% of Canadian women currently participate in recommended screening (largely due to population-based screening programs), those least likely to participate in-

clude women who have resided in Canada for less than 10 years and remain culturally and socially isolated [8]. Major indicators for low Pap test rates include low income and education, age, and recent entry into Canada [11]. Racial minorities are more likely to be diagnosed with cancers associated with infectious agents, a category that includes cancers of the cervix, stomach, and liver [12]. It is also more likely for patients of non-white populations to be diagnosed with cancers at more advanced, less treatable stages [12]. Refugee women in Canada comprise a population that often fits the above descriptors, and are therefore at high risk of developing undetected and potentially deadly cervical cancer. The World Health Organization defines a refugee as an individual outside of their home country, who is unable to return to their home country for reasonable fear of persecution on the grounds of race, religion, nationality, or affiliation with a certain group or opinion [13]. These individuals are often at high risk of morbidity and mortality in their new homes due to the factors discussed above. It is therefore essential that health care providers comprehend the complexities of these issues.

This review addresses cervical cancer prevention in refugee and immigrant women, drawing attention to the barriers faced by this population in their access to preventative health care. Primary topics of discussion include cervical cancer screening by way of Pap testing, and vaccination for HPV. By further understanding the issues facing refugees, the Canadian health care system can better mobilize preventative health initiatives to meet the needs of the incoming refugee population.

METHODS

To gather background information on the nature of cervical cancer, statistics regarding its morbidity and mortality, and current guidelines for its treatment and prevention, primarily non-academic sources were consulted. These included resources provided by the World Health Organization, the Canadian Cancer Society, and the Canadian Task Force on Preventative Health Care. These were found on the organizations' web sites, and no exclusionary criteria were necessary for this portion of data collection. Thus, six reports, web sites, or fact sheets from various organizations were used to gain foundational information regarding cervical cancer and its impact on the world today.

Upon gaining foundational knowledge regarding cervical cancer and immigrant and refugee populations, academic sources were analyzed. To determine the appropriate search criteria, central concepts, and key words coinciding with these concepts, were identified (**Figure 1**). Central concepts were identified as "refugee women," "cervical cancer," and "prevention." Sub-concepts under the "prevention" umbrella included "screening" and "vaccination." Key words, to be used for literature search, were then gathered for each major and minor concept. Under the concept

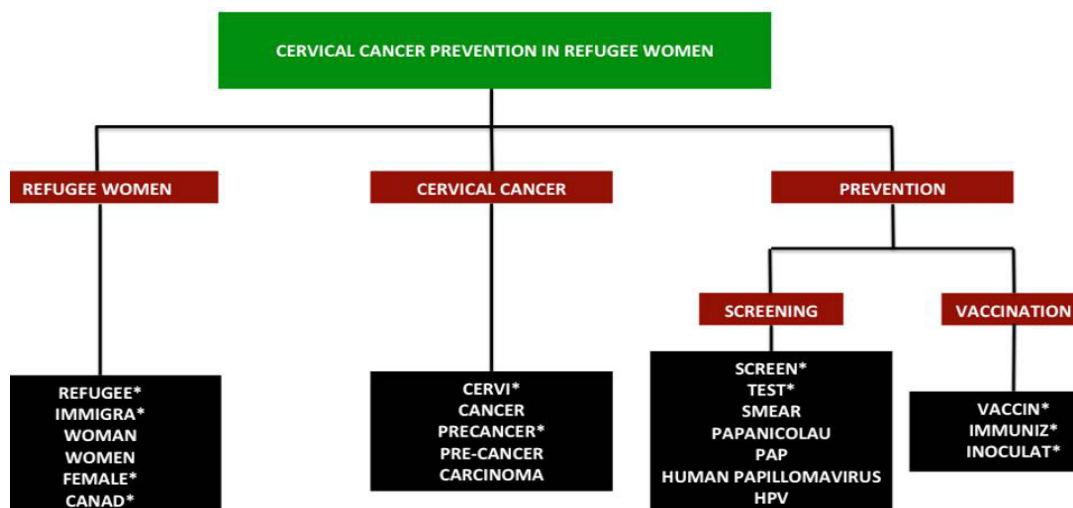


Figure 1: Schematic showing the identification of key words and concepts to be addressed by this literature review.

of “refugee women,” key words included “refugee*,” “immigra*,” “women/woman,” and “female*.” Under the concept of “cervical cancer,” key words included “cervi*,” “cancer*,” “pre-cancer*,” “pre-cancer*” and “carcinoma.” Under the sub-concept of “screening,” key words included “screen*,” “test*,” “smear,” “Pap,” “Papanicolau,” “human papillomavirus” and “HPV.” Under the sub-concept of “vaccination,” key words included “vaccin*,” “immuniz*,” and “inoculat*” (note that “human papillomavirus” and “HPV” had already been identified when dissecting key words under the “screening” sub-concept). The key word “Canada*” was included as well. Thus, for three major concepts, 21 key words were identified.

To gather resources on the topic of cervical cancer prevention in refugee women, various combinations of the key words identified above were used to search three databases of relevant, peer-reviewed journals. These three databases were PubMed, CINAHL, and Web of Science. Abstracts were assessed for preliminary exclusionary criteria before being uploaded to the reference management software, Mendeley. Duplicates, review articles, non-English papers, and papers published before 2006 (i.e. more than 10 years ago) were immediately excluded. Abstracts detailing investigations of non-cervical cancers were often present in search results, but were excluded from this investigation. Abstracts detailing studies performed outside of Canada were initially excluded, but were reconsidered upon realization of how little research exists that explores rates of HPV vaccination in refugees in Canada. Of those that were reconsidered, a single Danish study [14] was included due to its qualitative and highly applicable analysis of health care barriers facing Somali women. Additional relevant studies were discovered upon review of references within those discovered via the databases named above. Thirteen unique abstracts detailing cervical cancer prevention

in refugees were selected for inclusion in this review, as well as eight supplemental resources.

RESULTS AND DISCUSSION

Screening

In Canada, up to 80% of women are successfully reached by organized cervical cancer screening programs [8]. Refugee and immigrant women, however, have consistently shown rates of screening lower than recommended by provincial guidelines [11,15-19]. Several investigations have addressed rates of cervical cancer screening among refugee women and women who have recently immigrated to Canada. One Ontario study found that 46.9% of the study cohort of recent immigrant women was unscreened during the three-year study period [16]. When country or region of origin was analyzed, screening rates were often found to be lowest in women of South Asian origin [17,18], suggesting the importance of specific cultural differences in screening participation. Multiple socioeconomic factors were indicators for low screening rates, including low levels of education and income, minority status, lack of proficiency in English, older age, and recent entry into Canada [11,16,19] (**Figure 2**). Refugees are often of low education and income, causing these factors to become potentially confounding variables. After control for these variables, however, it was noted that women of this population still demonstrated a rate of compliance with provincial screening guidelines that was 23% lower than women born in Canada [11]. Higher income, higher levels of education, lower age, and longer duration spent in Canada were positively associated with an increase in screening frequency among refugees from most ethnic backgrounds, with Vietnamese women standing as an exception in the case of the latter factor [11,18]. One study, however, which

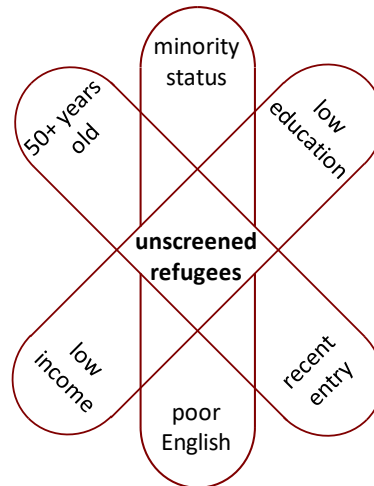


Figure 2: Six predominant non-medical factors that act as barriers to cervical cancer screening among refugee women.

investigated cervical cancer screening of urban immigrants, found that, while immigrant women generally report higher screening rates after a longer duration spent in Canada, rates still do not reach those of Canadian-born women after ten years [17]. Also, although high income has generally been accepted as indicative of high tendency for Pap screening in Canadian-born women, this association was weaker in urban immigrants, suggesting the presence of more significant factors in this population [16-18]. These are implications of fundamental barriers hindering these women in their preventative health care, and potentially their long-term integration into the health care system in general.

To analyze the barriers impeding adequate cervical cancer screening in refugee women, one must become familiar with the challenges faced by this population and the ways in which their incoming culture and experiences may be incompatible with our current approaches to preventative care. As refugee women in Canada are of diverse origins, there exists a multitude of interrelating explanations for their choices and behaviors. Language and cultural barriers can result in lack of knowledge and understanding of preventative procedures, and, especially when coinciding with past trauma, can result in fear of an authoritative physician with whom they would likely struggle to communicate. Proficiency in English was a major indicator for documented Pap tests in refugees at a Toronto, Ontario health center [20], but this finding could not be reproduced in another Ontario study in which most refugee participants were English speakers [11]. Simple lack of access to family physicians was also an inhibitory factor [15]. A 2011 study by Lofters et al. commented on the importance of access to physicians of a cultural or ethnic background similar to that of their refugee patients [16]. Access to female primary care physicians was found to be of even greater importance in increasing rates of screening participation across refugees from all regions of origin [16]. This is unsurprising, as cultures have varied practices regarding the appropriate boundaries of interactions between non-related men and women. Comfort with one's

physician, and with the system as a whole, is paramount to one's active participation in their care, and can help to overcome other social and economic barriers.

A retrospective study by Wiedmeyer et al. investigated the rates of cervical cancer screening among refugee women served by a multidisciplinary community health center in Toronto, Ontario, known as Access Alliance Multicultural Health and Community Services (AAMHCS) [20]. These researchers assessed the documentation of Pap tests in 357 eligible women attending the AAMHCS, and found that 92% of eligible women had been approached for screening, and 80% had been appropriately screened [20]. The only variable that significantly indicated a delay of documented Pap tests was proficiency in English [20]. These screening rates were higher than the local population of similar demographic and socioeconomic status [20]. A limitation of this study was that its setting in a single, particularly accessible clinic limited its applicability to the rest of Canada [20]. In drawing attention to the immense value of a facility that specifically caters to a high-risk population, however, this limitation also represents a significant strength. The AAMHCS strives to overcome the barriers facing refugees by providing longer appointments, access to allied health professionals, translation services, and settlement services [20]. This facility is a shining example of how to address the challenges faced in the preventative care of refugees, and presents a model that other facilities should strive to emulate.

The primary limitation regarding the investigation of screening rates is the use of self-reported data in many studies [11,19]. With self-reported data comes the possibility of inaccuracy due to poorly kept personal records, inaccurate memory, and fear of judgment or other consequences. Conversely, retrospective studies that utilize documentation by health care providers do not bear these same limitations. Also, longitudinal studies, though time-consuming, are less limited than cross-sectional studies in

their ability to fully explore trends within populations, capturing larger windows of patients' lives. Small sample sizes can be problematic, but are sometimes unavoidable when investigating highly specific populations. The existence of multiple studies of various design helps to comprehensively illustrate the picture of cervical cancer screening. All of these limitations are particularly significant when studying a population that is socially and culturally isolated, which may also explain why data regarding refugee screening rates on a nationwide scale are difficult to locate.

Vaccination

Widespread vaccination against HPV has the potential to transcend the inequalities faced by populations at high risk of developing cervical cancer and significantly reduce incidence of the disease [10,19]. Ideally, widespread vaccination would result in lower rates of cervical cancer across demographic groups with differing rates of screening participation. Unfortunately, those factors that correlate with low screening participation, such as low education, low income, and minority status, also correlate with low HPV vaccination rates [10]. It should also be noted that Canada currently approves vaccines against HPV 6, 11, 16, and 18 [6], but that not all cervical cancers can be attributed to these four strains of the virus [10]. Little research exists regarding the rates of HPV vaccination among Canada's immigrant and refugee populations. It is therefore imperative that further investigation takes place in order to optimize vaccine distribution within high-risk populations.

Although research in a Canadian setting is lacking, various investigations have been conducted elsewhere in North America and Europe in an effort to conceptualize the barriers hindering HPV vaccination within immigrant and refugee populations [14,21]. Application of these findings to Canadian refugee populations must be done conservatively, as cultural and systemic differences between various countries of origin and destination could significantly influence the challenges faced by refugees in their respective settings. There is benefit, however, in learning of the perceptions and concerns of refugees in countries with similarities to our own.

One particularly insightful investigation was conducted in the Netherlands in 2015, and used semi-structured interviews to qualitatively explore the perceptions of Somali women with respect to cervical cancer screening and HPV vaccination [14]. This study identified several key barriers to preventative health care in this population, many of which are likely applicable to refugee and immigrant populations elsewhere [14]. One such barrier was a lack of understanding of the purpose and side effects of the injection [14]. These women mistrusted the health care system, and feared the possibility of deception and becoming an unknowing subject of research [14]. Cultural attitudes and

the fear of shame and stigma also inhibited vaccine uptake [14]. Women were self-conscious about the appearance of previously mutilated genitalia, and were concerned that HPV vaccination in adolescent girls was a normalization or encouragement of sex at an inappropriately young age [14]. It is also important to note that the decision-making process of women of this population generally relies upon social connections and the support of cultural peers [14]. However, language barriers often result in adult mothers learning of such things as HPV vaccination through their young, English-speaking daughters, forcing mothers to make decisions without their close peer group [14]. These women noted that the individualized, patient-centered decision-making of Western medicine was incompatible with the group-based decision-making with which they were typically more comfortable [14]. This study was potentially limited by language barriers, which may have resulted in nuances and details being lost in translation, and by the unstructured and public nature of the interviews, which was intended to provide comfort for the interviewees, but may have restricted truthfulness of responses [14]. In spite of these limitations, such personal and culture-specific insights are invaluable in the effort of a health care system to optimize its preventative health strategies for vulnerable populations.

CONCLUSION

The information assembled in this review has helped us to gain insight into the challenges and barriers facing refugee and immigrant women in Canada, and can hopefully be used to optimize our current methods of preventative health care. This review is limited by the ongoing influx of refugees, and the rise of numerous social programs to accommodate them, demanding further research to keep up with this evolving population. Effective cervical cancer prevention initiatives should be based on specific evidence regarding the populations and settings in question, and should be a collaborative endeavor with other vital settlement services, as we have seen in the case of Toronto's AAMHCS [20]. After finding solace from the challenges in their nations of origin, it should not be surprising that the first concern of newly settled refugees is to establish basic needs for themselves and their families in a new country. Barriers to preventative health care preclude this prioritization, however. We should therefore seek to understand these challenges and barriers and address them in a multidisciplinary and culturally competent way. In doing so, we can provide a warm and supportive welcome to our nation.

Further research should explore rates of HPV vaccination in refugees in Canada, and the barriers that prevent refugees from taking this preventative measure. As HPV vaccination has the potential to overcome the inequalities of cervical cancer screening, it is crucial that we learn more of the barriers that prevent it from doing so. Each combination of community of origin and

community of destination creates a unique mosaic of cultures. It is therefore vital that each community receiving incoming refugees conducts research on cervical cancer prevention in their own refugee population. Prevention initiatives aimed at these vulnerable groups will likely be more effective at a local level, and this is why we must assess specific needs and challenges in each individual community. It will be through collaboration and understanding that the greatest impact will be made on the health of these new Canadians.

REFERENCES

- World Health Organization. Comprehensive Cervical Cancer Control. 2nd ed. (Broutet N, O'Neal Eckert L, Ullrich A, Bloem P, eds.). Geneva, Switzerland: WHO Press; 2014.
- Vicus D, Sutradhar R, Lu Y, Kupets R, Paszat L. Association between cervical screening and prevention of invasive cervical cancer in Ontario: a population-based case-control study. *Int J Gynecol Cancer*. 2015;25(1):106-111.
- World Health Organization. Estimated Cancer Incidence, Mortality, and Prevalence Worldwide in 2012 [Internet]. Globocan. [Updated 2012; cited 2016 January 22]. Available from: http://globocan.iarc.fr/Pages/fact_sheets_cancer.aspx.
- Canadian Cancer Statistics. Canadian Cancer Society's Advisory Committee on Cancer Statistics. Toronto, ON; 2015.
- Saraiya M, Steben M, Watson M, Markowitz L. Evolution of cervical cancer screening and prevention in United States and Canada: Implications for public health practitioners and clinicians. *Prev Med*. 2015;57(5):426-433.
- Dickinson JA, Stankiewicz A, Popadiuk C, Pogany L, Onysko J, Miller AB. Reduced cervical cancer incidence and mortality in Canada: national data from 1932 to 2006. *BMC Public Health*. 2012;12(1):992.
- Canadian Cancer Society. Cervical Cancer [Internet]. Canadian Cancer Society. 2016. [Updated 2016; updated 2016 22 January]. Available from: <http://www.cancer.ca/en/cancer-information/cancer-type/cervical/cervical-cancer/?region=on>.
- Kerner J, Liu J, Wang K, et al. Canadian cancer screening disparities: a recent historical perspective. *Curr Oncol*. 2015;22(2):156-163.
- Canadian Task Force on Preventative Health Care. Recommendations on screening for cervical cancer. *Can Med Assoc J*. 2013;185(1):35-45.
- Malagon T, Brisson M, Drolet M, Boily MC, Laprise JF. Changing Inequalities in Cervical Cancer : Modeling the Impact of Vaccine Uptake, Vaccine Herd Effects, and Cervical Cancer Screening in the Post-Vaccination Era. *Cancer Epidemiol Biomarkers Prev*. 2015;24(January):276-286.
- Khadiilkar A, Chen Y. Rate of Cervical Cancer Screening Associated with Immigration Status and Number of Years Since Immigration in Ontario. *J Immigr Minor Heal*. 2013;15(2):244-248.
- Siegel R, Ma J, Zou Z, Jemal A. Cancer statistics. *CA Cancer J Clin*. 2014;64(1):9-29.
- World Health Organization. Health Topics: Refugees [Internet]. World Health Organization. 2016. [Updated 2016; cited 22 January 2016]. Available from: <http://www.who.int/topics/refugees/en/>.
- Salad J, Verdonk P, de Boer F, Abma TA. "A Somali girl is Muslim and does not have premarital sex. Is vaccination really necessary?" A qualitative study into the perceptions of Somali women in the Netherlands about the prevention of cervical cancer. *Int J Equity Health*. 2015;14(1):68.
- Redwood-Campbell L, Thind H, Howard M, Koteles J, Fowler N, Kaczorowski J. Understanding the health of refugee women in host countries: lessons from the Kosovar re-settlement in Canada. *Prehosp Disaster Med*. 2008;23(4):322-327.
- Lofters AK, Moineddin R, Hwang SW, Glazier RH. Predictors of low cervical cancer screening among immigrant women in Ontario, Canada. *BMC Womens Health*. 2011;11(1):1-11.
- Lofters AK, Hwang SW, Moineddin R, Glazier RH. Cervical cancer screening among urban immigrants by region of origin : A population-based cohort study. *Prev Med (Baltim)*. 2010;51(6):509-516.
- McDermott S, Desmeules M, Lewis R, et al. Cancer incidence among Canadian immigrants, 1980-1998: Results from a national cohort study. *J Immigr Minor Heal*. 2011;13(1):15-26.
- Drolet M, Boily MC, Greenaway C, et al. Sociodemographic inequalities in sexual activity and cervical cancer screening: Implications for the success of human papillomavirus vaccination. *Cancer Epidemiol Biomarkers Prev*. 2013;22(4):641-652.
- Wiedmeyer M, Lofters A, Rashid M. Cervical cancer screening among vulnerable women: Factors affecting guideline adherence at a community health centre in Toronto, Ont. *Can Fam Physician*. 2012;58(9):521-526.
- Haworth RJ, Margalit R, Ross C, Nepal T, Soliman AS. Knowledge, Attitudes, and Practices for Cervical Cancer Screening Among the Bhutanese Refugee Community in Omaha, Nebraska. *Natl Inst Heal*. 2014;39(5):872-878.

When Healthcare Systems Collide: An International Elective Student's Perspective

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What do you do when you're searching for the ideal restaurant? You might decide on a particular type of cuisine, look up the top-rated restaurants online, and ultimately choose a place with an excellent reputation that does not break the bank.

If you replace the patrons with patients, the restaurant with a hospital, and the menu with physicians, the food industry suddenly leaves us with a remarkably similar depiction of healthcare delivery in China.

As part of the Ottawa–Shanghai Joint School of Medicine, the world's first Chinese–Canadian joint medical school, I had the opportunity to observe the inner-workings of the Chinese healthcare system. As a Canadian medical student at the Renji Hospital, affiliated to Jiao Tong University, Shanghai, China, I was keen to observe the many healthcare differences between the two nations; differences such as medical education, physician compensation, and disease epidemiology caught my attention. However, I was most intrigued by the culture of healthcare delivery as a service, as opposed to a social right, as most Canadians are used to.

This contrast is most evident in the way that patients are able to select their physicians, as demonstrated by the food industry analogy. Patients first have the freedom to select the type of specialist that they would like to see. Since primary care physicians are rarely seen in China, referrals to specialists are often not required. For instance, if a patient's chief complaint was chest pain, they might choose to see a cardiologist, respirologist, gastroenterologist, rheumatologist, physiatrist, or any combination thereof, depending on the patient's personal beliefs as to the etiology of their chest pain. Next, the patient would select a hospital, often based upon reputation. Chinese hospitals are organized according to a 3-tier system, much like the Michelin 3-star ratings for restaurants, based on their ability to provide quality medical care, medical education, and research. For instance, a primary hospital is one that typically provides minimal healthcare and rehabilitation services, a secondary hospital is one that provides comprehensive health services and medical education with some research, while a tertiary hospital is one that provides specialist health services, superior education and high-quality research. Accordingly, many rural residents travel to large nearby cities, seeking care from university-affiliated tertiary hospitals. In this service-based healthcare model, patients are able to “shop

around” for the healthcare they desire.

Once the specialty and hospital are selected, patients have the additional option of selecting from further subdivided clinical tiers, a decision balanced by quality and affordability. During my rheumatology rotation, for example, I learned that patients have the option of seeing a rheumatologist from an “ordinary,” “special,” or “ultra-special” clinic; each tier referring to the skill, experience, and prestige of the physician. Upon arrival, patients register by taking a number from one of the three queues, thereby committing to payment of 60 Renminbi (RMB), equivalent to approximately \$5 CAD, 160 RMB (\$32 CAD), or 350 RMB (\$70 CAD) for a rheumatologist from an ordinary, special, or ultra-special clinic, respectively. Much like a prix fixe menu, China's service-based healthcare provides patients with a variety of pre-arranged options, from the choice of specialty, hospital, physician to its affordability.

I found that though the majority of patients found this freedom of choice empowering and to their benefit, China's culture of healthcare as a commodity translated into a very different patient–physician relationship as a result. For instance, one afternoon when I was shadowing a dermatologist well into seeing her 60th patient of the day, a frustrated patient cut in line to ask a quick question, which drove six others to clamor into the physician's small office, using their physical proximity as a marker for priority. As I sat there, surrounded by angry patients all demanding to be seen next, I wondered how healthcare could be so different between the two nations.

Upon my return to Canada, my initial reaction was to critique one nation's system as better than the other. To be fair, the goal of the longstanding debate of healthcare as a service versus a right has always been to reach a similar conclusion. However, upon further reflection, I realized that this was an overly simplistic view. While comparisons are frequently made between nations' healthcare quality, cost, and outcomes, it is impossible for healthcare systems to be transplanted from one nation to another. Just as it is impossible to fairly judge a person without careful consideration of their social context, it would be impossible to fairly judge a country's healthcare system without consideration of its political, social and economic currents. Healthcare systems are deliberately designed to serve the needs of the nations in which they exist. With this in mind, China's healthcare needs are vastly different

Keywords: Global Health; International Electives; Health Systems; Personalized Care; Efficiency

than those of Canada. The city of Shanghai alone is responsible for the care of over 35 million people, a population comparable to that of all of Canada. China's culture of healthcare as a service, though far from perfect, does bring with it a spirit of efficiency and the ability to serve enormous populations.

In truth, I think healthcare is neither a service nor a social right, but a blend of the two. While there is no denying that healthcare is a business with financial costs that will always need to be considered, it is important to remember that the healthcare industry is not like any other business and that patients are not like any other customers. While a superficial, one-size-fits-all approach may efficiently serve the nearly identical needs of a large group in other business models, such as the food industry, a therapeutic relationship must be developed between physicians and patients to accommodate the precise healthcare needs of each individual.

In conclusion, I believe each nation's healthcare system has its merits, with something to be learned from the other. In the ideal world, we would be able to combine the merits of both, attaining a system that integrates a most humane and personalized care approach for each individual, while upholding efficiency and capacity.

Chka!: A Portrait of Armenian Healthcare

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ABSTRACT

Armenia is an often overlooked country with a colourful history and an unusual healthcare system from the perspective of a Canadian medical student. This report gives a portrait of Armenian healthcare practices and some cultural context in which to understand these practices. The information was obtained on my month long elective in Yerevan, Armenia.

RÉSUMÉ

L'Arménie est parfois perçue comme un pays avec une histoire haute en couleur et avec un système de santé hors de l'ordinaire lorsqu'on adopte la perspective des étudiants en médecine au Canada. Ce compte rendu donne un aperçu du système de santé arménien en ce qui concerne ses différentes pratiques médicales et va aussi fournir un contexte culturel pour d'avantage approfondir la compréhension de leurs approches médicales. L'information est fondée et inspirée par mon stage d'observation clinique d'un mois au Yerevan en Arménie.

On the first day of my elective in Armenia's capital, Yerevan, I knock energetically on the door of the Department of Reanimation, otherwise known as the intensive care unit. A nurse opens the door and looks at me in confusion as I declare that I am a medical student from Canada who is here for an elective. Despite my thorough explanation, she continues to look perplexed and somewhat suspicious until she recognizes the name of my preceptor. I deduce that she speaks no English and feel vaguely alarmed as she leads me through the hospital. We arrive at a cramped staff room where seven doctors are clustered around a non-functional air conditioning unit. One doctor has lit up a cigarette and is calmly smoking by the window. All of them are now looking at me with as much confusion as the nurse. I have an uneasy feeling that their English is not much better than hers. "This is what I signed up for," I remind myself and, with an adventurous spirit, begin my elective.

The dominant languages in Armenia are Armenian and Russian, as Armenia was once a member of the Soviet Union. Russian machines and medications found throughout the hospital are reminders of a past era. The hospital itself is more than half a century old, with air conditioners that never seem to function well enough to cool a room. Patients in the intensive care unit sweat their way to recovery or demise in the 40 plus degree weather of the Yerevani summer.

Although Armenia is a lower-middle-income country and the basics of healthcare are in place, great care is taken to reduce waste. Equipment is rationed and scrubs, masks, and caps are reused routinely. Creative nurses save money by filling old Nutella jars with Vaseline that they then use for catheter and nasogastric tube insertion. Despite these measures, they frequently run out

of supplies. When this happens, a nurse will exclaim "Chka!" and I know that something is missing. "Chka" means "we don't have it" in Armenian. During a particularly unlucky central venous line procedure, we had chka for the right size sterile gloves, chka for alcohol, and chka for sterile dressings. I could see the doctor getting frustrated as he tried his best to complete the procedure.

Armenians have an unusual healthcare system, in which certain diagnoses require payment and others do not. Unfortunately, I have not figured out which diagnoses fall into which category. To make matters even stranger, patients are not allowed to refuse care. And doctors must, by law, perform every life-sustaining treatment, even in futile cases and cases of terminal illnesses. As a Canadian medical student, this was the largest source of shock to me. The ethics of needlessly intubating or performing cardiopulmonary resuscitation on a dying patient, regardless of their wishes, made me uneasy at times. One Armenian doctor admitted that they too are uncomfortable, and occasionally break the law to let patients die peacefully. Sadly, they have to falsify the record in the chart so as not to be legally liable. I struggled to understand how and why these patriarchal practices continue to flourish. By immersing myself into the Armenian culture, I caught a glimpse of an answer.

People I met proudly told me that the Armenian culture is an ancient one, over two millennia old. In this fact I feel lies the key to understanding the state of Armenian healthcare. The urgency to change and adapt that one might find in the Western world is replaced by a calm acceptance that things have worked thus far and will continue to do so. After all, Armenians have survived multiple disasters, most notably the 1915 genocide. They may talk vaguely about a healthcare system that is barely holding itself

Keywords: Armenia; Healthcare; International Elective

together, but I detected no impetus for change. I came to realize that change is a luxury for the wealthy. Armenians will protest for the basics of life such as food, transportation, and electricity—the hot topic while I was there—but healthcare falls lower on the list. In all my conversations with Armenian doctors, the subject of new equipment was never mentioned, nor were plans to revise protocols. It seemed to me that they had adapted to their conditions and changing things was more of an abstract concept than a possible reality. Even though nosocomial infections are rampant throughout the hospital, according to the Head of the Reanimation Department, the best she could do to affect change was to chastise the doctors and nurses for not routinely washing their hands. This approach was largely ineffective, I noticed; the doctors reverted to their previous routine almost immediately. I must introduce a caveat: I only saw a snapshot of Armenian life. I suspect Armenian healthcare must evolve but perhaps it was too slow for me to detect in one month.

In this description, I have tried to create an impression for the reader of what it is like to be a doctor in Armenia in a different environment and with different equipment and attitudes. I do not mean to imply that the Armenian healthcare system is broken or inferior. In some strange way, it is impressive in its minimalist efficiency and is making me think critically about what is absolutely necessary for quality healthcare and what is fancy and expensive gadgetry. The idea that newer is always better dominates Western healthcare. Ironically, our system, like the Armenians', is on a thin financial edge and is being pruned yearly. Instead of cutting salaries and healthcare personnel, we could take a cue from some Armenian practices and become frugal in other ways.

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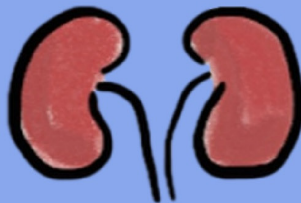
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