

## Fever in our First Nations

In a *CMAJ* practice article, Bagnall and colleagues describe acute rheumatic fever in a member of Canada's immigrant population.<sup>1</sup> The same article correctly identifies Canada's First Nations as a population at risk for this disease. Social determinants of health are contributory: poverty, inadequate housing and systemic neglect. The Sioux Lookout Acute Rheumatic Working Group recently identified eight cases of acute rheumatic fever in First Nations youth, including two young children for whom the disease was fatal.

We are at a crossroads in how we perceive and respond to the inequities present for First Nations communities in Canada. Deaths from acute rheumatic fever are preventable. Inadequate housing and overcrowding play a direct role in the incidence of acute rheumatic fever, a disease unheard of in the rest of Canada.

The social and health care needs of First Nations are apparent to the Truth and Reconciliation Commission of Canada,<sup>2</sup> the United Nations,<sup>3</sup> the Auditor General<sup>4</sup> and the Senate.<sup>5</sup> We suggest it is also of keen interest to Canadian physicians and their patients, who may be experiencing vast health and social inequities first hand.

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## Making needles less prickly

We read with great interest the article by Curtis and colleagues, in which the authors conclude that current evidence does not support investing in ultrasound or near-infrared imaging for routine intravenous (IV) catheterization in children.<sup>1</sup> We contend that such a broad conclusion is not warranted based on the design of the study.

Ultrasound has a role in placing the difficult IV. A recent meta-analysis<sup>2</sup> concluded that in patients with difficult peripheral venous access, using a direct, real-time, ultrasound-guided

approach increased success rates of peripheral IV insertion when compared with the standard approach, but had no effect on the time or number of punctures to successful cannulation. In their discussion, Curtis and colleagues<sup>1</sup> touch on whether the nurses were trained well enough, but then describe the training as “comprehensive.”

For ultrasound-guided IV insertion, appropriate choice of vein for the technique being used, probe manipulation, and target site and needle visualization are all important skills. For freehand use of ultrasound-guided IV placement in adults, 17 (interquartile range 15–27.5) attempts are required to develop a satisfactory rate of placement when using adult phantom models.<sup>3</sup>

Based on the data presented, we cannot conclude that the nurses were trained to a satisfactory standard as there was no assessment of success rates achieved on phantoms. An alternative approach is practice of a technique on patients that is supervised by recognized experts. This did not occur either.

No description of maintenance of skill using the technologies over the time of the study was described. It is concerning that only 17 nurses performed cannulation seven or more times for the study. In effect, over the 25-month period of the study, they may only have used the ancillary devices at most on two or three occasions. The majority of the 83 nurses used the technology less frequently than that. We doubt that this rate is sufficient to maintain a satisfactory skill level.

Based on their study design, we believe a more correct conclusion would have been: for routine IV placement in a setting where nurses perform IV cannulation infrequently, the addition of near-infrared and ultrasound technologies, when implemented without confirmation of skill acquisition and no facility for maintenance of skill, does not result in higher success rates of IV placement. We believe if investment in such technology is to be clinically successful, it must be accompanied by investment in training so that staff are



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able to use the technique with sufficient frequency to maintain their skills.

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## The authors respond

We thank Lardner and Spencer for their response to our article.

Our conclusion regarding investment in ultrasound and near-infrared imaging for routine IV placement was in reference to our setting and other similar settings, specifically. In our setting, IV placement is a core nursing skill. Nurses in our emergency department place the IVs. As such, they are viewed as experts in starting pediatric IVs. Extrapolating from our enrolment data, we estimate that 70 IVs are started by nurses each week in the pediatric section of our department. Thus, our nurses are experienced at IV placement. Our data support this; across all arms (which showed no difference in first-attempt success rate), the range was 65.9%–74.7% success on first attempt.<sup>1</sup>

Our emergency department (adult and pediatric) has a pool of roughly 200 nurses who work regularly. Out of this pool, 83 nurses were keen to participate and underwent training. We estimated that only those nurses who felt that the research was important and the technologies might offer benefit, and who were comfortable with the technological procedures would consent to participate. We were satisfied with this approach and assessed that our training package was sensible and similar to other studies.<sup>2</sup> Because we agree that training and skill maintenance with ultrasound is complex, we

discussed this quandary in the paper in some detail.

Our trial was pragmatic in the sense coined by Schwartz and Lellouch.<sup>3</sup> The study design was sound. It was a well-designed randomized controlled trial, adherent to the CONSORT standards of reporting.<sup>4</sup>

We stand by the results of our study. We are not saying that ultrasound is of no value when performed by experienced clinicians. However, the question does remain: How do we provide the best first-time success to all children who require the placement of an IV line in an emergency setting? Given the training we provided, the results were no better than the usual method.

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## Many hands lighten the obesity load

Fletcher and Patrick<sup>1</sup> make an excellent case for population-level measures to curb obesity rates, but fail to highlight opportunities for improvement in primary care and medical education.<sup>2,3</sup>

In the average family practice, about 4.4 hours per day would be required to provide only A-level preventive screening to adults over 25 years of age.<sup>4</sup> It is not surprising then that only 23% of obese individuals have a documented care plan.<sup>5</sup>

Innovative tools exist to make obesity prevention quicker, easier and more effective. Simply adding a signed prescription with clear instructions can

increase patient adherence to exercise and diet advice.<sup>6</sup>

Modifications to physician education are also required. Most medical curricula in Canada do not offer formal education in obesity prevention.<sup>1</sup> Canadian medical graduates report dissatisfaction with current nutrition education and their ability to provide nutrition counselling to patients.<sup>7</sup> To that end, an enhanced medical education curriculum is being developed and piloted in Canada.<sup>2</sup>

The past 50 years of battling Big Tobacco has shown that physicians can offer leadership in both clinical innovation and healthy public policy.<sup>8,9</sup>

We are proposing a multilevel approach to obesity prevention, integrating physicians with allied health, public health and community incentives. This is the foundation of our multiclinic pilot study, Prevention Rx, which is currently under evaluation.

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## Letters to the editor

Letters have been abbreviated for print. See [www.cmaj.ca](http://www.cmaj.ca) for full versions and competing interests.