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Current state of POCUS usage in Canadian emergency departments
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Introduction: Point of care ultrasound (POCUS) has many applications in Emergency Medicine which are proven to improve patient outcomes. Training programs and guidelines for its use are available but its utilization metrics across Canadian Emergency Departments are unknown. This study aims to provide a comprehensive national assessment of POCUS usage, with a key component comparing training with patterns of use.

Methods: A survey was distributed via email to all staff adult emergency physician members of the Canadian Association of Emergency Physicians (CAEP). The survey included questions related to training, attitudes towards POCUS, POCUS utilization, and barriers to POCUS use. Standard descriptive statistics were calculated, and differences in mean POCUS usage between groups were measured using a one-way analysis of variance (ANOVA).

Results: The survey received 189 responses from emergency physicians from across Canada, 81% of which viewed POCUS as “useful and essential”. Respondents indicated that on average, POCUS was used during 71% (SD 29%) of shifts and on 23% (SD 17%) of patients. POCUS was most commonly used for basic applications, including thoracoabdominal trauma (FAST), cardiac assessment in arrest (trans-abdominal), and assessing for pericardial effusion. The most commonly cited barrier to wider POCUS adoption was a lack of training, with 41% of respondents identifying this as an issue. Correspondingly, formal POCUS training and certification were associated with significantly higher POCUS usage: usage rates ranged from 11.5% (SD 10.5%) of patients for those with formal training but no certification to 39.5% (SD 16.4%) of patients for those with a POCUS fellowship (p <0.001).

Conclusion: The presented results from this survey provide an initial overview of the current state of POCUS usage in Canadian Emergency Departments. In summary, a higher level of training was associated with higher POCUS usage: usage rates ranged from 11.5% (SD 10.5%) of patients with formal training but no certification to 39.5% (SD 16.4%) of patients for those with a POCUS fellowship (p <0.001).

Keywords: point of care ultrasound, ultrasound, point of care

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“iPads on!”-Does the provision of iPad devices within an emergency department improve the frequency of access to departmental web KT resources?
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Introduction: Barriers to implementing effective Knowledge Translation (KT) in Emergency Departments include lack of awareness, lack of time and limited access to resources. In our teaching hospital emergency department (ED), we implemented a new department website (www.sjhem.ca) to provide improved access to our KT resources. Having published the website, we wanted to know if the addition of conveniently situated pre-configured iPads would increase access to the website from within the department.

Methods: The website was developed and first published in April 2014. Two iPads (Apple Inc.) were preconfigured with icons linking directly to targeted pages on our website, including the physician schedule, academic calendar. The iPads were securely located at physician charting desks in October 2014. We used Google analytics to record of webpage visits for 25 weeks before and after the installation of the iPads. Comparisons of mean weekly visits were made using the Student t test (GraphPad Prism).

Results: The mean weekly page views for the website increased after the installation of the iPads from a baseline of 103 (95%CI 83.9-121) to 198 (181-215); an increase of 95% (71-120; p <0.001). Limiting analysis to devices utilising our hospital IP address we saw a 403% increase in mean weekly page views from 6.4 (4.35-8.45) to 32.2 (26.7-37.8; p<0.0001). There was a clear step increase in website access from the date of iPad installation. Comparing the increases in average weekly visits for those pages with direct link iPad icons (Clinical 11.4 before, 16.6 after, 46%, Schedule 30, 39, 30%, Calendar 10.7, 46.3, 330%, Home 84.1, 115.4, 37%) to the top accessed pages without iPad icons (<1.00 to 2.00) for expired patients. Of septic shock and expired patients, IV fluid administration was 1.50L [1.0 to 2.00] for expired patients. Median volume of fluid administration was 1.50L [1.0 to 2.00] for septic shock and 1.00L [1.00 to 2.00] for expired patients. Of septic shock and expired patients, IV fluid administration and body weight data was available for 148 encounters (15.6%). Within this group, 19 (12.8%) received no IV fluid, 90 (60.8%) received 0.1-75% of their recommended IV fluid volume, 25 (16.9%) received 75.1-125%, and 14 (9.4%) received >125% of their recommended fluid volume.

Conclusion: In this study, severe forms of sepsis were often treated with <30 mL/kg crystalloid fluid. Fluids were administered outside of the recommended 30 min, but within the 3 h, time windows. In-hospital mortality was consistent with published data. Future research will examine a broader data set for IV fluid resuscitation in sepsis, and will measure the impact of a fluid resuscitation in sepsis medical directive.

Keywords: sepsis, resuscitation, crystalloid