Methods: This was a descriptive, cross-sectional electronic survey that was disseminated to all current Canadian EM residents from both Royal College (RC) and Family Medicine - EM training streams. Residents were recruited either directly or through their program's administrative assistant. The survey consisted of multiple-choice, Likert and free-text entry questions. Themes included a) familiarity with QIPS; b) local opportunities for QIPS projects and mentorship; and c) desire for further QIPS education and involvement. The survey was open for a five-week period, with formal reminders after the first and third weeks. Descriptive statistics are reported. **Results**: 189 (35%) of 535 current EM residents completed the survey, representing all 17 medical schools. 77% of respondents were from the RC stream. 54.7% of respondents reported being "somewhat" or "very" familiar with QIPS. 47.2% of respondents reported "not knowing" or "not having readily available" QIPS projects to participate in their local environment, and 51.5% had equivalent responses with respect to QIPS mentorship opportunities. Only 17.5% of respondents reported that QIPS methodologies were already formally taught in their residency program, and 66.9% indicated a desire for increased QIPS teaching. The majority of respondents were "slightly" (35.9%), "moderately" (23.2%) or "very" (11.3%) interested in becoming involved with QIPS training and initiatives. **Conclusion**: Responding Canadian EM residents are interested in obtaining greater QIPS education as well as project and mentorship opportunities, but many perceive that they do not have adequate access to these at the current time. As the importance of QIPS increases in the EM community, supporting residents with more robust educational infrastructures may be necessary. Future efforts may include the standardizing of QIPS postgraduate curricula and improving access to QIPS opportunities across the country.

Keywords: medical education, patient safety, quality improvement

LO62

Intranasal dexmedetomidine for procedural distress in children: a systematic review and meta-analysis

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Introduction: Intranasal dexmedetomidine (IND) is an emerging agent for procedural distress in children. However, studies to date have been limited by small samples and imprecise estimates of effect size. We sought to summarize the evidence on the effectiveness of IND for procedures associated with distress in children. **Methods**: We performed electronic searches of MEDLINE (1946-2018), EMBASE (1980-2018), Google Scholar (2018), CINAHL (1981-2018), Cochrane Central Register of Controlled Trials (2018), 6 clinical trials registries and conference proceedings (2010-2018). Title searches, data abstraction, and risk of bias assessments were performed in duplicate. We included all published and unpublished, randomized and quasi-randomized trials of IND for procedures in children younger than 19 years of age without language restriction. The methodological quality of studies was evaluated using the Cochrane Collaboration's Risk of Bias tool. The primary outcome was the proportion of participants that were deemed to be adequately sedated for the procedure. **Results**: Of 661 studies, 18 met inclusion criteria. Trials involved 2128 participants, age 1 month - 14 years (836, 39.3% females), who received IND 1 - 4 mcg/kg either by drops (n = 12), atomizer (n = 4), or both (n = 2). 12 trials were eligible for meta-analysis. 13 trials used validated instruments to assess sedation. All studies except one were associated with low or moderate risk of bias. For painful procedures (IV insertion; laceration repair; dental extraction), the pooled OR (95% CI) for adequate sedation and need for additional analgesia was non-significant [1.19 (0.53, 2.65)] and [2.16 (0.62, 7.49)], respectively (n = 5). For non-painful procedures (diagnostic imaging), the corresponding pooled OR (95% CI) favored IND [3.04 (1.58, 5.82)] and [4.44 (2.11, 9.35)], respectively (n = 7). Time to onset and duration of sedation ranged from 13-31 minutes and 41-91.5 minutes, respectively. For adverse effects, the pooled OR (95% CI) was not significantly different between IND and comparators [0.58 (0.22, 1.55] and there were no serious adverse events. **Conclusion**: IND at doses 1 to 4 mcg/kg are safe and adequately sedate children undergoing non-painful procedures, although the ease of administration must be weighed against the risk of prolonged sedation. Additional trials with larger sample sizes and greater methodologic rigor are needed for painful emergency department procedures such as laceration repair and IV insertion.

Keywords: dexmedetomidine, intranasal, sedation

LO63

Humanoid robot-based distraction to reduce pain and distress during venipuncture in the pediatric emergency department: A randomized controlled trial

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Introduction: Intravenous insertion (IVI) is identified by children as extremely painful and the resultant distress can have lasting negative consequences. There is an urgent need to effectively manage such procedures. Our primary objective was to compare the pain and distress of IVI with the addition of humanoid robot-based distraction to standard care, versus standard care alone. **Methods**: This two-armed randomized controlled trial (RCT) was conducted from April 2017 to May 2018 at the Stollery Children's Hospital emergency department (ED). Children aged 6 to 11 years who required IVI were included. Exclusion criteria included hearing or visual impairments, neurocognitive delays, sensory impairment to pain, previous enrolment, and discretion of the ED clinical staff. Primary outcomes were measured using the Observational Scale of Behavioural Distress-Revised (OSBD-R) (distress) and the Faces Pain Scale-Revised (FPS-R) (pain). A total of 426 pediatric patients were screened and 340 were excluded. **Results**: We recruited 86 children, of which 55% (47/86) were male; 9% (7/82) were premature at birth; 82% (67/82) had a previous ED visit; 30% (25/82) required previous hospitalization; 78% (64/82) had previous IV placement and 96% (78/81) received topical anesthesia. The mean total OSBD-R score was 1.49 ± 2.36 (standard care) compared to 0.78 ± 1.32 (robot group) ($p = 0.047$). The median FPS-R during the IV procedure was 4 (IQR 2,6) in the standard care group alone, compared to 2 (IQR 0,4) with the addition of humanoid robot-based distraction ($p = 0.10$). Change in parental state anxiety pre-procedure versus post-procedure was not significantly different between groups ($p = 0.49$). Parental satisfaction with the IV start was 93% (39/42) in the robot arm compared to 74% (29/39) in the standard care arm ($p = 0.03$). Parents were also more satisfied with management of their child's pain in the robot group (95% very satisfied) compared with standard care (72% very satisfied) ($p = 0.002$). **Conclusion**: A statistically significant reduction in distress was observed with the

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