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Relevance of opioid guidelines in the emergency room (ROGER)★

The increased use of opioid pain medications in North America in the last 2 decades has given rise an epidemic of addictions, overdoses and deaths, to which both the US and Canadian governments have enacted strategies to help combat these crises [1-3]. While these strategies develop multiple interventions to curb opioid use, a common target is to reduce physician opioid prescribing. Many patients may receive their first dose of opioid in the Emergency Department (ED), and recent studies show that there has been a steady increase in opioid prescribing in US EDs to adults (relative increase of 49% from 2001 to 2010) [4, 5]. Evolving evidence suggests that ED opioid prescribing can lead to long term opioid use/dependency, although preliminary results are conflicting [6-10]. A recent review examining ED opioid prescribing outcomes indicates that approximately 10% are associated with indicators of inappropriate prescribing, 10% may be diverted, 42% misused, and 1.8% may cause death [11].

International clinical practice guidelines (CPGs) regarding opioid prescribing have been previously shown to be generally congruent regarding patient assessment, risk stratification, urine drug screening and opioid prescribing protocols [12, 13]. A key limitation of these international CPGs remains the relative paucity of evidence-based recommendations to guide ED prescribing practices. The goal of this study was to review these international CPGs for emergency medicine (EM)-relevant recommendations, involvement in EM authors, and/or vetting by EM practice organizations (physicians, nursing, pre-hospital care).

Prior search strategies for relevant guidelines were reproduced and updated to include the most recent guideline iteration [12, 13]. Manual searches of international pain society websites and guideline repositories (e.g. Guideline International Network, National Guideline Clearinghouse, etc.) were also completed. Guidelines were excluded if they addressed opioid prescribing at sub-national levels (e.g. state/province, region, city, etc.), as it was felt that these were more locally focused, and would not offer generalizable guidance for EM practice. Included guidelines were evaluated for analytical methods used to evaluate supporting evidence and framing CPG recommendations, inclusion of EM authors (with reporting of conflict of interest), and involvement of EM stakeholders in final draft evaluations (physicians, nurses, prehospital care).

A total of 16 guidelines were included for analysis. The guidelines included in this review, and corresponding evidence evaluation/recommendation frameworks are listed in Table 1. A variety of different evidence evaluation systems and recommendation formulation frameworks were used by author groups. Four of 16 included CPGs did not report methods used, which raises questions about the validity of evidence analysis and recommendations suggested. The results of the CPG analyses are summarized in Table 2. Two CPGs made recommendations relevant to EM opioid prescribing, albeit with weak supporting evidence (based on rating frameworks used). Three CPGs included EM physician authors, including one with a potential conflict of interest. Finally, there is no reported involvement with any EM stakeholders (physicians, nurses, prehospital) in reviewing draft versions prior to final publication.

Not all "guidelines" conformed to uniform construction and reporting standards, so they were not amenable to quality assessment using current rating tools (e.g. Institute of Medicine, AGREE-II instrument) [14].

Guidelines can best inform clinical practice when the recommendations and clinical settings are specified [14]. To that end, it is important to have appropriate inclusion & exclusion criteria that define the proper application of guideline recommendations within the proper scope of

Table 1
International Opioid CPGs included in study.

CPG (author group, publication year)	Frameworks for reviewing evidence and formulating recommendations[a]	
	Evidence review	Recommendations
Latin America (2017)	N/R	N/R
US Centre for Disease Control (2016)	GRADE	GRADE
Australian & New Zealand College of Anaesthetists (ANZCA 2015)	N/R	N/R
Scottish Intercollegiate Guideline Network (SIGN)	SIGN 50	SIGN 50
Institute for Clinical Scientific Improvement (ICSI 2016)	ICSI evidence grading system	ICSI evidence grading system
ICSI 2013	ICSI evidence grading system	ICSI evidence grading system
Pain Association of Singapore Task Force (2013)	N/R	N/R
American Society of Interventional Pain Physicians (ASIPP 2017)	Level I–IV (defined within CPG)	Strong/mod/weak
ASIPP (2013)	IOM, USPTF criteria	N/R
British Pain Society (2010)	N/R	N/R
Canadian Opioid Update (2017)	GRADE	GRADE
Canadian National Opioid Users Group Guideline (NOUGG 2010)	CTFPHC	CTFPHC
US Veterans Administration/Dept of Defence (US VA/DoD 2017)	GRADE	GRADE
US VA/DoD (2010)	USPSTF	USPSTF
American Society of Anaesthesiologists Task Force/American Society of Regional Anaesthesia & Pain Medicine (AAS ASRA 2010)	Expert consensus	Expert consensus
American Pain Society/American Academy of Pain Management (APS AAPM 2009)	GRADE	GRADE

[a] N/R = not reported, GRADE = grading of recommendations, assessment, development and evaluation, USPSTF = US preventive services task force, IOM = institute of medicine, CTFPHC = Canadian task force on preventive health care.

☆ Presented at the Canadian Association of Emergency Physicians Annual Conference (May 2018).

Table 2
EM relevance of Included Guidelines (n = 16).

Relevance domain	Guideline specifics
Practice recommendations (level of supporting evidence)	ICSI 2016 (Rec 13.8) – Use of drug monitoring programs prior to EM opioid prescribing (weak) Canadian NOUGG 2010 (Rec 24) – Limited prescribing of opioids in EM, consulting pharmacy/primary care resources, creating EM-specific policies (weak)
Author involvement (conflict of interest)	ICSI 2016–1 EM physician (no conflicts) Canadian NOUGG 2010 – 1 EM physician (significant conflict) APS AAPM 2009 – 1 EM physician (unclear conflict)
EM external review (physicians, nurses, prehospital)	None

practice. Furthermore, such recommendations are inherently most valid and reliable when they have been constructed with appropriate stakeholder involvement as the assumption would be that they would have specific knowledge of the clinical setting and the nuances surrounding the practice [14]. In this review, the near absence of EM-relevant recommendations reflects the lack of meaningful input from EM stakeholders (physicians, nurses, prehospital personnel). In the absence of contributions from EM stakeholders during guideline construction, it is desirable to have the draft guidelines reviewed by EM expert organizations prior to final publication to ensure meaningful feedback. Such external review was not found during any phase of development in the guidelines included in this review.

In the absence of useful EM-relevant recommendations from international opioid prescribing guidelines, some specialty-specific organizations have tried to fill the void. The American College of Emergency Physicians (ACEP) published a specific clinical policy for prescribing short-acting opioids in limited acute and chronic pain conditions for adults in the EM [15]. Various regional jurisdictions and cities have tried to enact local ED opioid prescribing guidelines with variable supporting evidence and success [16-20]. These reports were not included in this review, as they did not meet inclusion criteria.

In conclusion, international and pain specialty organization opioid prescribing guidelines have few relevant recommendations for EM practice, and any supporting evidence is weak. Emergency practitioners rarely participate in authorship groups, nor in external review of draft documents prior to final publication. This study reinforces the need for EM organizations to create guidance documents around opioid prescribing for EM practitioners, and involving appropriate EM authors and stakeholders.

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Effect of lumbar elevation on dilatation of the central veins in normal subjects

The subclavian vein (SCV) and internal jugular vein (IJV) are commonly used to obtain central venous access [1]. In general, a small IJV (area ≤ 0.4 cm^2) was reported in 5–14.6% of healthy subjects [2, 3] and 23% of patients [2]. Moreover, the maximum IJV area was 0.2 cm^2 in dehydrated subjects [4]. A small IJV diameter measuring ≤7 mm was shown to lead to catheterization failure (14.9%) and complications (8.5%) [5].

On this account, techniques that facilitate successful central line placement, such as the Trendelenburg position (TP) and Valsalva maneuver, may be required [6]. Both techniques may improve the chance of successful cannulation.

However, the issues reported were that a cheap or non-functioning bed could not change the patients' position to the TP and that patients find it difficult to hold their breath for the Valsalva maneuver (disobedient or uncooperative patients especially) throughout central line placement.

This study aimed to determine the body position that can result in the largest diameter of the central veins on an ordinary bed for cannulation.