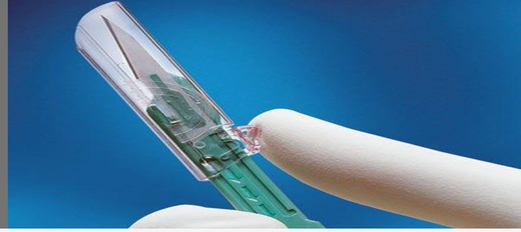
# Management of Subcutaneous Abscesses in the Emergency Department: Practice Patterns and Deviation from Best Practices

**Steven M Friedman**[1,2] **Ahmed Al-Den**[3] **Danielle Porplycia**[2]

1 Department of Family and Community Medicine, Faculty of Medicine, University of Toronto; 2 Emergency Medicine, University Health Network; 3 Division of Emergency Medicine, Department of Medicine, Faculty of Medicine, University of Toronto



## Introduction

Management of subcutaneous abscesses is common on a daily basis in both adult and pediatric emergency departments.

The classic approach for treating these abscesses by incision and drainage is broadly accepted. However, there remains controversy and misconception regarding other aspects of management, including type of anesthesia, type of incision, need for irrigation, need for and type of packing, primary vs. secondary closure, indications for cultures, and the role of antibiotics. Many of these strategies lack higher levels of evidence. We perceive considerable variation in patterns of practice across ED settings.

## Objectives

Through this cross sectional survey, we seek to characterize the management of uncomplicated subcutaneous abscesses (SA) by Canadian emergency physicians (EPs).

Survey results will be analyzed for practice variation. Results will be reported to respondents, along with a synthesis of existing evidence-based best practice recommendations.

## Methods

Cross-sectional study of CAEP membership in 2017. Subjects were emailed an invitation to an online survey, and two biweekly reminders. Wilcoxon rank sum test was used for association with age, and Chi Square and Fischer's exact test for binary variables.

A scoping review was conducted, searching PubMed for English language publications from 1998-2018, employing search terms including 'skin abscess, subcutaneous abscess and soft tissue abscess' as well as current consensus guidelines and relevant textbooks.

## Results

Response rate was 21.2 % (392 Reponses/1850 surveyed). Duration of practice ranged 30.2 % practising <= 5 years, to 25.7% practising >= 20 years. Teaching setting was described in 89.1% of responses. Respondents were primarily attending physicians (84.0%), postgraduate trainees (14.7%) and medical students (0.80%).

When the diagnosis was in doubt, physicians would use point of care ultrasound (86.6%), formal U/S (41.3%), needle aspiration (49.3%), and incision with scalpel (22.8%).

Irrigation with saline is performed by 57.1 % of EPs, using tap water by 2.1 %, or disinfectant 2.1%, with 39.1% not performing any irrigation.

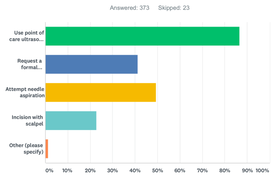
Incisions generally made are linear (77.3%), elliptical (9.09%), and cruciate (25.7), and by needle aspiration (12.8%). No physician (0.0%) reported not incising abscesses.

Approximately half (49.2%) typically do not pack or close wounds, while 40.6 % employ ribbon or gauze packing, and 1.6 % primary closure.

## Select survey results and representative best evidence

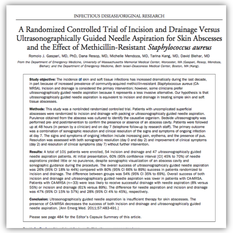
### Diagnosis: Point of care ultrasound has high sensitivity; Needle aspiration is a poor approach for diagnosis or treatment.

If the diagnosis is in doubt do you do any of the following?



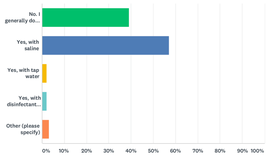


BMJ Open In patients presenting to the emergency department with skin and soft tissue infections what is the diagnostic accuracy of point-of-care ultrasonography for the diagnosis of abscess compared to the current standard of care? A systematic review and meta-analysis


A Randomized Controlled Trial of Incision and Drainage Versus Ultrasonographically Guided Needle Aspiration for Skin Abscesses and the Effect of Methicillin-Resistant *Staphylococcus aureus*

### Wound Irrigation: Irrigation does not appear to improve outcome after incision and drainage.

Q5 Do you irrigate the wound after incision? If so, how?

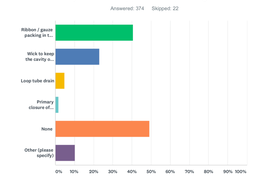




Irrigation of Cutaneous Abscesses Does Not Improve Treatment Success

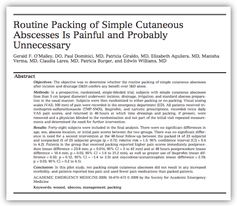
### Packing: Packing is associated with higher pain scores, but no difference in rates of treatment failure or recurrence.

Please describe your usual approach to packing or closure of wound:



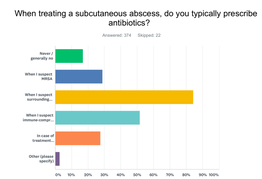


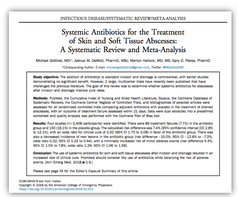
Randomized Trial Comparing Wound Packing to No Wound Packing Following Incision and Drainage of Superficial Skin Abscesses in the Pediatric Emergency Department

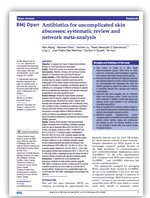

Routine Packing of Simple Cutaneous Abscesses Is Painful and Probably Unnecessary

### Antibiotics: A reduced rate of treatment failures (NNT ~ 14) must be weighed against a high clinical cure rate (~84 %) from I & D alone and the implications of expanded antibiotic use, including adverse drug reactions and changing resistance patterns to staph aureus.

When treating a subcutaneous abscess, do you typically prescribe antibiotics?

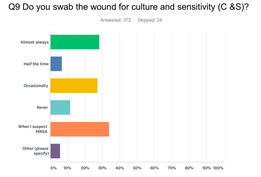




Systemic Antibiotics for the Treatment of Skin and Soft Tissue Abscesses: A Systematic Review and Meta-Analysis


BMJ Open Antibiotics for uncomplicated skin abscesses: systematic review and network meta-analysis

### Cultures: Not routinely recommended in first occurrence; consider in treatment failure, spontaneous recurrence, or multiple sensitivities.

Q9 Do you swab the wound for culture and sensitivity (C &S)?





## Results (cont.)

Antibiotics are generally not prescribed by 16.8%. EPs prescribe antibiotics if suspecting surrounding cellulitis (84.2%), immunocompromised host (51.6%), MRSA (28.9%), or recurrence within 30 days (27.5 %).

Cultures are taken almost always by 28.2%, half the time or less by 33.9%, never by 11.6%, and if MRSA is suspected by 33.9%.

Follow-up instructions are with FP (56.7%), ED at 24 hours (5.91 %) or 48 hours (17.74 %), or regarded as not required (24.7%).

Most EPs (90.9%) report having no standardized protocol for abscess management in their ED.

EPs with fewer years in practice are more likely to make cruciate incisions (p=0.009), to generally not irrigate incisions (p=0.02), to culture if MRSA is suspected (p=0.02), and to prescribe antibiotics when suspecting MRSA (p=0.02), immune-compromised host (p=0.03), and in case of spontaneous treatment failure or recurrence (p=0.0004).

EPs with more years in practice are more likely to pack with ribbon gauze (p=0.06), and to almost always swab for culture and sensitivity (p=0.04)

## Limitations

Study limitations include low response rate and potential selection bias.

## Conclusions

Practice variability and deviations from published evidence and practice guidelines (i.e. IDSA, Choosing Wisely Canada) are noted. A knowledge translation exercise for Canadian EPs would be useful.

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UHN Toronto General Toronto Western Princess Margaret Toronto Rehab

Family & Community Medicine UNIVERSITY OF TORONTO

Medicine UNIVERSITY OF TORONTO

DIVISION OF EMERGENCY MEDICINE DEPARTMENT OF MEDICINE

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**Contact**: steven.friedman@utoronto.ca