

# Adapting the Critical Care Pain Observation Tool for Family Caregiver Use (CPOT-Fam)



## INTRODUCTION

- Pain is very common in intensive care unit (ICU) patients
- Families could use their intimate knowledge to assist in clinical pain assessment of non-communicative patients
- Family involvement in pain assessment could:
  - facilitate earlier pain recognition
  - reduce anxiety for families
  - improve patient and family satisfaction with care

## OBJECTIVES

We conducted a multi-phase study to:

ADAPT the Critical Care Pain Observation Tool (CPOT) for family use (creating the CPOT-Fam)

Pre-clinically TEST the CPOT-Fam

REVISE the CPOT-Fam in preparation for clinical pilot testing

## METHOD

**ADAPT** • Formed working group of stakeholders

- Working group discussed CPOT-Fam content, format, language, and graphics

• Group developed and revised templates of CPOT-Fam, accompanying educational module, and sample cases

**TEST** • CPOT-Fam tested with public participants

- Participants viewed educational materials and scored sample cases using CPOT-Fam

• Determined agreement between CPOT-Fam scores for sample cases (participant vs. reference scores)

• Collected open-ended feedback on CPOT-Fam and pain assessment in ICU

**REVISE** • Revised CPOT-Fam using participant and working group feedback

## RESULTS

### AUTHORS

A.SHAHID<sup>1</sup>, B.SEPT<sup>1</sup>, S.LONGMORE<sup>1</sup>, V. OWEN<sup>1</sup>, S. MOSS<sup>1</sup>, C. GÉLINAS<sup>2</sup>, A.SOO<sup>1</sup>, K.FIEST<sup>1</sup>, H. STELFOX<sup>1</sup>  
<sup>1</sup>University of Calgary & Alberta Health Services, Calgary, Canada  
<sup>2</sup>McGill University & Jewish General Hospital – CIUSSS West-Central Montreal, Montreal, Canada

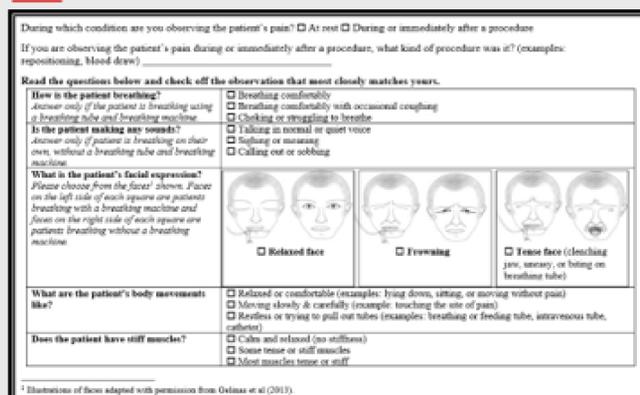


Figure 1 A first iteration of the CPOT-Fam created with the working group, prepared for pre-clinical testing.



pre-clinical testing

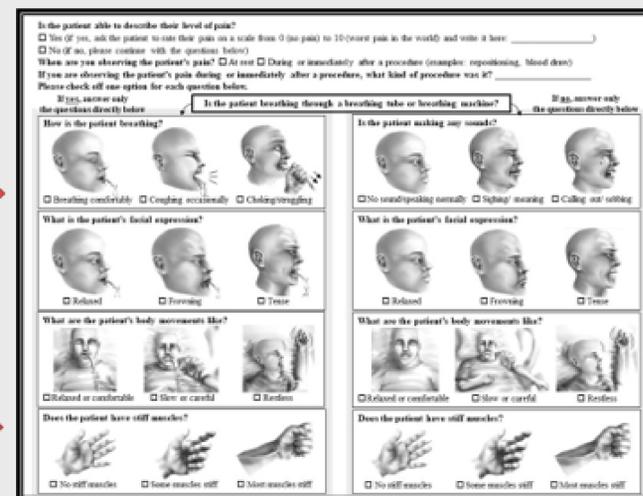
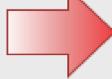


Figure 2 CPOT-Fam revised in light of pre-clinical feedback from participants and working group, prepared for clinical pilot testing.

## CONCLUSION

- Families feel comfortable assessing pain in their loved ones and feel empowered to act on their pain assessments
- Family engagement in pain assessment could improve patient care in ICUs
- Families consider the CPOT-Fam valuable in pain assessment
- Clinical evaluation is needed to determine CPOT-Fam feasibility, acceptability, performance in ICU settings

### CONTACT INFORMATION

Dr. Anmol Shahid (Postdoctoral Associate)  
[Anmol.shahid1@ucalgary.ca](mailto:Anmol.shahid1@ucalgary.ca)

Dr. Henry Thomas Stelfox (Principal Investigator)  
[tstelfox@ucalgary.ca](mailto:tstelfox@ucalgary.ca)

- High agreement in CPOT-Fam scores on sample cases (participant vs. reference scores)
  - Total score intraclass correlation coefficient (ICC=0.92)
  - Highest agreement (vocalization dimension (ICC=1.00)); lowest agreement (body movements dimension (ICC=0.85))

• CPOT-Fam well-received by participants with some suggestions for improvement:

**“I thought this provided me with a good checklist to run through to detect pain.”**  
**“Not graphic enough - words are not specific enough open to interpretation.”**

- Most participants (71.4%) felt very comfortable in assessing pain in their loved ones and all participants (100%) felt empowered to act if they identified pain in their loved one

### ACKNOWLEDGEMENTS

Thank you working group members for helping create and refine the CPOT-Fam:

- Corson Johnstone
- Kara Plotnikoff
- Dr. Karla Krewulak
- Rameiya Paramalingam
- Rebecca Brundin-Mather

Thank you to Stephanie Sakkab for creating the illustrations for the revised CPOT-Fam (Figure 2).

### REFERENCES

1. Gupta M, Sahi MS, Bhargava AK, Talwar V. The Prevalence and Characteristics of Pain in Critically Ill Cancer Patients: A Prospective Nonrandomized Observational Study. *Indian J Palliat Care* 2015;21:282-7.
2. Puntillo KA, Neuhaus J, Arai S, et al. Challenge of assessing symptoms in seriously ill intensive care unit patients: can proxy reporters help? *Crit Care Med* 2012;40:2760-7.
3. Gelinac C. Pain assessment in the critically ill adult: Recent evidence and new trends. *Intensive Crit Care Nurs* 2010;34:1-11.
4. Vanderbyl BL, Gelinac C. Family Perspectives of Traumatically Brain-Injured Patient Pain Behaviors in the Intensive Care Unit. *Pain Manag Nurs* 2017;18:202-13.
5. Caruso TJ, Kung TH, Good J, et al. Improving Satisfaction with Pediatric Pain Management by Inviting the Conversation. *Jt Comm J Qual Patient Saf* 2018;44:227-32.

# INTRODUCTION

---

- Pain is very common in intensive care unit (ICU) patients
- Families could use their intimate knowledge to assist in clinical pain assessment of non-communicative patients
- Family involvement in pain assessment could:
  - facilitate earlier pain recognition
  - reduce anxiety for families
  - improve patient and family satisfaction with care

# OBJECTIVES

---

**We conducted a multi-phase study to:**

**ADAPT** the Critical Care Pain Observation Tool (CPOT) for family use (creating the CPOT-Fam)



Pre-clinically **TEST** the CPOT-Fam



**REVISE** the CPOT-Fam in preparation for clinical pilot testing

# METHOD

---

- ADAPT**
- Formed working group of stakeholders
  - Working group discussed CPOT-Fam content, format, language, and graphics
  - Group developed and revised templates of CPOT-Fam, accompanying educational module, and sample cases

- TEST**
- CPOT-Fam tested with public participants
  - Participants viewed educational materials and scored sample cases using CPOT-Fam
  - Determined agreement between CPOT-Fam scores for sample cases (participant vs. reference scores)
  - Collected open-ended feedback on CPOT-Fam and pain assessment in ICU

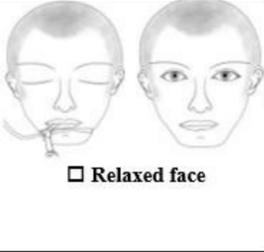
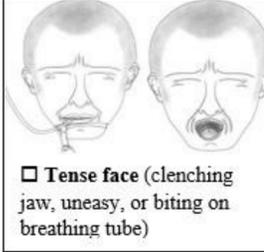
- REVISE**
- Revised CPOT-Fam using participant and working group feedback

# RESULTS

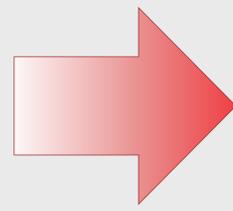
During which condition are you observing the patient's pain?  At rest  During or immediately after a procedure

If you are observing the patient's pain during or immediately after a procedure, what kind of procedure was it? (examples: repositioning, blood draw) \_\_\_\_\_

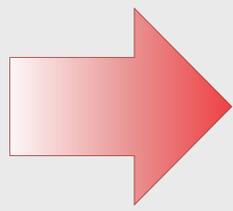
Read the questions below and check off the observation that most closely matches yours.

<b>How is the patient breathing?</b> <i>Answer only if the patient is breathing using a breathing tube and breathing machine.</i>	<input type="checkbox"/> Breathing comfortably <input type="checkbox"/> Breathing comfortably with occasional coughing <input type="checkbox"/> Choking or struggling to breathe
<b>Is the patient making any sounds?</b> <i>Answer only if patient is breathing on their own, without a breathing tube and breathing machine.</i>	<input type="checkbox"/> Talking in normal or quiet voice <input type="checkbox"/> Sighing or moaning <input type="checkbox"/> Calling out or sobbing
<b>What is the patient's facial expression?</b> <i>Please choose from the faces<sup>1</sup> shown. Faces on the left side of each square are patients breathing with a breathing machine and faces on the right side of each square are patients breathing without a breathing machine.</i>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">   <input type="checkbox"/> Relaxed face           </div> <div style="text-align: center;">   <input type="checkbox"/> Frowning           </div> <div style="text-align: center;">   <input type="checkbox"/> Tense face (clenching jaw, uneasy, or biting on breathing tube)           </div> </div>
<b>What are the patient's body movements like?</b>	<input type="checkbox"/> Relaxed or comfortable (examples: lying down, sitting, or moving without pain) <input type="checkbox"/> Moving slowly & carefully (example: touching the site of pain) <input type="checkbox"/> Restless or trying to pull out tubes (examples: breathing or feeding tube, intravenous tube, catheter)
<b>Does the patient have stiff muscles?</b>	<input type="checkbox"/> Calm and relaxed (no stiffness) <input type="checkbox"/> Some tense or stiff muscles <input type="checkbox"/> Most muscles tense or stiff

<sup>1</sup> Illustrations of faces adapted with permission from Gelinas et al (2013).



pre-clinical testing



Is the patient able to describe their level of pain?  
 Yes (if yes, ask the patient to rate their pain on a scale from 0 (no pain) to 10 (worst pain in the world) and write it here: \_\_\_\_\_)  
 No (if no, please continue with the questions below)

When are you observing the patient's pain?  At rest  During or immediately after a procedure (examples: repositioning, blood draw)

If you are observing the patient's pain during or immediately after a procedure, what kind of procedure was it? \_\_\_\_\_

Please check off one option for each question below.

If **yes**, answer only the questions directly below

Is the patient breathing through a breathing tube or breathing machine?

If **no**, answer only the questions directly below

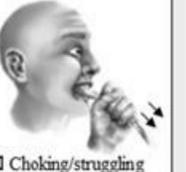
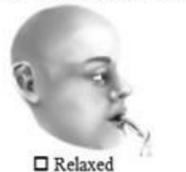
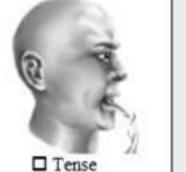
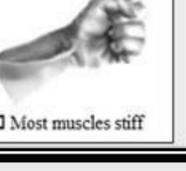
<b>How is the patient breathing?</b>  <input type="checkbox"/> Breathing comfortably	 <input type="checkbox"/> Coughing occasionally	 <input type="checkbox"/> Choking/struggling
<b>What is the patient's facial expression?</b>  <input type="checkbox"/> Relaxed	 <input type="checkbox"/> Frowning	 <input type="checkbox"/> Tense
<b>What are the patient's body movements like?</b>  <input type="checkbox"/> Relaxed or comfortable	 <input type="checkbox"/> Slow or careful	 <input type="checkbox"/> Restless
<b>Does the patient have stiff muscles?</b>  <input type="checkbox"/> No stiff muscles	 <input type="checkbox"/> Some muscles stiff	 <input type="checkbox"/> Most muscles stiff

Figure 2 CPOT-Fam revised in light of pre-clinical feedback from participants and working group, prepared for clinical pilot testing.

- High agreement in CPOT-Fam scores on sample cases (participant vs. reference scores)
  - Total score intraclass correlation coefficient (ICC=0.92)
  - Highest agreement (*vocalization* dimension (ICC=1.00)); lowest agreement (*body movements* dimension (ICC=0.85))
- CPOT-Fam well-received by participants with some suggestions for improvement:
  - “I thought this provided me with a good checklist to run through to detect pain.”
  - “Not graphic enough - words are not specific enough open to interpretation.”
- Most participants (71.4%) felt very comfortable in assessing pain in their loved ones and all participants (100%) felt empowered to act if they identified pain in their loved one

# CONCLUSION

---

- Families feel comfortable assessing pain in their loved ones and feel empowered to act on their pain assessments
- Family engagement in pain assessment could improve patient care in ICUs
- Families consider the CPOT-Fam valuable in pain assessment
- Clinical evaluation is needed to determine CPOT-Fam feasibility, acceptability, performance in ICU settings

# ACKNOWLEDGEMENTS

---

Thank you working group members for helping create and refine the CPOT-Fam:

- Corson Johnstone
- Kara Plotnikoff
- Dr. Karla Krewulak
- Rameiya Paramalingam
- Rebecca Brundin-Mather

Thank you to **Stephanie Sakkab** for creating the illustrations for the revised CPOT-Fam (Figure 2).

# REFERENCES

---

1. Gupta M, Sahi MS, Bhargava AK, Talwar V. The Prevalence and Characteristics of Pain in Critically Ill Cancer Patients: A Prospective Nonrandomized Observational Study. *Indian J Palliat Care* 2015;21:262-7.
2. Puntillo KA, Neuhaus J, Arai S, et al. Challenge of assessing symptoms in seriously ill intensive care unit patients: can proxy reporters help? *Crit Care Med* 2012;40:2760-7.
3. Gelinas C. Pain assessment in the critically ill adult: Recent evidence and new trends. *Intensive Crit Care Nurs* 2016;34:1-11.
4. Vanderbyl BL, Gelinas C. Family Perspectives of Traumatically Brain-Injured Patient Pain Behaviors in the Intensive Care Unit. *Pain Manag Nurs* 2017;18:202-13.
5. Caruso TJ, Kung TH, Good J, et al. Improving Satisfaction with Pediatric Pain Management by Inviting the Conversation. *Jt Comm J Qual Patient Saf* 2018;44:227-32.

# CONTACT INFORMATION

---

Dr. Anmol Shahid (Postdoctoral Associate)

[Anmol.shahid1@ucalgary.ca](mailto:Anmol.shahid1@ucalgary.ca)

Dr. Henry Thomas Stelfox (Principal Investigator)

[tstelfox@ucalgary.ca](mailto:tstelfox@ucalgary.ca)