CAEP EMERGENCY ULTRASOUND COMMITTEE SPRING 2026 NEWSLETTER

Greetings POCUS Enthusiasts,

Welcome to the spring 2026 CAEP EUC Newsletter. In this version, we have gathered a variety of upcoming events, curated a list of recently published Canadian POCUS articles and review the recently published POCUS Literature Primer series. Make sure to also check out the interesting and practical case of a pediatric limp.

Happy reading!

-Talia Burwash-Brennan

In this newsletter:

What is the sign demonstrated in the ultrasound image at the top of the page?

Answer page 9

Upcoming POCUS-Related Events

CAEP National Grand Rounds (NGR)

Wednesday, April 15th

1400 ET / 1100 PT

REGISTER NOW

H's and TTE's: POCUS in Cardiac Arrest

Learning Objectives

At the end of the session, participants will be able to:

1. Improve detection of ROSC with peripheral POCUS Pulse Checks (Medical Expert, Communicator)
2. Manage the spectrum of shock that is "Pseudo-PEA" cardiac activity (Medical Expert, Communicator, Scholar)
3. Terminate resuscitation with greater confidence (Medical Expert, Communicator, Scholar)

Pediatric Emergency Medicine POCUS

April 16th 2025 2:00 PM EST

***Canadian PEM POCUS Core Lecture Series*:**

Gastrointestinal : Intussusception and small bowel obstruction - PEM POCUS Longitudinal Curriculum: the Core Lecture Series

Speaker: Dr. Maya Harel Sterling

This longitudinal POCUS curriculum is taught virtually by PEM POCUS expert faculty from across Canada on Thursday afternoons at 2pm EST every 2 months.

To receive the invitation to the Canadian PEM POCUS Core Lecture Series, please email: jade.seguin@mcgill.ca

ACEP/AEUS Probing the Literature Ultrasound Journal Club

ACEP EMERGENCY ULTRASOUND SECTION

PROBING the Literature ULTRASOUND JOURNAL CLUB

AEUS ACADEMY OF EMERGENCY ULTRASOUND

Next session: April 16th 2026 2:00 PM EST

IVC/Volume Responsiveness

Blockheads: Regional Anesthesia Collaborative

BlockHeads EMERGENCY DIRECTED REGIONAL ANALGESIA

Next session: PeNG vs FICB Recap and Ankle Fracture Blocks

April 30th 2026 1:00 pm EST

Email: dan.mirsch@gmail.com

POCUS Case: A Limping Child

Frédérique Phaneuf , MD, Emergency Physician, Hôpital Charles Lemoyne

Jade Seguin, MD, Pediatric Emergency Physician, Assistant Professor, Montreal Children's Hospital, McGill University

Case:

A previously healthy 7-year-old boy presented to the emergency department with left-sided hip pain and an intermittent antalgic gait for the last 3 days. The patient was able to weight bear but with a limp. There was no history of trauma or fever at any point. He had a recent upper respiratory tract infection 3 weeks prior. The patient had no other symptom, and the focused review of systems was negative.

On exam, the patient looked well. His vital signs on arrival were a heart rate of 130 beats per minute, a respiratory rate of 20, a saturation of 100% and a normal blood pressure. The patient's oral temperature was 36C. The patient kept his left leg in abduction and slight hip flexion. He had no bony tenderness and no rash. The range of motion of his hip was limited by pain with external rotation. His distal neurovascular exam was normal. His left knee and right hip examinations were normal as was the remainder of his physical examination.

Point of care ultrasound (POCUS) was done using the linear probe of the GE Venue Go Ultrasound machine. An ultrasound was completed of the left hip (Image 1 and 2) and the right hip (Image 3).

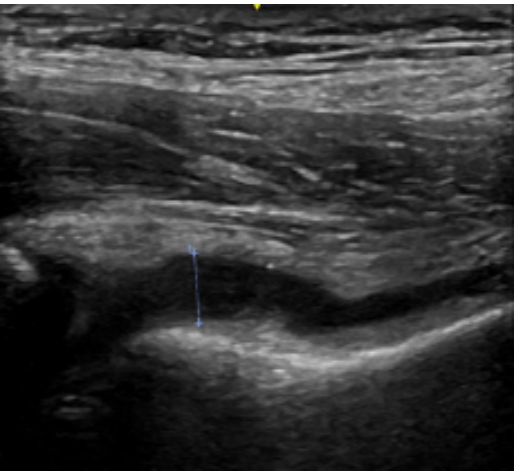

Image 1. Longitudinal anterior view of the left hip joint

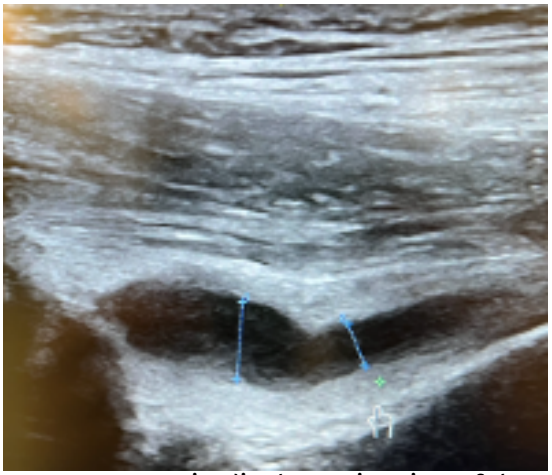

Image 2. Longitudinal anterior view of the left femoral head and neck

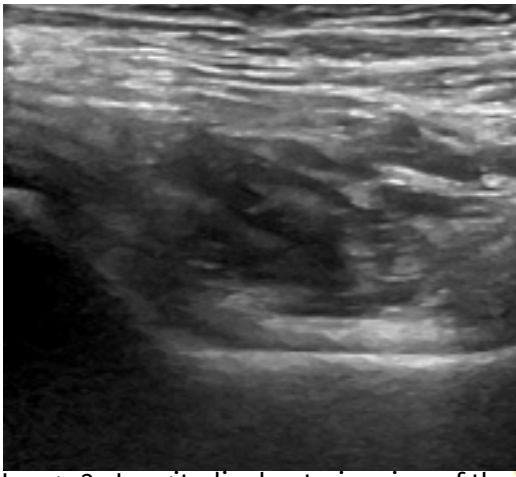

Image 3. Longitudinal anterior view of the right femoral head and neck

What diagnosis do the images suggest given the clinical context?

A Limping Child (continued)

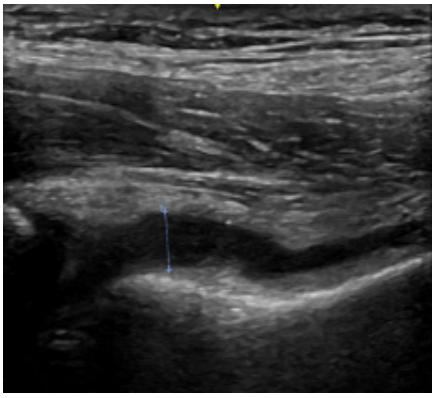

Image 1. Ultrasound image of the left hip joint showing the presence of an effusion measuring 5.3 mm

Image 2. Ultrasound image of the left hip joint showing the presence of an effusion measuring 1) 5.5 mm 2) 3.2 mm. Significant synovial thickening is also shown on this image.

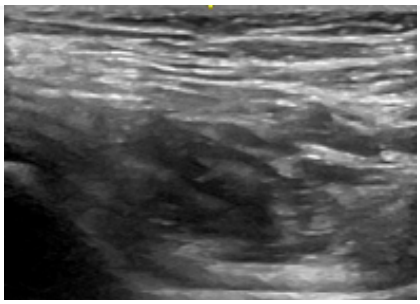

Image 3. Ultrasound image of the left hip joint showing the presence of an effusion measuring 5.3 mm

Case Review:

A limping child as a chief complaint accounts for approximately 5% of all paediatric emergency department visits.[1] In the evaluation of these patients, hip POCUS can be an essential tool. The technique is not only easy to learn but it can also be rapidly performed at the bedside. Compared to radiology ultrasound (RADUS), POCUS has a sensitivity of approximately 85-90% and a specificity of 91-98%[2] and there is excellent agreement between POCUS and RADUS for the presence or absence of a hip effusion (kappa = 0.81).[3]

Hip POCUS allows emergency physicians to diagnose the presence or absence of a joint effusion. However, it is important to remember that it does not differentiate between infectious, inflammatory or traumatic etiologies. Recent studies have identified the clinical indicators that help distinguish septic arthritis from pediatric transient synovitis including the presence of a fever, non weight bearing status, and an elevated ESR, CRP or white blood cell count.[4,5,6]

The presence of a hip effusion is defined as anechoic fluid in the synovial space, present between the anterior surface of the femoral neck and the posterior surface of the iliopsoas muscle, of more than 5-mm or a greater than 2-mm difference in comparison to the contralateral hip (Image 1, 2 and 3). In transient synovitis, thickened synovium can also be seen (Image 2).

A Limping Child (continued)

Case Review (continued):

To perform a hip POCUS, the patient should be placed supine, with the affected hip slightly abducted and externally rotated. The linear probe should be placed over the anterior hip and oriented parallel to the femoral neck. The probe will be perpendicular to the inguinal crease (Image 4a). On the image, the internal anatomical landmarks should be visualized: the femoral neck, femoral head, iliopsoas and synovial space between them (Image 4b).

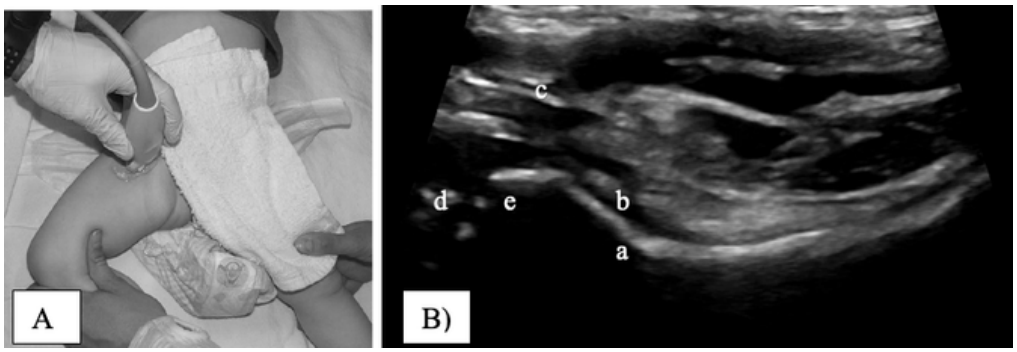

Image 4. 4A) Probe position for imaging of the hip effusion. B) Ultrasound image of the hip and its anatomical landmarks a) Femoral neck b) Synovial fluid c) Iliopsoas d) Femoral head e) physis

Case Conclusion:

Hip pain and limping are common complaints in the pediatric emergency department. POCUS is a rapid and reliable technique to identify the presence of a hip effusion and it significantly expedited this patient's care. The left hip effusion was identified early as the cause of the patient's symptoms. The patient had normal blood tests and was able to weight bear. The diagnosis of septic arthritis was ruled out. He was diagnosed with transient synovitis. He did not require further imaging like radiography or a radiology-performed ultrasound. The patient was discharged home with NSAIDs, good return instructions and follow-up with his own doctor. A few days later, his symptoms had completely resolved.

References:

1. Truong T, Chang D, Friedman S. Limping Child. Pediatr Rev. 2024;45(8):476-478.
2. Cruz C, V.R., Mannix R, Monuteaux M, Levy J., Point-of-care hip ultrasound in a pediatric emergency department. Am J Emerg Med., 2018;36(7):1174-7.
3. Katz-Dana, H., Stackievicz, R., Dana, E. et al., Diagnostic accuracy of point-of-care ultrasound (PoCUS) for the diagnosis of hip effusion in the pediatric emergency department. Can J Emer Med 2024.
4. Lin-Martore, M., Kornblith, A., Shaahinfar, A. PEM POCUS Series: Hip Effusion. 2021.
5. Caird, M., et al., Factors distinguishing septics arhtitis from transient synovitis of the hip of children. A prospective study. J Bone Joint Surg Am, 2006.
6. QingSong T, e.a., Clinical indicators for distinguishing septic arthritis from pediatric transient synovitis of the hip : a systematic review and meta-analysis. BMC infect Dis., 2024.

The POCUS Literature Primer series is a compendium of the most influential studies in point-of-care ultrasound (POCUS). Each paper focuses on two core POCUS applications (e.g., renal and biliary) and identifies the five most influential publications within each domain. Articles are selected by a national panel of Canadian POCUS experts using a modified Delphi methodology, consisting of three rounds of structured surveys and discussion to achieve consensus. The series provides concise summaries of each study's objectives and clinical relevance, highlighting the factors contributing to their impact. Emphasis is placed on translating these landmark studies into meaningful bedside application for readers. The series is intended for researchers, educators, practicing clinicians, and learners—including medical students, residents, and fellows—seeking to engage with POCUS in an evidence-informed manner. Stay tuned for upcoming articles in the series!

FAST / E-FAST (2022)

Kim DJ, Bell C, Jelic T, Sheppard G, Robichaud L, Burwash-Brennan T, Chenkin J, Lalande E, Buchanan I, Atkinson P, Thavanathan R, Heslop C, Myslik F, Lewis D. Point of Care Ultrasound Literature Primer: Key Papers on Focused Assessment With Sonography in Trauma (FAST) and Extended FAST. Cureus. 2022 Oct 6;14(10):e30001. doi: 10.7759/cureus.30001. PMID: 36348832.

Renal & biliary POCUS (2023)

Kim DJ, Bell CR, Jelic T, Thavanathan R, Heslop CL, Myslik F, Lewis D, Atkinson P, Chenkin J, Buchanan IM, Olszynski P, Sheppard G, Burwash-Brennan T, Lalande E. Point-of-Care Ultrasound (POCUS) Literature Primer: Key Papers on Renal and Biliary POCUS. Cureus. 2023 Apr 8;15(4):e37294. doi: 10.7759/cureus.37294. PMID: 37168176.

Cardiac arrest & shock (2023)

Kim DJ, Atkinson P, Sheppard G, Chenkin J, Thavanathan R, Lewis D, Bell CR, Jelic T, Lalande E, Buchanan IM, Heslop CL, Burwash-Brennan T, Myslik F, Olszynski P. POCUS literature primer: key papers on POCUS in cardiac arrest and shock. CJEM. 2024 Jan;26(1):15-22. doi: 10.1007/s43678-023 00611-1. Epub 2023 Nov 23. PMID: 37996693.

Cardiac & lung POCUS (2024)

Kim DJ, Sheppard G, Lewis D, Buchanan IM, Jelic T, Thavanathan R, Myslik F, Lalande E, Bell CR, Chenkin J, Heslop CL, Olszynski P, Atkinson P, Burwash-Brennan T. POCUS literature primer: key papers on cardiac and lung POCUS. CJEM. 2024 Oct;26(10):713-720. doi: 10.1007/s43678-024-00755-8. Epub 2024 Aug 26. PMID: 39183217.

Aorta & DVT POCUS (2025)

Kim DJ, Jelic T, Heslop CL, Newbigging J, Skitch S, Burwash-Brennan T, Sheppard G, Chenkin J, Thavanathan R, Bell CR, Atkinson P, Lewis D, Myslik F, Lalande E, Olszynski P. POCUS literature primer: key papers on aorta and deep vein thrombosis POCUS. CJEM. 2025 Apr;27(4):294-304. doi: 10.1007/s43678-025-00865-x. Epub 2025 Feb 4. PMID: 39903423.

RECENT CANADIAN POCUS RESEARCH

Administration

Abicho T, Girdler H, Tafa GB, Zewdu T, Wytsma J, Sahota I. Point-of-care ultrasound in Ethiopian emergency and critical care medicine: a cross-sectional study of utilization, barriers, and training priorities. Int J Emerg Med. 2026 Apr 4;19(1):86. doi: 10.1186/s12245-026-01225-x. PMID: 41935276; PMCID: PMC13054997.

Olszynski P, Bell C, Kim DJ. Other people's money: why healthcare systems fail to reinvest in POCUS. CJEM. 2025 Dec;27(12):939-940. doi: 10.1007/s43678-025-01063-5. PMID: 41369888.

Cardiac

Giannakakis SM, Stiell I, Woo MY, Perry JJ. Utilization of cardiac point-of-care ultrasound for atrial fibrillation management by Canadian emergency physicians: a cross-sectional survey. CJEM. 2025 Dec;27(12):995-1001. doi: 10.1007/s43678-025-01012-2. Epub 2025 Oct 22. PMID: 41123756.

Education

Ali N, Tan A, Soomar SM, Shelton D, Simard R, Chenkin J. Effectiveness of a flipped classroom model for enhancing emergency physicians' skills in diagnosing high-risk pulmonary embolism with point-of-care ultrasound: a randomized controlled study. Int J Emerg Med. 2026 Jan 28;19(1):30. doi: 10.1186/s12245-026-01129-w. PMID: 41606455; PMCID: PMC12849391.

Grubert Van Iderstine M, Jensen J, Jelic T, Li TY. A randomized controlled study on medical students learning anatomy through hands-on ultrasound. Anat Sci Educ. 2025 Sep;18(9):948-960. doi: 10.1002/ase.70078. Epub 2025 Jul 2. PMID: 40605117; PMCID: PMC12413477.

Grubic N, Nihal S, Herr JE, Jelic T, Montague SJ, Aleksova N, Nesbitt G, Kiamanesh O, Belliveau DJ, Kolbenson L, Kanyuka Z, Mulvagh SL, Sirwani B, Johri AM. Training Nonexpert Users in Cardiopulmonary Point-of-Care Ultrasound Using a Virtual Curriculum and a Teleconsultation Model: A Multicentre Study. CJC Open. 2025 Jun 18;7(11):1512-1523. doi: 10.1016/j.cjco.2025.06.009. PMID: 41425780; PMCID: PMC12713189.

Reid S, Goffi A, Tsou E, Pivetta E, Pascoe S, Solis-McCarthy J, Foster M, Gelabert C, Smith M, Bell C, Whalen EC, Latta H, Desy J, Hayward S, Israel H, Leamon A, Peck M, Wong A, Wong T, Yap C, Chung EML. ULTRA-Metrics: Delphi-Derived Framework for Assessing Ultrasound Competency. J Ultrasound Med. 2026 Feb;45(2):383-400. doi: 10.1002/jum.70074. Epub 2025 Oct 7. PMID: 41054916; PMCID: PMC12757764.

Sheppard G, Harris J, Hutchings C, Wadman-Scanlan H, Collins P. Integration of Point of Care Ultrasound into an existing undergraduate medicine anatomy course. Can Med Educ J. 2025 Jul 2;16(3):87-88. doi: 10.36834/cmej.80273. PMID: 40771794; PMCID: PMC12322850.

Stolz L, Sheppard G, Boyd J, Baez J, Minges P, Pusic M, Swarm M, Hilbert M, O'Brien M, Harris K, Varner C, LeBlanc C, Boutis K. Effectiveness of a Web-Based Training Intervention in Teaching Emergency Physicians First-Trimester Point-of-Care Ultrasound Image Interpretation. Ann Emerg Med. 2025 Jun;85(6):541-554. doi: 10.1016/j.annemergmed.2025.01.005. Epub 2025 Feb 20. PMID: 39985553.

Obstetrical

Sheppard G, Stolz L, Boyd JS, Pusic M, Baez J, Minges P, Swarm M, Hilbert M, O'Brien M, Harris K, Varner C, LeBlanc C, Boutis K. First Trimester Point of Care Ultrasound: Imaging Features and Review Behaviors Associated With Diagnostic Accuracy. Acad Emerg Med. 2025 Nov;32(11):1224-1234. doi: 10.1111/acem.70094. Epub 2025 Jul 11. PMID: 40641453.

RECENT CANADIAN POCUS RESEARCH

Pediatric POCUS

Alkhurayji A, Takadera T, Harel-Sterling M. Diagnosis of Late-Presenting Congenital Diaphragmatic Hernia by Point-of-Care Ultrasound. J Emerg Med. 2026 Jan;80:177-180. doi: 10.1016/j.jemermed.2025.10.005. Epub 2025 Oct 10. PMID: 41285083.

Davis AL, Tessaro M, Schuh S, Malhotra AK, Sumaida M, Gauthey M, Zahid O, Breitbart S, Branson HM, Laughlin S, Hanak BW, Kulkarni AV. Change in Optic Nerve Sheath Diameter and Cerebral Ventricular Shunt Failure in Children. JAMA Netw Open. 2025 May 1;8(5):e2511009. doi: 10.1001/jamanetworkopen.2025.11009. PMID: 40377937; PMCID: PMC12084842.

McLean L, Seguin J, Olszynski P, Kim DJ. Just the facts: resuscitative point-of-care ultrasound in pediatrics. CJEM. 2025 Oct;27(10):778-780. doi: 10.1007/s43678-025-00954-x. Epub 2025 Jul 3. PMID: 40608225.

Takadera T, Bularan C, Sarathy K, Lee HJ. Assessing Outcomes of Point-of-Care Ultrasound Use in Testicular Torsion in a Pediatric Emergency Department. Pediatr Emerg Care. 2026 Feb 1;42(2):e26-e29. doi: 10.1097/PEC.0000000000003505. Epub 2025 Nov 7. PMID: 41614724.

Procedural POCUS

Lakkadghatwala R, Wilson A, Sabhaney V, Gottlieb M, Shen Y, Pawliuk C, Ahn JS, Kim DJ. Ultrasound guidance compared to anatomic landmark approach for thoracentesis: A systematic review and meta-analysis. Am J Emerg Med. 2025 Nov;97:159-164. doi: 10.1016/j.ajem.2025.07.049. Epub 2025 Jul 22. PMID: 40738083.

Lee JS, Chenkin J, Simard R, Bhandari T, Woo MY, Perry JJ, Eagles D, Wong C, McRae AD, Lang E, Newbigging J, Sivilotti MLA, Chernoff I, Borgundvaag B, McLeod SL, Melady D, Kiss A, Émond M. Ultrasound-Guided Regional Anesthesia by Emergency Physicians for Hip Fractures and Delirium: A Randomized Clinical Trial. JAMA Netw Open. 2025 Dec 1;8(12):e2549337. doi: 10.1001/jamanetworkopen.2025.49337. PMID: 41396601; PMCID: PMC12706686.

Park S, Berthelsen L, Bell C. Sonographic assessment of fasting: emergency room sedations. CJEM. 2026 Mar 30. doi: 10.1007/s43678-026-01142-1. Epub ahead of print. PMID: 41913037.

Renal POCUS

Gaudreau-Simard M, Ruller S, Dann M, Woo MY, Mallick R, Mcinnes MDF, Clark EG, Evans J. Imaging of Medical Patients with Acute Kidney Injury: Patterns of Ultrasound Use and the Role of Point-of-care Ultrasound at a Tertiary Care Center. J Gen Intern Med. 2026 Jan;41(1):119-125. doi: 10.1007/s11606-025-09704-2. Epub 2025 Jul 9. PMID: 40634652; PMCID: PMC12855657.

Resuscitative POCUS

Marshall RA, DeVito-Porter K, Dallaire G, Jelic T, Smith A, Myslik F, Mohindra R, Thavanathan R, Wilson TD, Olszynski P. Transesophageal echocardiography during cardiopulmonary resuscitation is associated with alternate areas of compression: Analysis of healthcare provider experiences with potential implications for conventional compressions. PLoS One. 2026 Jan 20;21(1):e0339974. doi: 10.1371/journal.pone.0339974. PMID: 41557663; PMCID: PMC12818596.

Sharif S, Flindall H, Basmaji J, Ablordeppey E, Díaz-Gómez JL, Lanspa M, Nikravan S, Piticaru J, Lewis K. Critical Care Ultrasonography for Volume Management: A Systematic Review, Meta-Analysis, and Trial Sequential Analysis of Randomized Trials. Crit Care Explor. 2025 May 14;7(5):e1261. doi: 10.1097/CCE.0000000000001261. PMID: 40366291; PMCID: PMC12080698.

Sharif S, Wang K, Basmaji J, Ablordeppey E, Díaz-Gómez JL, Lanspa M, Nikravan S, Lewis K. Critical Care Ultrasonography for Cardiogenic Shock: A Scoping Review. Crit Care Explor. 2026 Mar 12;8(3):e1388. doi: 10.1097/CCE.0000000000001388. PMID: 41817314; PMCID: PMC12987404.

Review/Commentary

Mani N, Rao S, Kim DJ. Point-of-care ultrasound in the modern era of emergency medicine: a narrative review of the recent literature. Curr Opin Crit Care. 2026 Jan 23. doi: 10.1097/MCC.0000000000001358. Epub ahead of print. PMID: 41581010.

POCUS COMPETITION

June 6-7, 2026

REGISTER

This event will see teams of residents, medical students, RNs, physicians, and paramedics compete against each other to work through cases that utilize POCUS and SIMULATION.

CAEP26 will combine the technical skills and know-how of POCUS with the team collaboration and communication of simulation to solve clinical cases and we'll see one team take home the glory at the finals.

Individuals who want to help with the POCUS games as a volunteer can contact Lauren Kendall Golabek: lkgolabek@caep.ca.

What is the sign demonstrated in the ultrasound image on the first page?

The bunny (or sometimes called the 'Playboy' bunny) is a sign found in congestive heart failure when the presence of dilated hepatic veins and a dilated inferior vena cava create a confluence that resembles the head of a bunny.

References:

Hokama A, Arakaki S, Shibata D, Maeshiro T, Kinjo F, Fujita J. "Playboy bunny" sign of congestive heart failure. West J Emerg Med. 2011 Nov;12(4):433-4.

Xiang H, Han J, Ridley WE, Ridley LJ. Playboy bunny and moose head sign: Hepatic veins in congestive heart failure. J Med Imaging Radiat Oncol. 2018 Oct;62 Suppl 1:99-100.