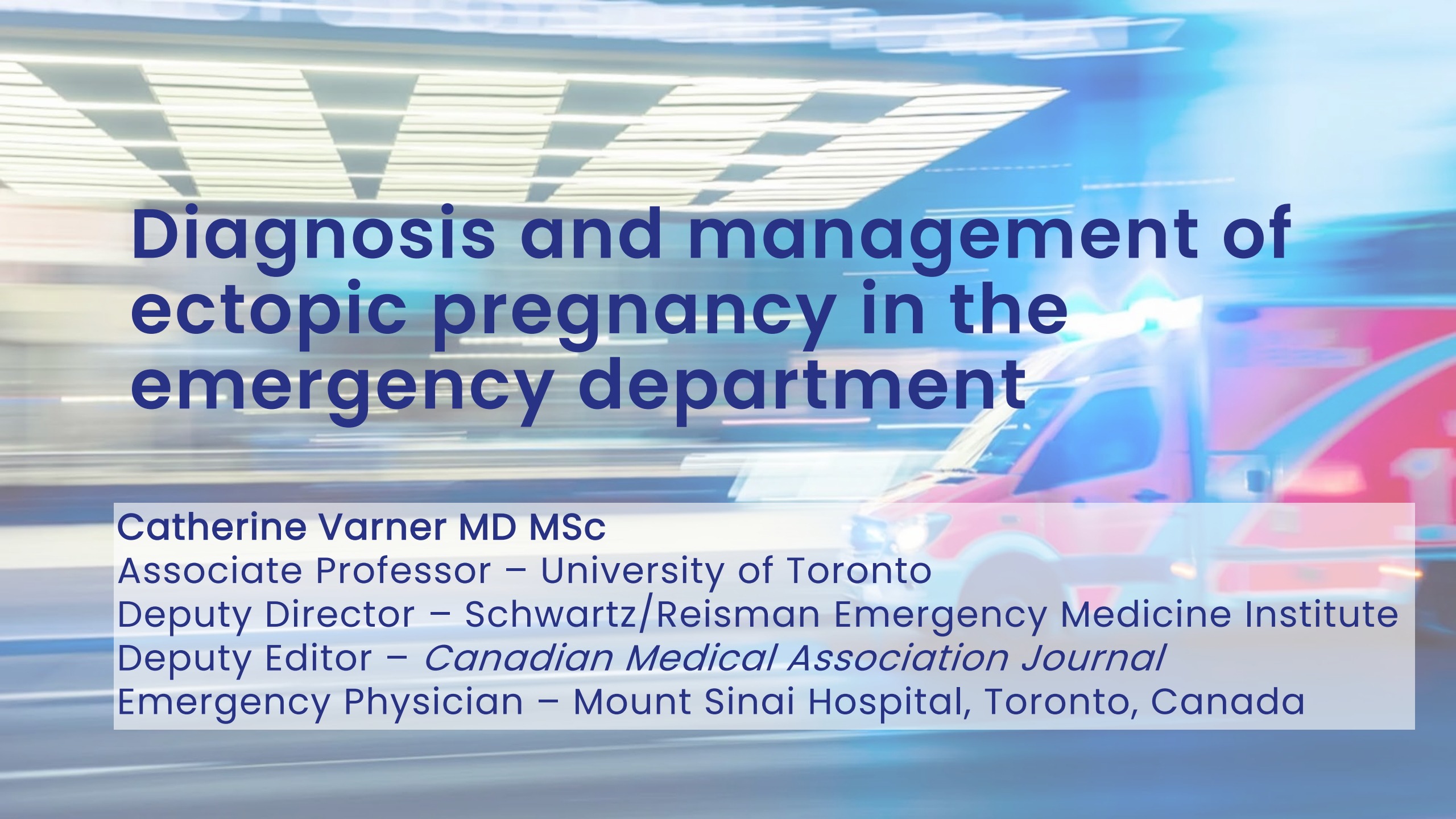

Diagnosis and management of ectopic pregnancy in the emergency department

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Deputy Director – Schwartz/Reisman Emergency Medicine Institute
Deputy Editor – *Canadian Medical Association Journal*
Emergency Physician – Mount Sinai Hospital, Toronto, Canada

Disclosures

- Faculty: Dr. Catherine Varner
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  - *Schwartz / Reisman Emergency Medicine Institute – Mount Sinai Hospital*
  - *University of Toronto*
  - *Canadian Medical Association*
- All images included in this talk are from unsplash.com or used with permission from Sinai Health

Objectives

1

Recognize key considerations in identifying potentially high-risk ectopic presentations.

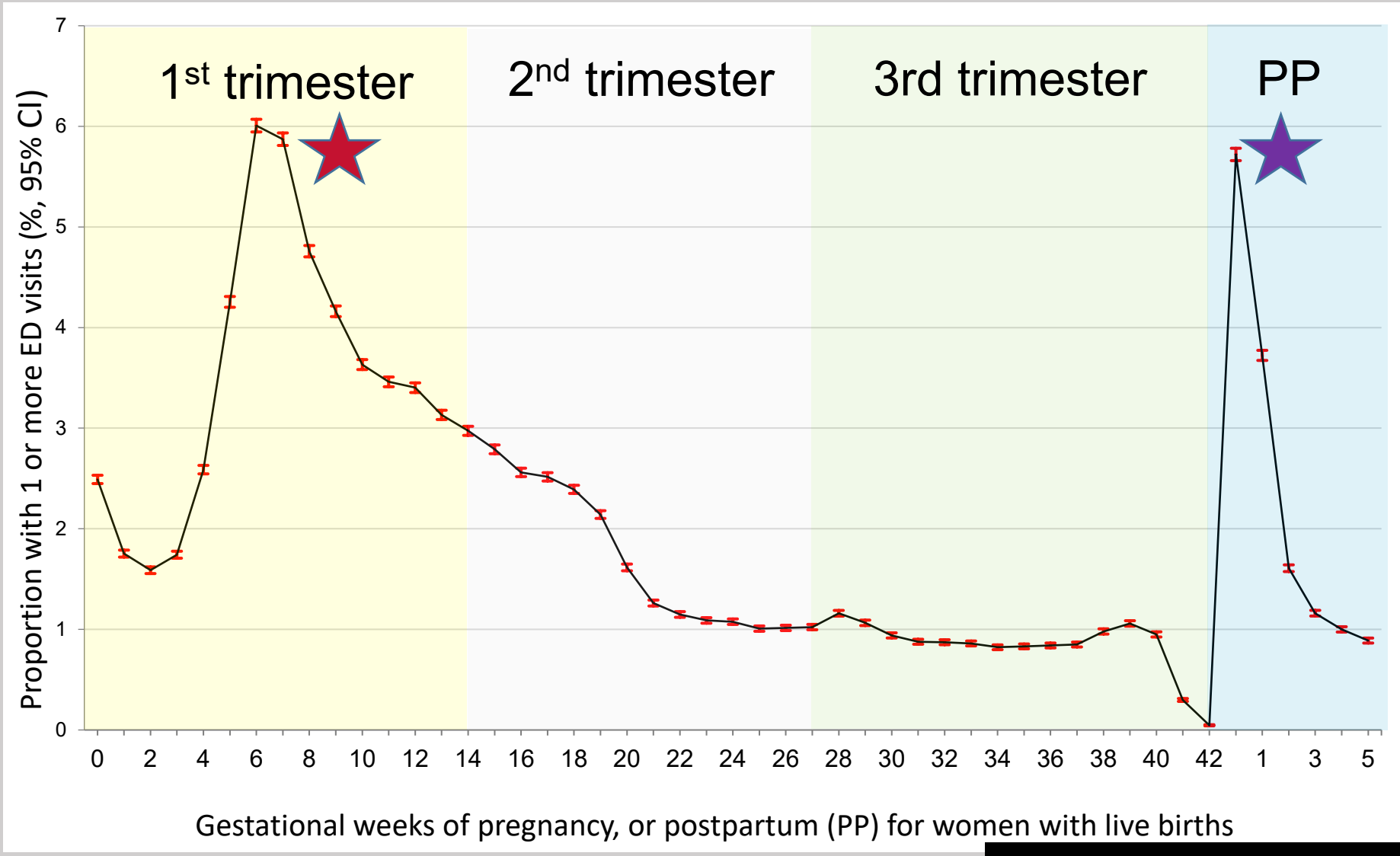
2

Describe immediate clinical actions that support timely assessment and stabilization.

3

Discuss strategies for managing ectopic pregnancy care across a variety of resource settings.

Pregnant women attend the ED when urgent, ambulatory obstetrical care is *not* routinely available



Varner C, Park A, Little D, Ray J. *CMAJ Open*. 2020

EPC LOSS

Ectopic
PUL
Complications of miscarriage
- *Massive hemorrhage*
- *Retained products of conception*
- *Septic endometritis*

L – This is a **loss** and not your fault
O – **Observe** and acknowledge the ED environment
S – **Support** in the ED (Partner, SW, Team member)
S – **Support** in follow-up (psychological supports, family physician, EPAC)


SIUI

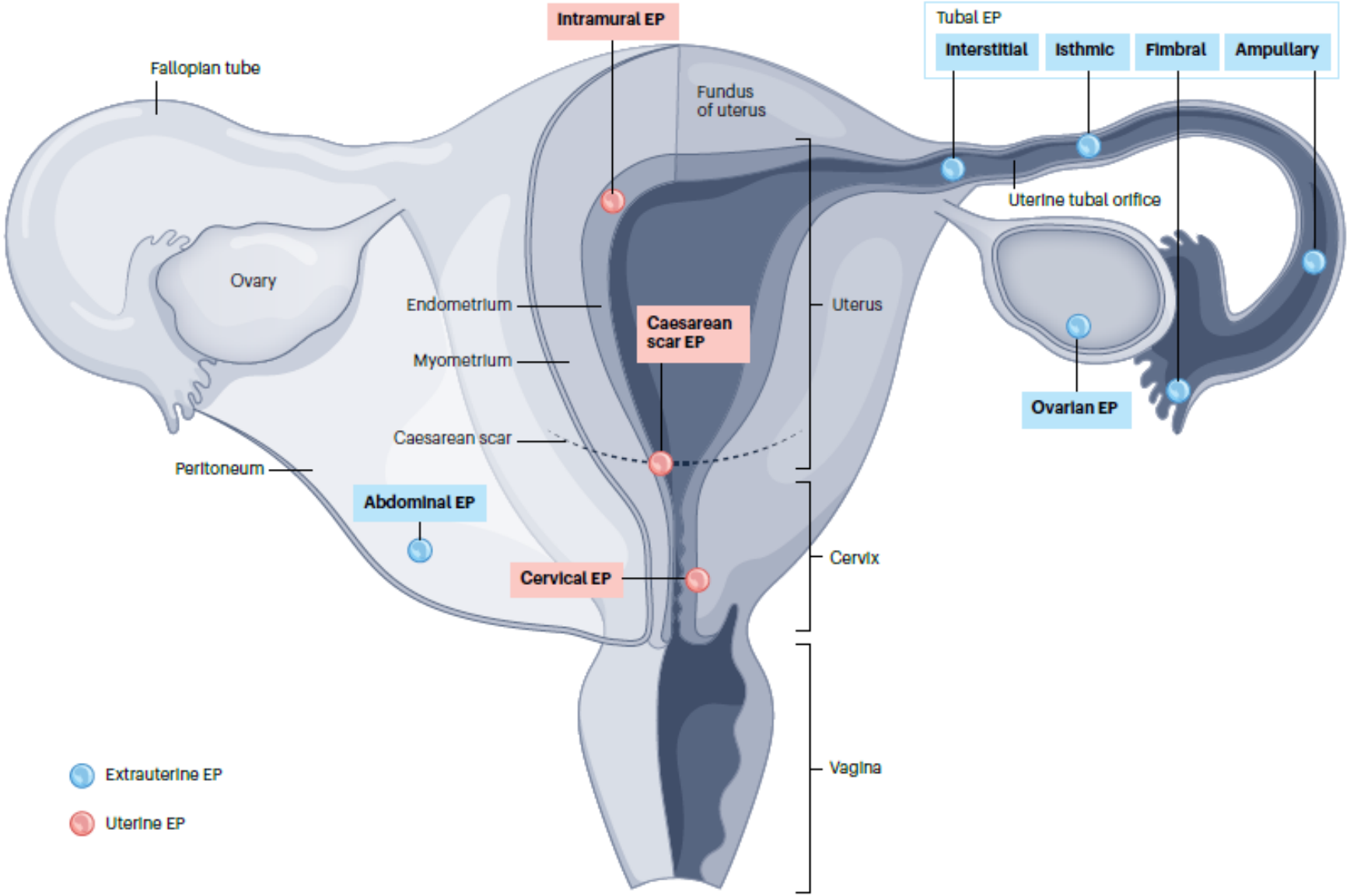
Review | Access to health care | CPD

Diagnosis and management of early pregnancy loss

Vrati M. Mehra BSc MSc, Salwa Farooqi MSc MD, Pallavi Sriram MD, Modupe Tunde-Byass MBBS

Cite as: *CMAJ* 2024 October 15;196:E1162-8. doi: 10.1503/cmaj.231489

cmaj
CANADIAN MEDICAL ASSOCIATION JOURNAL



Chong KY, et al. Ectopic pregnancy. Nat Rev Dis Primers. 2024 Dec 12;10(1):94.

Pregnancy of Unknown Location

Methotrexate Failure

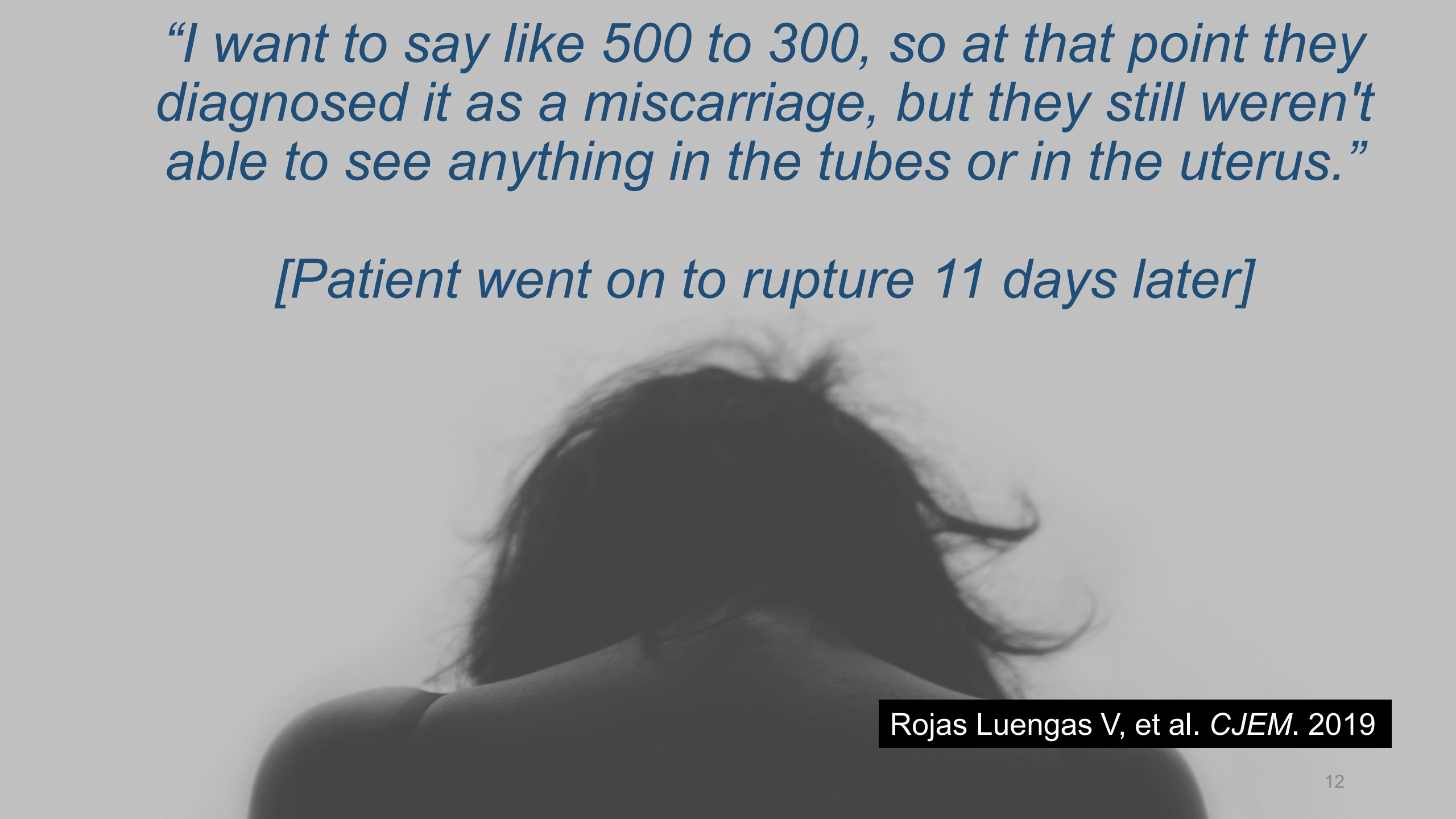
Psychological Outcomes

PUL

1 in 5 ectopic pregnancy

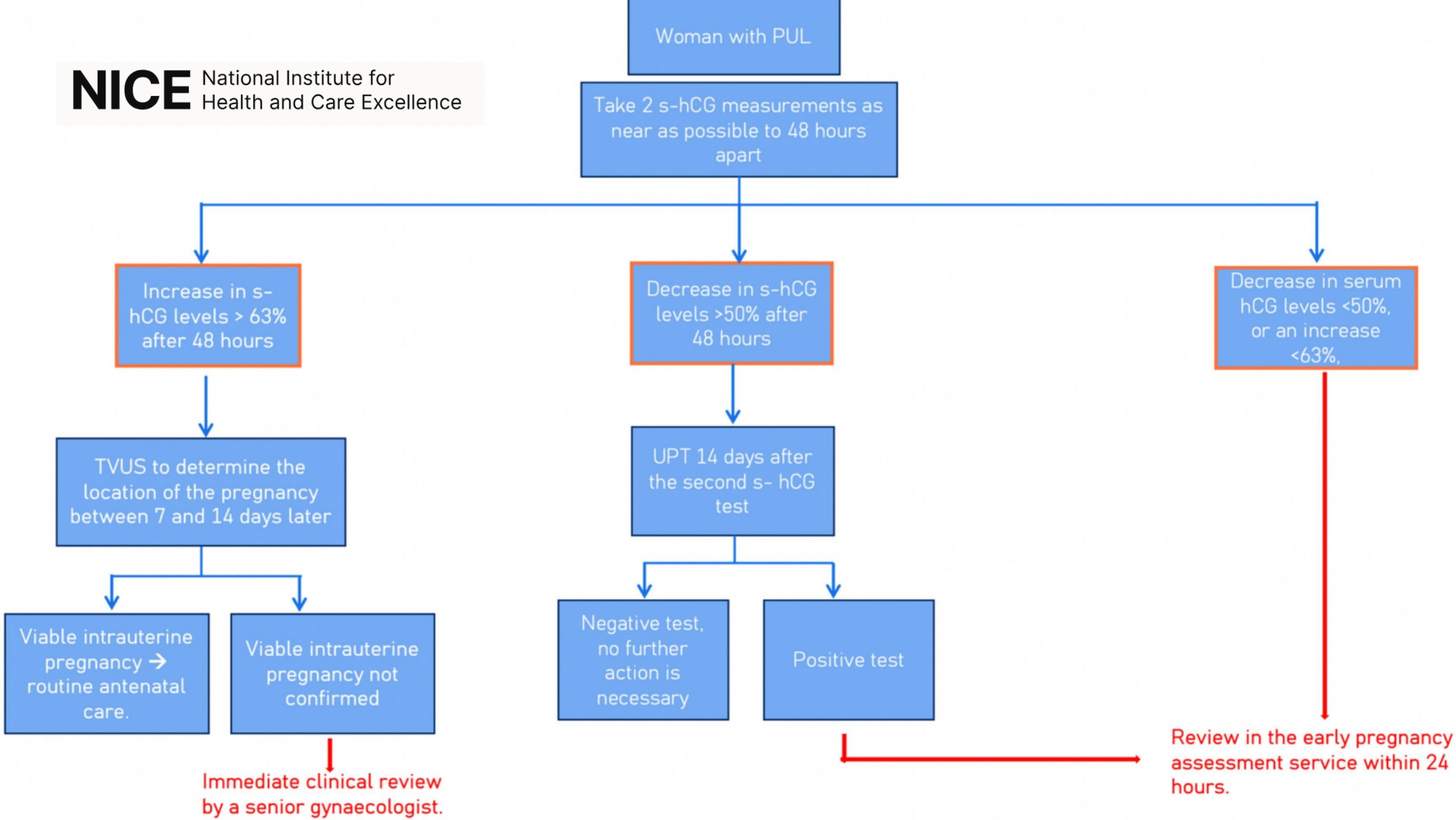
“I want to say like 500 to 300, so at that point they diagnosed it as a miscarriage, but they still weren't able to see anything in the tubes or in the uterus.”

[Patient went on to rupture 11 days later]

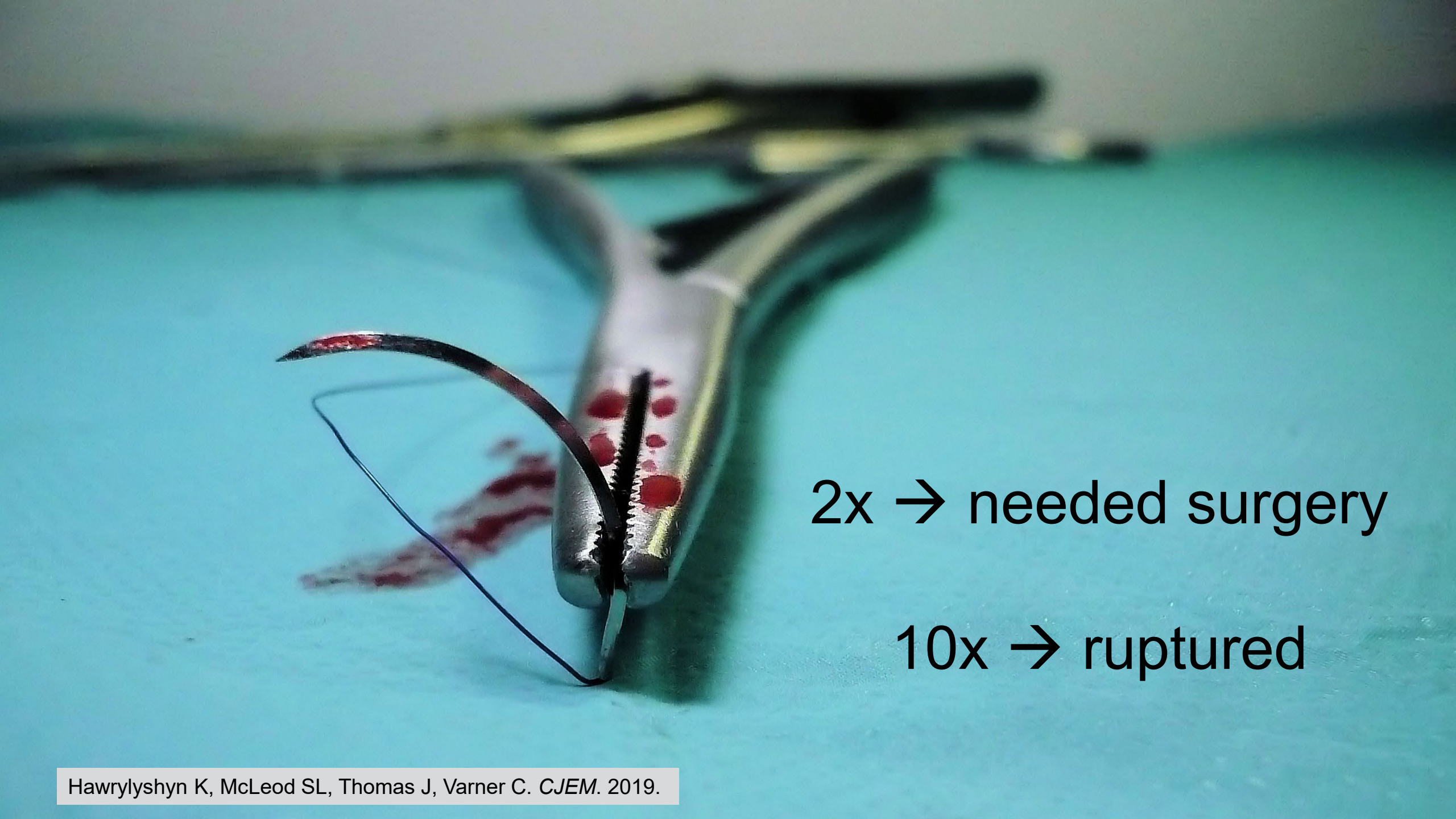


Rojas Luengas V, et al. *CJEM*. 2019

NICE National Institute for Health and Care Excellence



High Risk: Methotrexate Treatment Failure in Ectopic Pregnancy



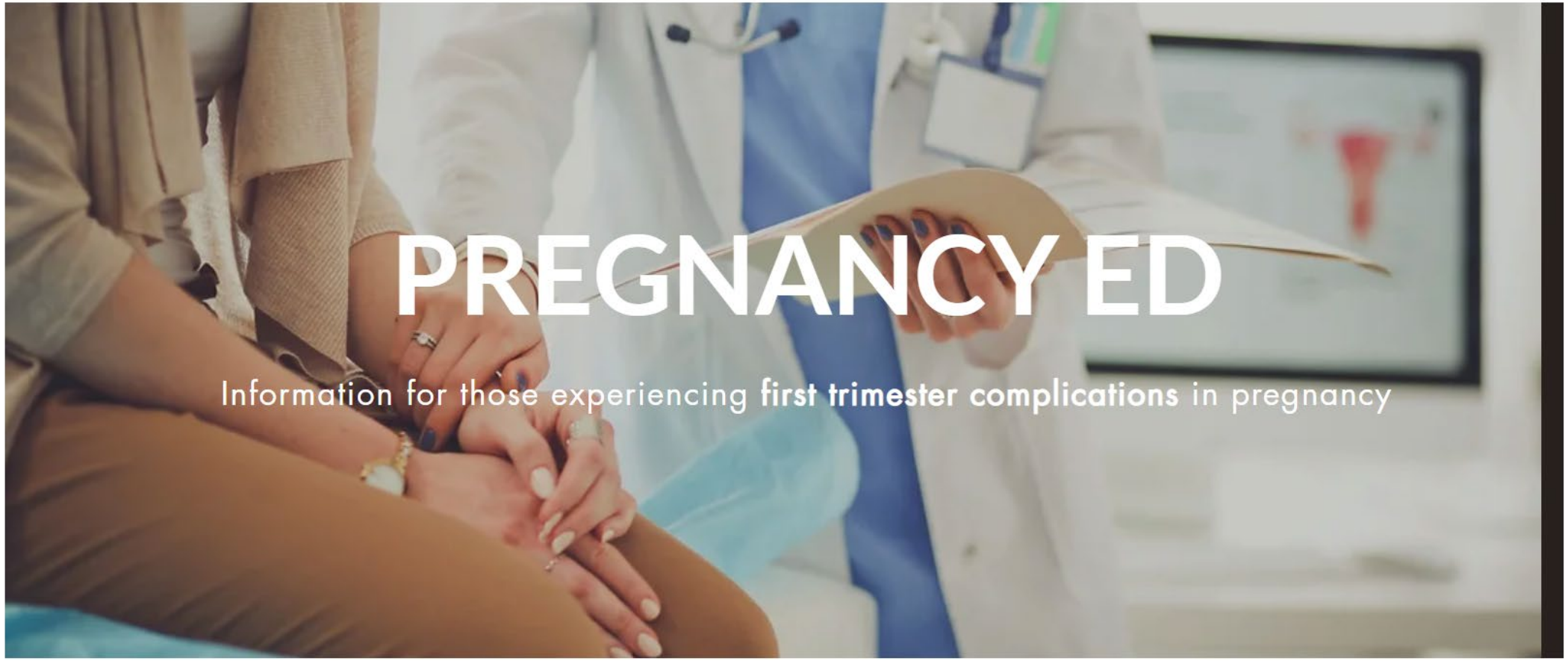
Hawrylyshyn K, McLeod SL, Thomas J, Varner C. *CJEM*. 2019.

Led to the adoption
of a *Methotrexate Safety Kit and Checklist* in the Sinai ED
for gynecology trainees
and staff.

PregnancyED

1st trimester complications

What to expect in the ED | Early pregnancy complications | Miscarriage & Loss | Support & Resources



PregnancyED

1st trimester complications

What to expect in the ED | Early pregnancy complications | Miscarriage & Loss | Support & Resourc

What to expect in the emergency department (ED)

Early pregnancy complications

Miscarriage & Loss

- What to expect after an emergency

PregnancyED.com

Information for those experiencing first trimester complications in pregnancy

This patient education website was created by emergency department doctors and nurses, obstetricians & gynaecologists, and patients who have experienced pregnancy loss to help answer questions about first trimester pregnancy loss.

Free videos, printable patient handouts, and links to additional resources

Information on:

- What to expect in the emergency department
- Bleeding in early pregnancy, threatened pregnancy loss, miscarriage, ectopic pregnancies and more
- Management options
- Supports and resources

Feedback?

We appreciate your thoughts!

Please take 2 min to complete our survey.

Varner C, Leduc L, Pasquale J, et al. *CJEM*. 2022

Patient Handouts / Downloads

For patients, emergency department (ED) physicians, family doctors, OB/GYNs, and midwives, please feel free to download our **free patient handouts** by clicking below.

English

- Patient Handout #1 - **Early Pregnancy Loss**
- Patient Handout #2 - **Bleeding during Early Pregnancy**
- Patient Handout #3 - **Pregnancy of Unknown Location**
- Patient Handout #4 - **Ectopic Pregnancy**

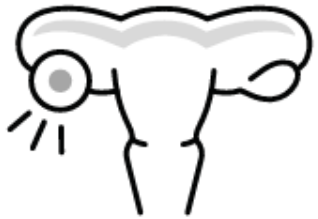
Français / French

- #1 - Perte de grossesse précoc
- #2 - Saignements en début de grossesse
- #3 - Grossesse de localisation inconnue
- #4 - Grossesse extra-utérine

ECTOPIC PREGNANCY

PregnancyED.com

What is an ectopic pregnancy?



An ectopic pregnancy is a pregnancy where the embryo implants outside of the uterus. The most common type of ectopic pregnancy is a tubal ectopic pregnancy, where the pregnancy implants in the fallopian tube. Ectopic pregnancies will not progress normally and are at risk of rupturing. Ectopic pregnancies happen in 1-2% of all pregnancies.

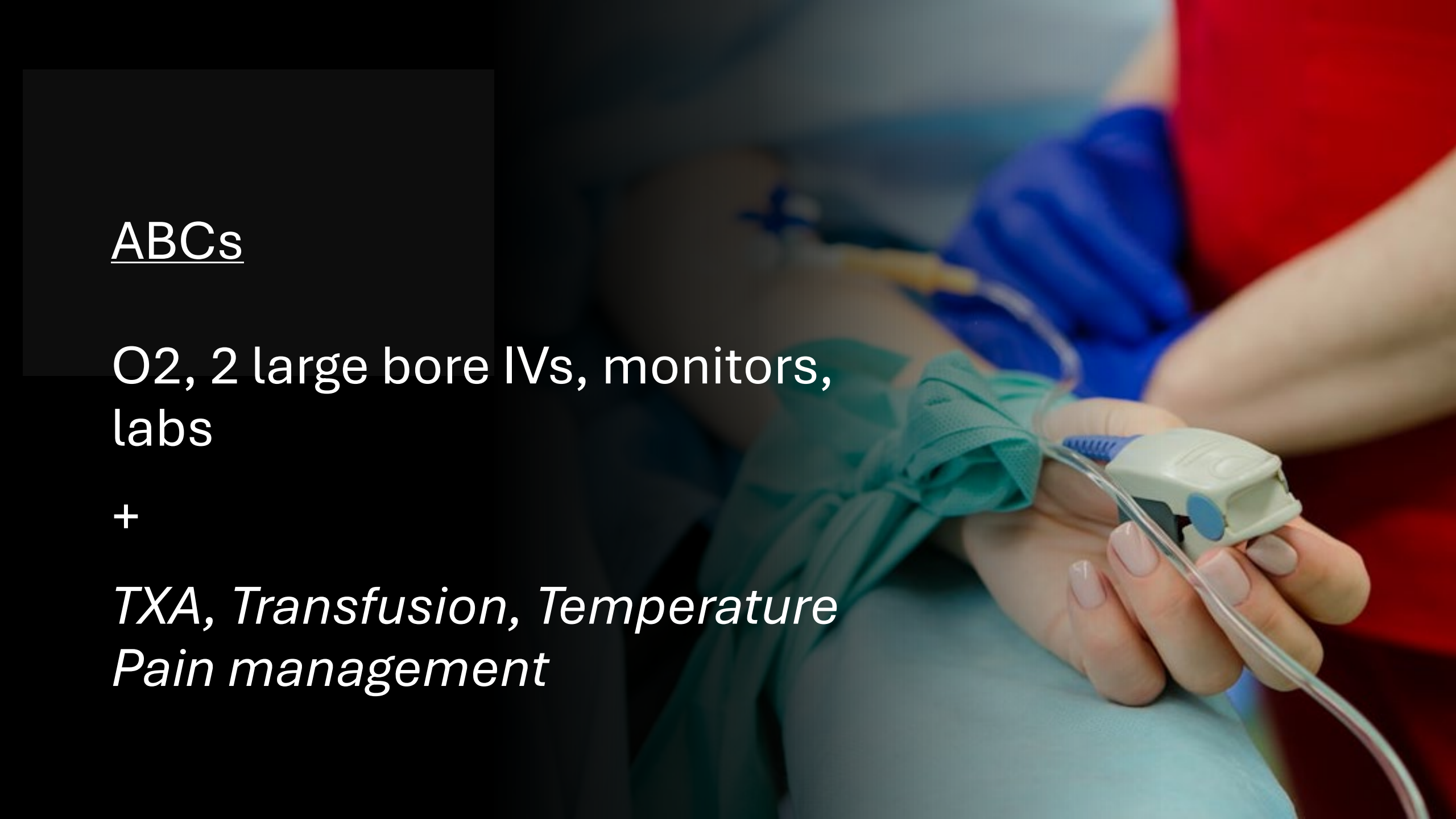
What are the signs and symptoms of an ectopic pregnancy?

- **Missed period:** At first, an ectopic pregnancy will look like a normal pregnancy. You will have a missed period, positive pregnancy test and other signs of pregnancy like nausea and breast tenderness.
- As an ectopic pregnancy grows it may cause:
  - **i. Pain:** Usually in the lower belly, pelvis or lower back.
  - **ii. Cramping:** can happen on one of both sides of the belly or lower belly
  - **iii. Vaginal Bleeding:** Vaginal bleeding may be light or heavy, constant or on and off.
- If you are experiencing any of these symptoms, you should seek medical attention and see your family physician, midwife, or obstetrician. If none of these options are available to you in the next one to three days, you should go to your local emergency department.

Patient Handout:
www.pregnancyed.com

Suspected Ruptured Ectopic Pregnancy

1. Prep like a trauma
2. Anticipate need for OR
3. Alert blood bank

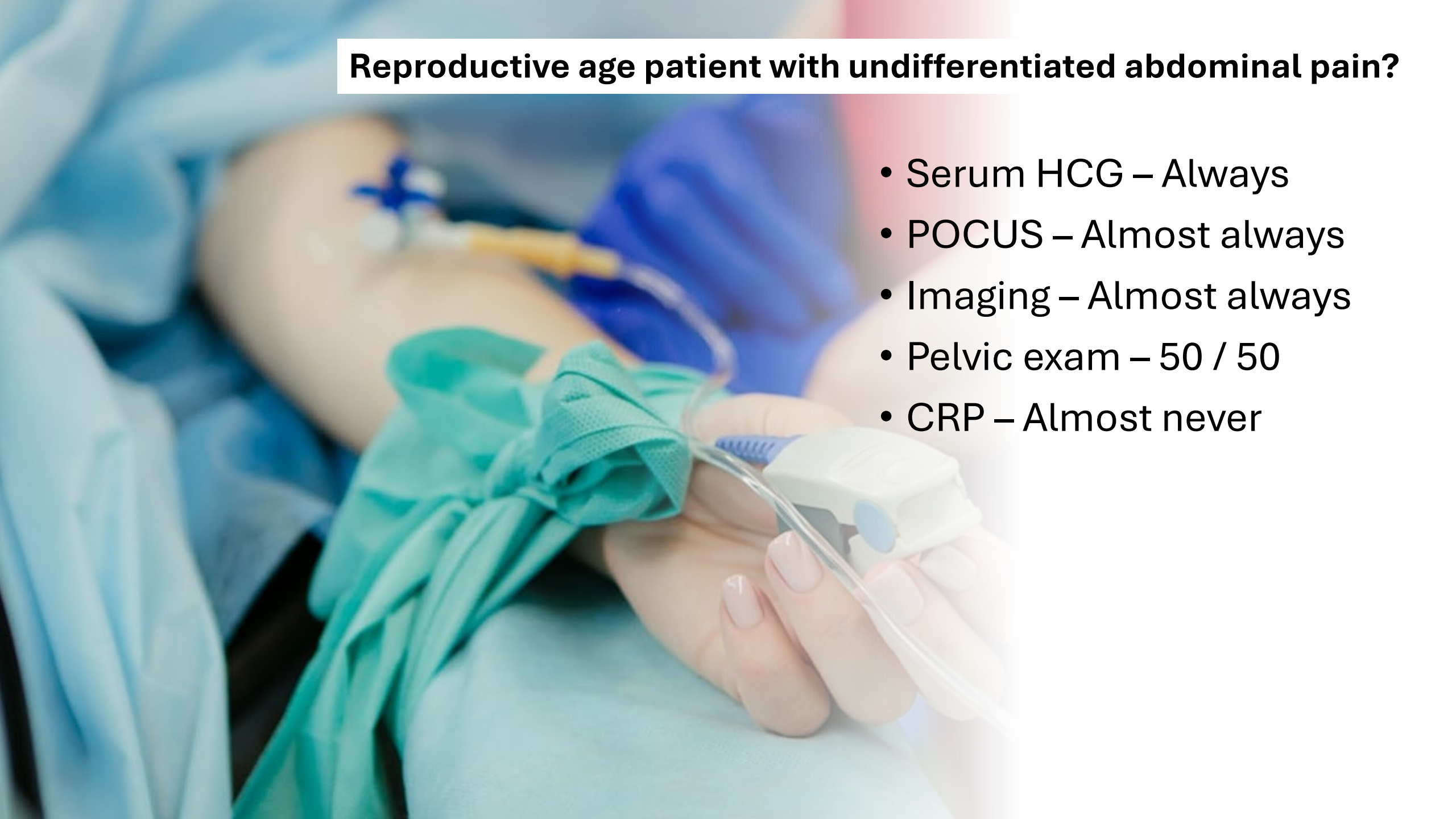


ABCs

O2, 2 large bore IVs, monitors, labs

+

TXA, Transfusion, Temperature
Pain management



Reproductive age patient with undifferentiated abdominal pain?

- Serum HCG – Always
- POCUS – Almost always
- Imaging – Almost always
- Pelvic exam – 50 / 50
- CRP – Almost never


SIUI

ABCs

2 large bore IVs, O2, Monitors, Labs

+

TXA, Transfusion, Temperature
Pain management

Hemorrhagic Shock

Hemorrhagic Shock

1. TXA
2. Transfusion
3. Temperature
4. Definitive Treatment (OR)

Hemorrhaging patients may have HR and SBP within normal limits even after losing up to 450 mL of blood.

Shock index

Detects early or hidden shock and assess hemodynamic stability.

HR / SBP = Shock Index

Normal 0.5-0.7

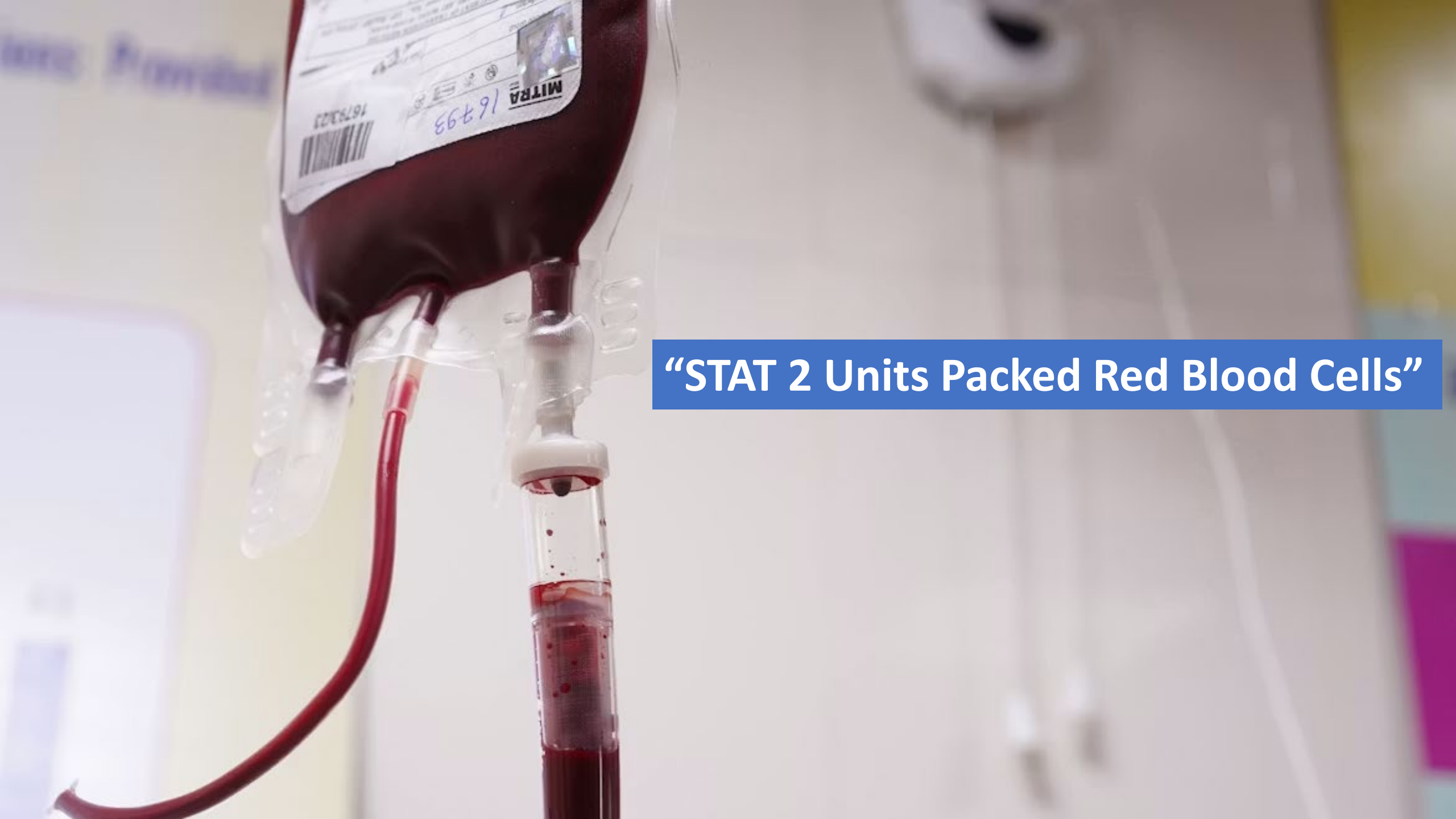
Abnormal > 0.9

Mortality > 1.0

- Safe
- Reduces mortality in trauma patients
- Reduces the risk of life-threatening postpartum bleeding.
- No evidence of increased risk of thrombosis.
- 2g for adults

TXA

Tranexamic acid for postpartum bleeding: a systematic review and individual patient data meta-analysis of randomised controlled trials. *The Lancet.* Oct 2024.



“STAT 2 Units Packed Red Blood Cells”

Massive Hemorrhage Protocol

- Massive Hemorrhage Protocol (MHP) = a protocolized response to a massively bleeding patient (not all patients will end up receiving a massive transfusion)

Shock Index triggers for MHP activation

Heart Rate ÷ Systolic > 1.4 → MHP

- Do not activate the MHP to get uncrossmatched blood
- Just call blood bank for 2-4 units of uncrossmatched blood in a cooler
- The MHP is just for patients who will need at least 6 units of RBC and other components (plasma, platelets, fibrinogen concentrate/cryoprecipitate)

Callum JL, et al. CMAJ Open. 2019 Sep 3;7(3):E546-E561

Goals of a massive hemorrhage protocol

- Activated promptly
- Right patient – not all bleeding patients need an MHP activation
- Activated through standardized communication process with distinct terminology
- Team promptly assembled and a team lead is designated
- First RBC spiked within 15 minutes
- Tranexamic acid given within 60 minutes (excluding gastrointestinal bleeds)
- Blood work at activation and every 60 minutes or every 4 RBCs
- Transfusion to target values, with 2:1 ratio until results available
- Avoid hypothermia
- Terminate when patient meets termination criteria

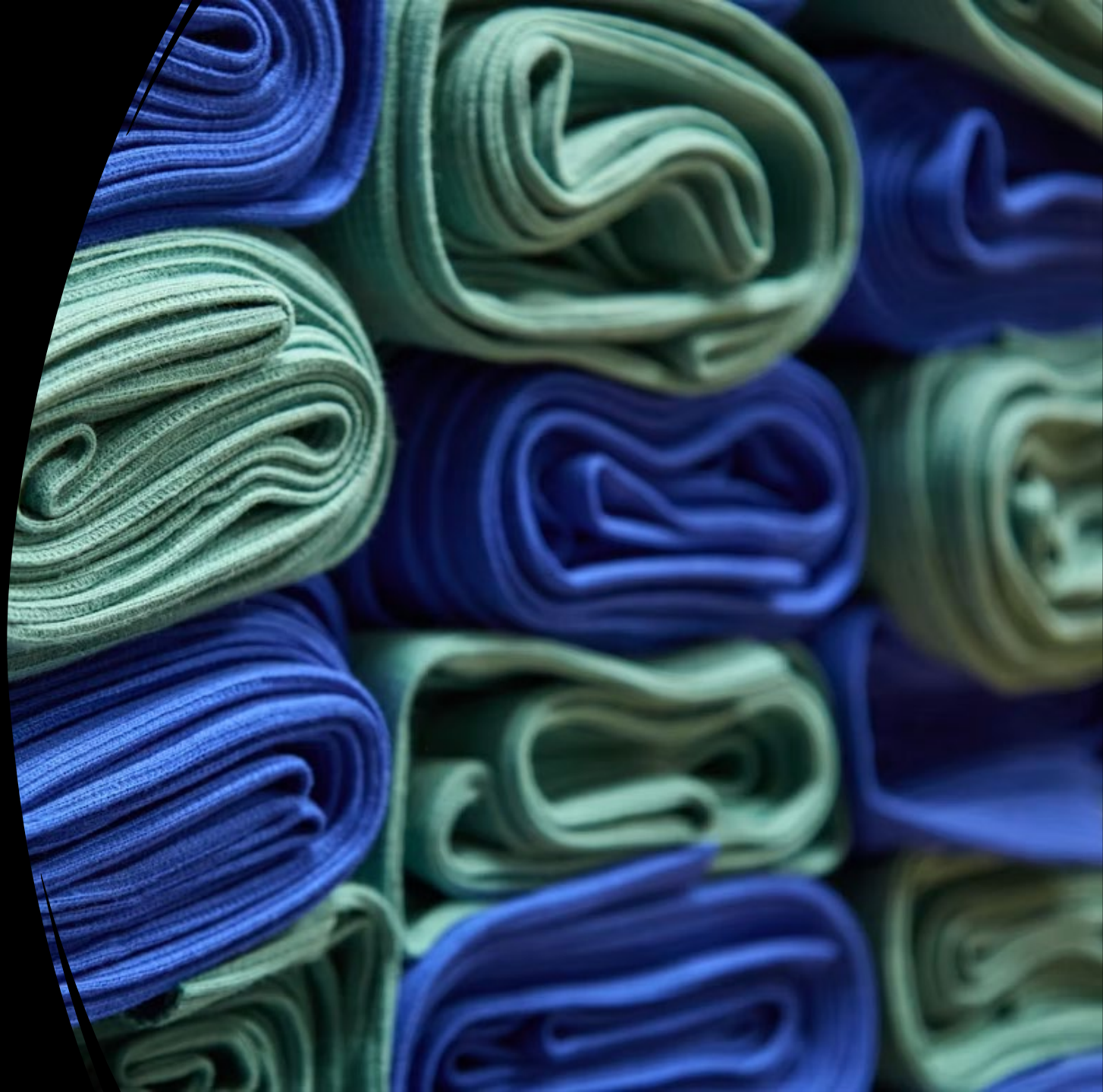
Source: Callum J. Massive Hemorrhage Protocols. https://profedu.blood.ca/

Labs if activating MHP:

- Baseline:
  - **BLOOD GROUP AND SCREEN**
  - CBC, INR, PTT, fibrinogen
  - Electrolytes, ionized Ca, lactate
- Hourly or q4 units RBC:
  - CBC, INR, fibrinogen (no need to do hourly PTT if baseline concordant with INR)
  - K+, ionized Ca++ for monitoring for transfusion toxicity and lactate
- Ensure your lab calls back ALL hematology results and critical chemistry results

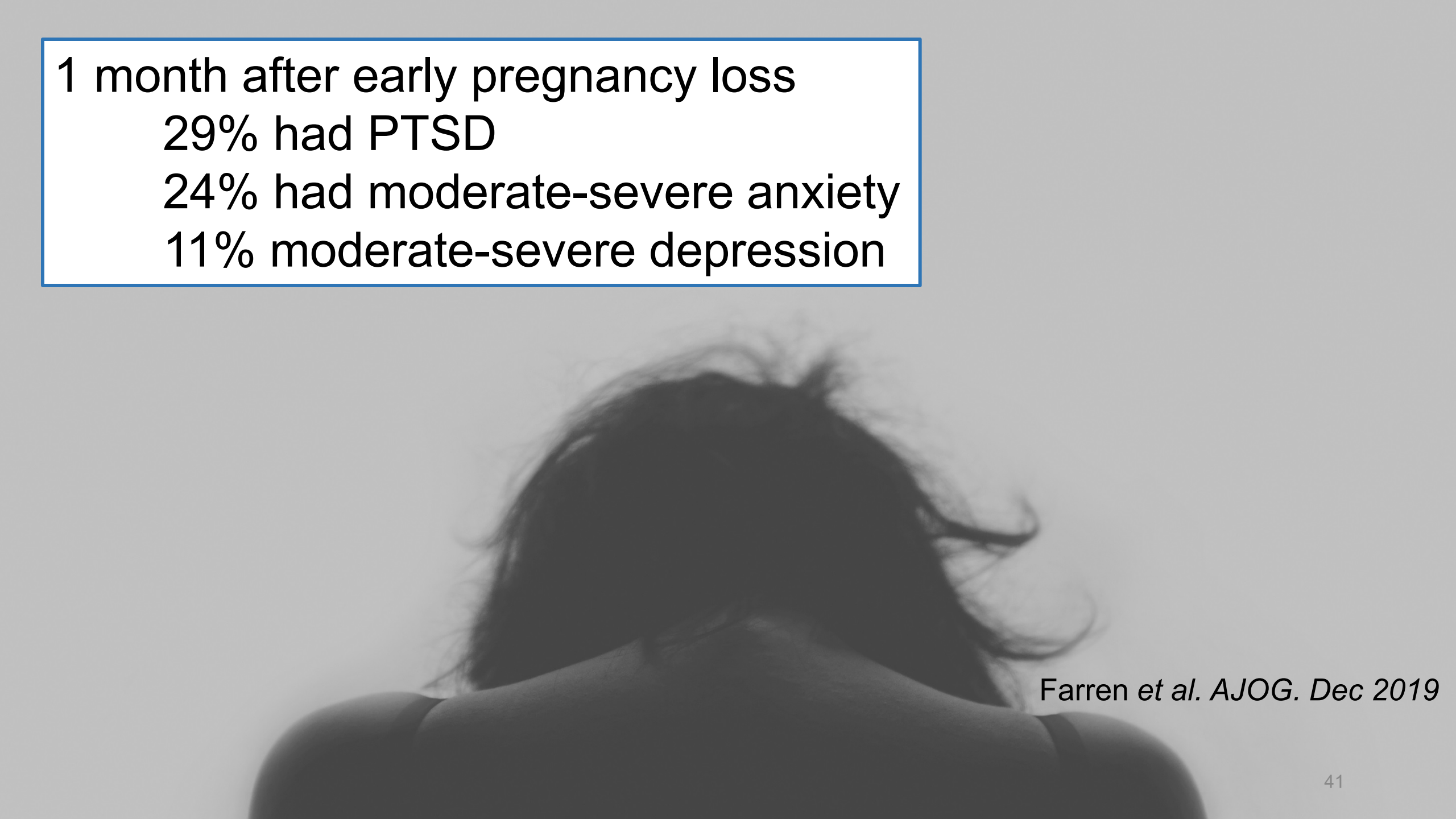
Avoid hypothermia

- Keep temperature over 36°C
- Use blood warmer for all fluids
- Use active warming blankets
- Monitor temperature every 30 minutes



1 month after early pregnancy loss

- 29% had PTSD
- 24% had moderate-severe anxiety
- 11% moderate-severe depression



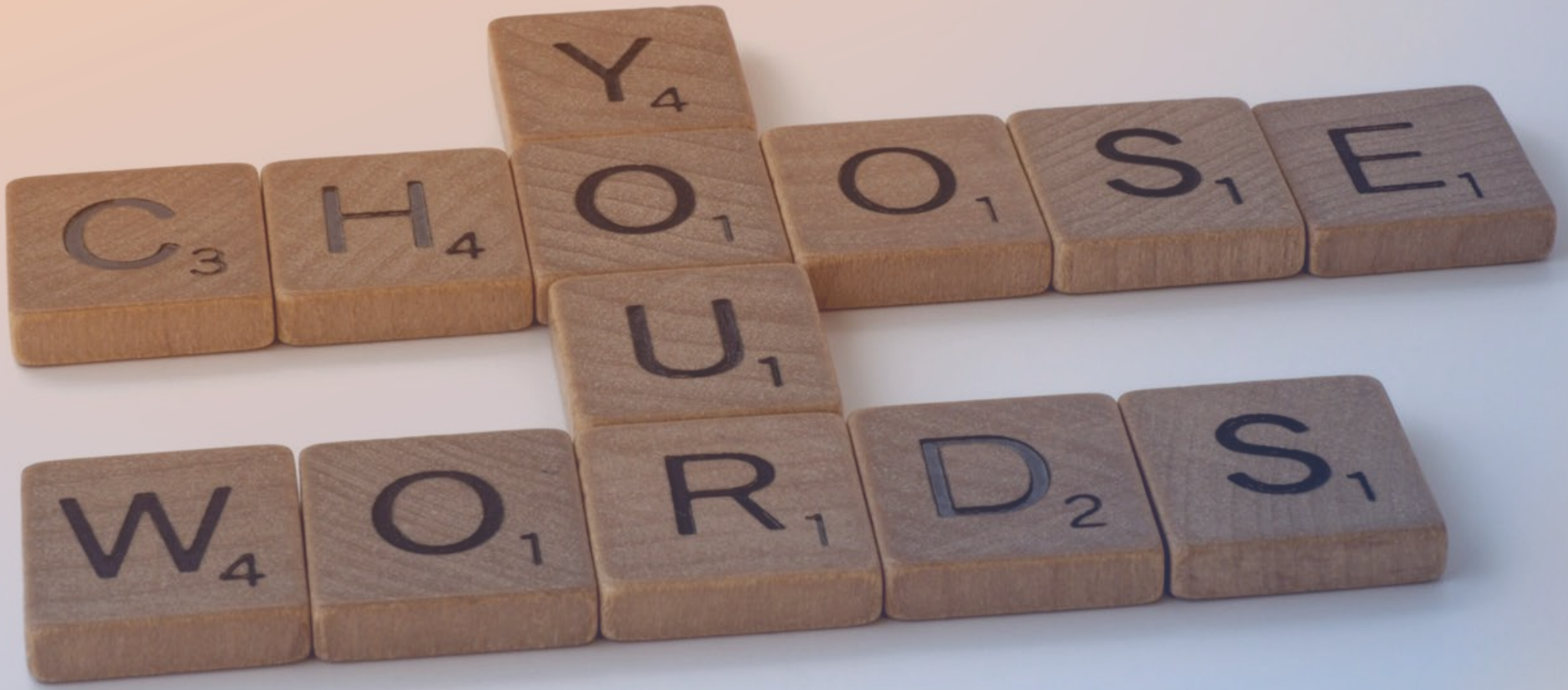
Farren *et al. AJOG. Dec 2019*

L – This is a **loss** and not your fault

O

S

S



“Miscarriage is common.”

- **Patient-preferred language**
  - Pregnancy tissue
  - Spontaneous miscarriage or loss
- **Follow the patient’s lead**
- **Misunderstood medical terms**
  - Abortion
  - Specimen, biomedical waste, products of conception


Thank you