Multidisciplinary Placenta Accreta Care Team and Team Training

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Professor, Maternal & Fetal Medicine
Director, Placenta Accreta Spectrum Program

utmb Health

DISCLOSURES

- Co-PI: Molecular and Vascular MRI of Placenta Accreta *Eunice Kennedy Shriver* National Institute of Child Health and Human Development R01 Grant number: 1R01HD094347-05

- Education & Outreach Board Member, IS-PAS

- Treasurer, Pan-American Society for Placenta Accreta Spectrum

OBJECTIVES

- Define multidisciplinary roles from screening to team-based management that impact patient care
- Discuss the benefits and challenges with developing & maintaining a multidisciplinary team
- Utilize available algorithms to develop a management plan for anticipated and unanticipated PAS cases

Who makes up the team?

Center of excellence for placenta accreta

Robert M. Silver, MD; Karin A. Fox, MD; John R. Barton, MD; Alfred Z. Abuhamad, MD; Hyagriv Simhan, MD; C. Kevin Huls, MD; Michael A. Belfort, MD; Jason D. Wright, MD

TABLE 1

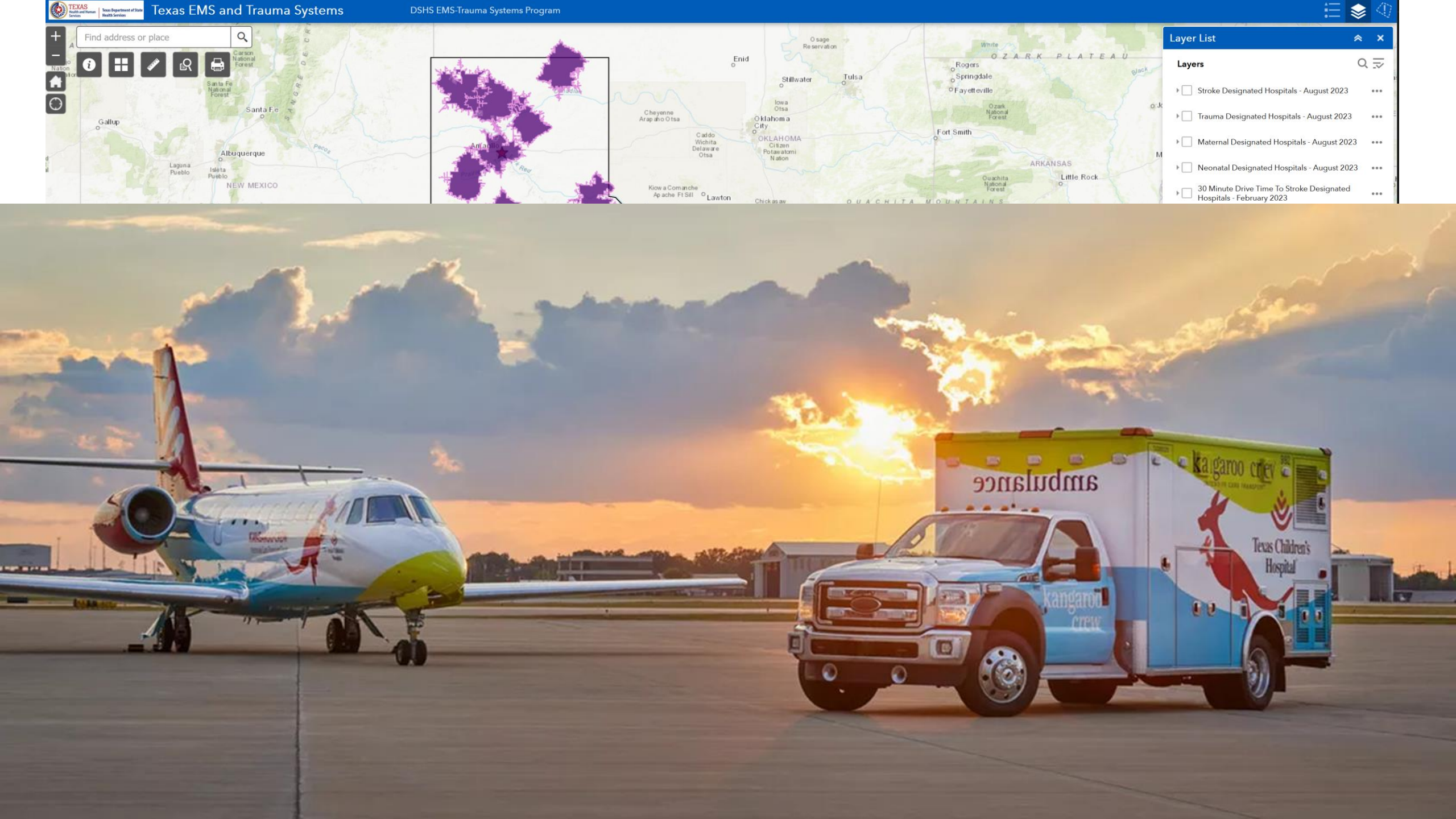
Suggested criteria for accreta center of excellence

1. Multidisciplinary team
   a. Experienced maternal-fetal medicine physician or obstetrician
   b. Imaging experts (ultrasound)
   c. Pelvic surgeon (ie, gynecologic oncology or urogynecology)
   d. Anesthesiologist (ie, obstetric or cardiac anesthesia)
   e. Urologist
   f. Trauma or general surgeon
   g. Interventional radiologist
   h. Neonatologist
2. Intensive care unit and facilities
   a. Interventional radiology
   b. Surgical or medical intensive care unit
      i. 24-h availability of intensive care specialists
   c. Neonatal intensive care unit
      i. Gestational age appropriate for neonate
3. Blood services
   a. Massive transfusion capabilities
   b. Cell saver and perfusionists
   c. Experience and access to alternative blood products
   d. Guidance of transfusion medicine specialists or blood bank pathologists

Silver. Placenta accreta: center of excellence. Am J Obstet Gynecol 2014.

"None of us, including me, ever do great things. But we can all do small things, with great love, and together we can do something wonderful."

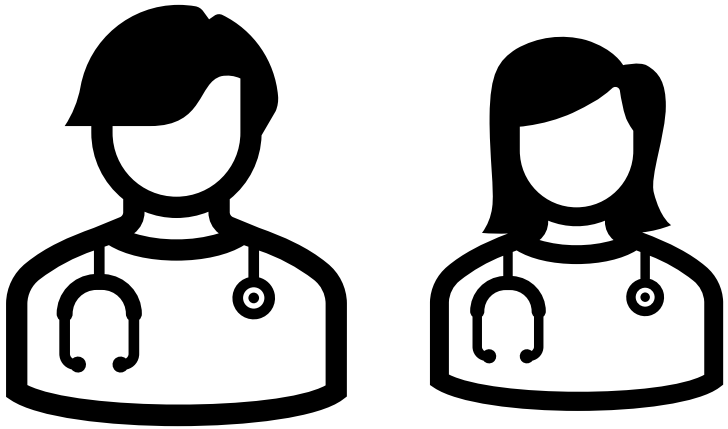
- Mother Theresa


Texas EMS and Trauma Systems
DSHS EMS-Trauma Systems Program
Find address or place
Layer List
Layers
Stroke Designated Hospitals - August 2023
Trauma Designated Hospitals - August 2023
Maternal Designated Hospitals - August 2023
Neonatal Designated Hospitals - August 2023
30 Minute Drive Time To Stroke Designated Hospitals - February 2023
Enid
Stillwater
Tulsa
Rogers
Springdale
Fayetteville
Fort Smith
Little Rock
Oklahoma City
Lawton
Albuquerque
Santa Fe
Gallup
NEW MEXICO
ARKANSAS
OKLAHOMA
OZARK PLATEAU
ambulance
kangaroo crew
Texas Children's Hospital

EARLY DETECTION – CLINICAL HISTORY

“The eyes see only what the mind is prepared to comprehend.”

- Henri Bergson

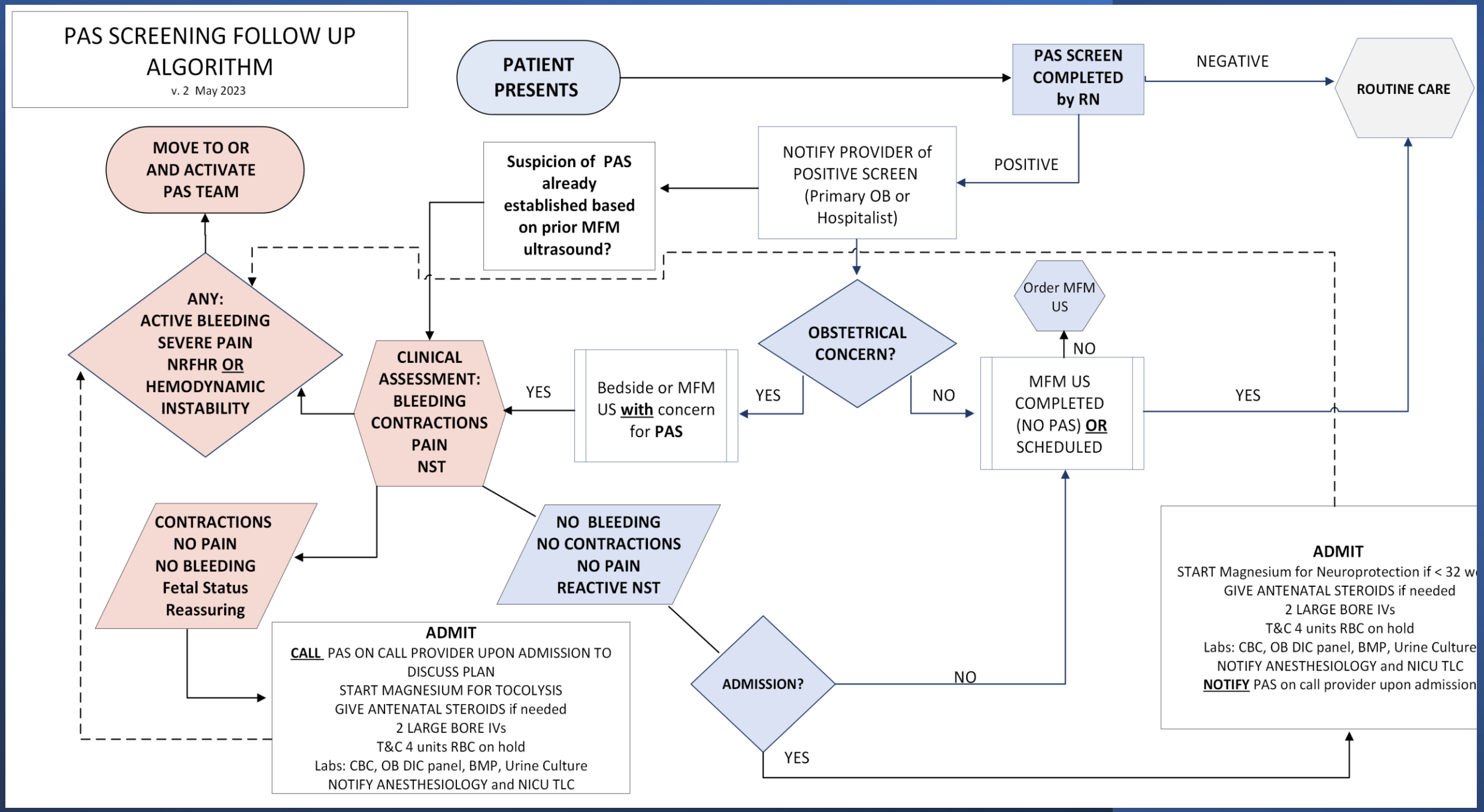


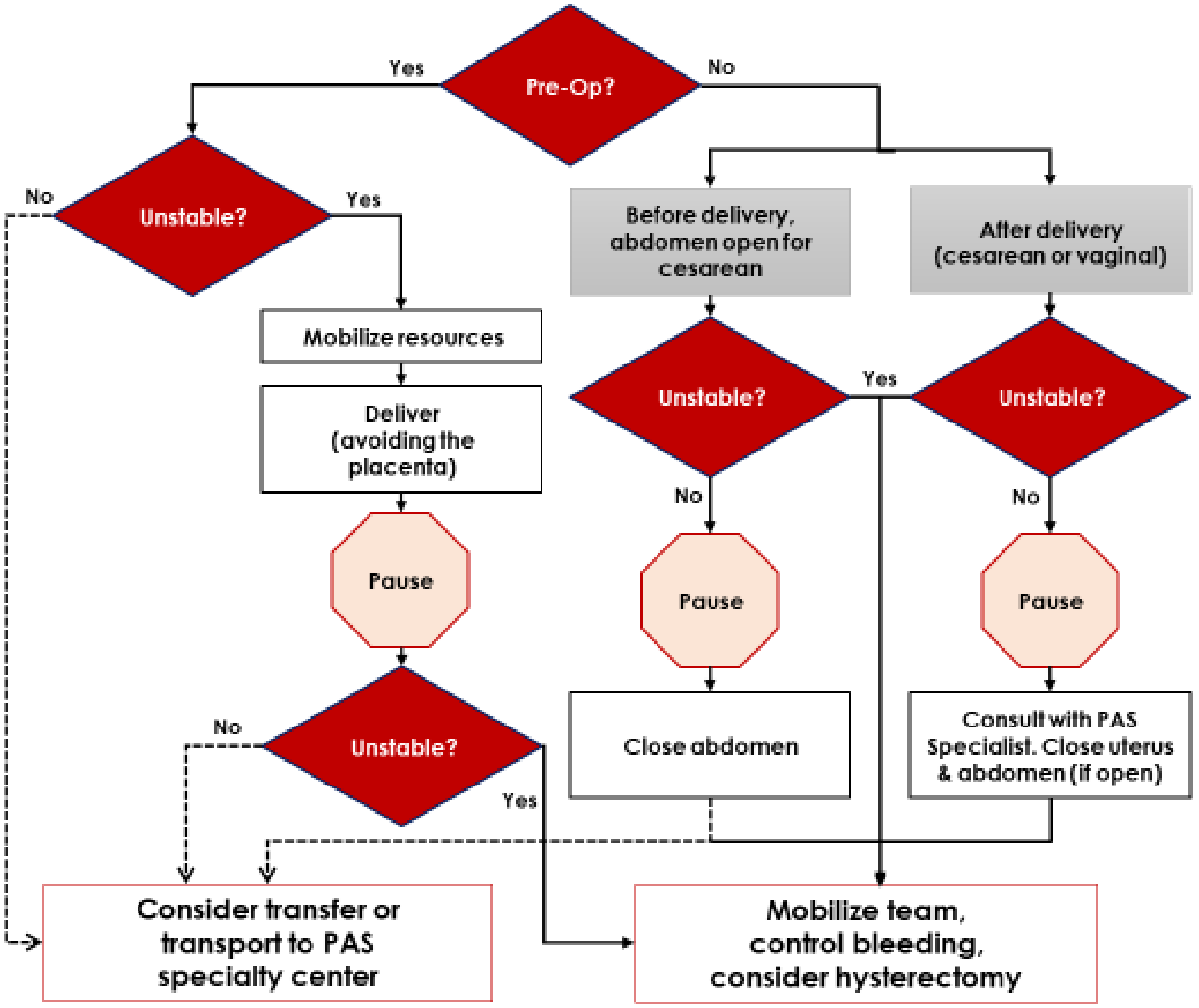
Screening - Keep it SIMPLE

1 point	1. Have you ever had a cesarean section?
1 point	2. Have you been told in this pregnancy that your placenta covers your cervix, which is referred to as a placenta previa?
2 points	3. Have you been told in this pregnancy that there is a concern your placenta is stuck to the lining of your uterus, which is referred to as a placenta accreta spectrum disorder?

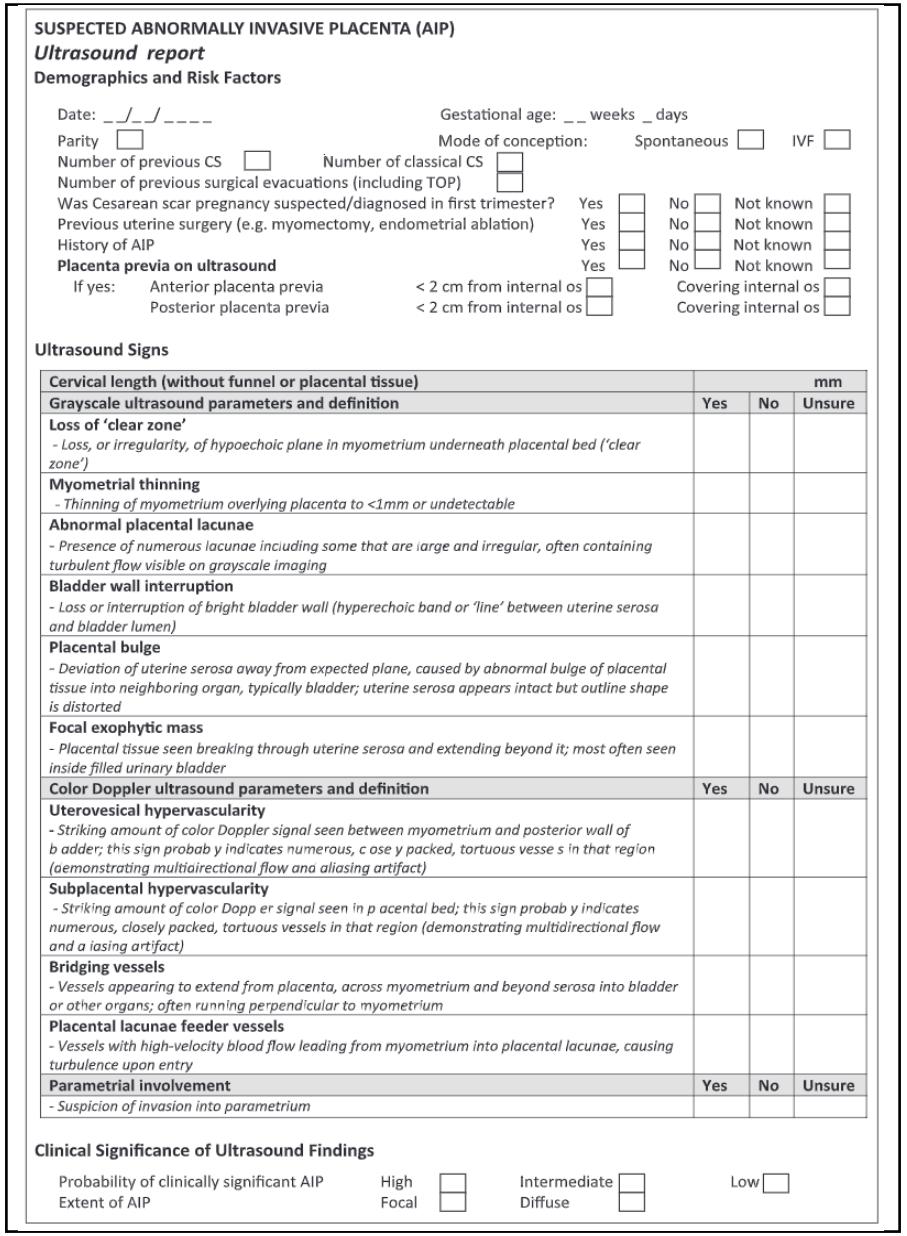
PAS SCREENING FOLLOW UP ALGORITHM

v. 2 May 2023




Pre-Op?
Yes
No
Unstable?
No
Yes
Mobilize resources
Deliver (avoiding the placenta)
Pause
Unstable?
No
Yes
Consider transfer or transport to PAS specialty center
Before delivery, abdomen open for cesarean
After delivery (cesarean or vaginal)
Unstable?
Yes
Unstable?
No
Pause
Close abdomen
Unstable?
No
Pause
Consult with PAS Specialist. Close uterus & abdomen (if open)
Mobilize team, control bleeding, consider hysterectomy

Standardization- Imaging Checklists



SUSPECTED ABNORMALLY INVASIVE PLACENTA (AIP)

Ultrasound report

Demographics and Risk Factors

Date: _ _/_ _/ _ _ _ _ Gestational age: _ _ weeks _ days

Parity ☐ Mode of conception: Spontaneous ☐ IVF ☐

Number of previous CS ☐ Number of classical CS ☐

Number of previous surgical evacuations (including TOP) ☐

Was Cesarean scar pregnancy suspected/diagnosed in first trimester?	Yes ☐	No ☐	Not known ☐
Previous uterine surgery (e.g. myomectomy, endometrial ablation)	Yes ☐	No ☐	Not known ☐
History of AIP	Yes ☐	No ☐	Not known ☐
Placenta previa on ultrasound	Yes ☐	No ☐	Not known ☐

If yes: Anterior placenta previa < 2 cm from internal os ☐ Covering internal os ☐

Posterior placenta previa < 2 cm from internal os ☐ Covering internal os ☐

Ultrasound Signs

Cervical length (without funnel or placental tissue)			**mm**
Grayscale ultrasound parameters and definition	**Yes**	**No**	**Unsure**
Loss of 'clear zone' *- Loss, or irregularity, of hypoechoic plane in myometrium underneath placental bed ('clear zone')*			
Myometrial thinning *- Thinning of myometrium overlying placenta to <1mm or undetectable*			
Abnormal placental lacunae *- Presence of numerous lacunae including some that are large and irregular, often containing turbulent flow visible on grayscale imaging*			
Bladder wall interruption *- Loss or interruption of bright bladder wall (hyperechoic band or 'line' between uterine serosa and bladder lumen)*			
Placental bulge *- Deviation of uterine serosa away from expected plane, caused by abnormal bulge of placental tissue into neighboring organ, typically bladder; uterine serosa appears intact but outline shape is distorted*			
Focal exophytic mass *- Placental tissue seen breaking through uterine serosa and extending beyond it; most often seen inside filled urinary bladder*			
Color Doppler ultrasound parameters and definition	**Yes**	**No**	**Unsure**
Uterovesical hypervascularity *- Striking amount of color Doppler signal seen between myometrium and posterior wall of bladder; this sign probably indicates numerous, closely packed, tortuous vessels in that region (demonstrating multidirectional flow and aliasing artifact)*			
Subplacental hypervascularity *- Striking amount of color Doppler signal seen in placental bed; this sign probably indicates numerous, closely packed, tortuous vessels in that region (demonstrating multidirectional flow and aliasing artifact)*			
Bridging vessels *- Vessels appearing to extend from placenta, across myometrium and beyond serosa into bladder or other organs; often running perpendicular to myometrium*			
Placental lacunae feeder vessels *- Vessels with high-velocity blood flow leading from myometrium into placental lacunae, causing turbulence upon entry*			
Parametrial involvement	**Yes**	**No**	**Unsure**
- Suspicion of invasion into parametrium			

Clinical Significance of Ultrasound Findings

Probability of clinically significant AIP High ☐ Intermediate ☐ Low ☐

Extent of AIP Focal ☐ Diffuse ☐

Diagnostic Checklist(s)

Clinical Classification

Transparency in reporting & publication

Pathology Definitions

Alfirevic Z, et al; Ad-hoc International AIP Expert Group. Pro forma for ultrasound reporting in suspected
abnormally invasive placenta (AIP): an international consensus. Ultrasound ObstetGynecol. 2016 Mar;47(3):276-8

STANDARDIZATION/CHECKLISTS – Preoperative

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Ultrasound Obstet Gynecol. 2016;47: 276 – 278

Patient Sticker Date Initiated

Antepartum and BPR Pre-Surgical Checklist

Nursing checklist : preop

Consults	**Consents Signed and Witness!**	**Notes**
☐ MFM _____	☐ Cesarean Section	
☐ GYN Oncologist _____	☐ Hysterectomy	
☐ Urology _____	☐ Cystoscopy with Bilateral Stent Placement	
☐ Anesthesiology	☐ Anesthesia: contains Epidural/Spinal/General	
☐ Intensive Care	☐ Arterial Line	
☐ Interventional Radiology	☐ Central Line	

Laboratory

Hemoglobin _____Hematocrit ____ date/time_____

☐ Prenatal Labs entered in EPIC: any missing data addressed: _____

☐ Type and Cross within last 72 hours (date/time last specimen_____)

☐ Other:

Blood Bank Orders entered: _____ (date) IV status: size_____ date inserted _____

☐ 4 Units PRBCs and FFP to OR

Nursing checklist: Safehand off to BPR

☐ Patient Allergies band in place: _____/ID Band in place_____

☐ Admission Navigator complete

☐ Newborn identification confirmed Pediatrician and ID forms to OR

☐ Fetal status reviewed

☐ VTE Prophylaxis: SCDs on prior to OR

☐ Epic Pre Op Checklist

Medications

☐ Pre-op Anesthesia: Bicitra on call to OR

☐ Antibiotic to OR

☐ **Pre-Brief Completed**

[Type text] [Type text] V2 August 20

Fox. Baylor College of Medicine/TCH Nursing Checklist

MEDICAL ALERT

(See reverse side of bracelet)

PREGNANT-MOTHER HAS PLACENTA ACCRETA/PERCRETA!

Emergency: TEXAS CHILDREN'S HOSPITAL,
Pavilion for Women; 6651 Main St.
Houston, TX
Call 832-826-7500, option 2, option 2

Suspected Accreta Coordination Checklist

Clinical Information:

# Prior cesarean deliveries	1
Other uterine surgeries	0
Iron supplementation/ route/dose/dates	Oral- started 7/25/16
Bleeding during pregnancy ?	1st trimester
Darbepotin in pregnancy	N

Labs/Dates

	Date	Value
Blood type/antibody screen		A Pos/ IAT Neg
Last Hgb/Hct		
Last PLT		
Last Coags		
Last Cr		

Basis of concern:

Preoperative diagnosis (Degree of MAP & likelihood	Moderate. Suspect increta	
Placental location	Complete previa	
Relevant U/S findings	Loss of hypoechoic retroplacental zone	Y
	Vascular lacunae	Few, irregular
	Vessels/tissue bridging uterine-placental margin	Y
	Retroplacental myometrial thickness	Focal thinning
	Coherent vessels with 3D doppler	Focal area right upper edge behind bladder and lower left lateral wall
MRI Findings (if applicable)		

Other:

Surgical Planning:

Date of planned surgery	9/13/16 @ 0730
Date of admission to WSU	9/10/16 @ 11am
Primary Surgeon	Fox
Gestational age at surgery	34.3
Steroids given/dates	
Blood products available	
IF PLACENTA DELIVERS SPONTANEOUSLY	Alternate contraception plan: Desires BTL

Pre-operative consultations/notifications

	Yes/No / Date	**Name of MD Aware/available / Contact #**
Maternal Fetal Medicine	Y	Fox
Obstetric anesthesiologist		
GYN Oncologist/Senior Surgeon		
Neonatology		
Blood bank		
Urologist		waiting for call sched to be published
General surgeon		
Vascular surgeon		
Interventional radiologist		Notified 7/29
Intensive care specialist		
At admission, notify research fellow for possible recruitment		Studies:

Adapted from:Placenta accreta: Society for Maternal -Fetal Medicine. Am J Obstet Gynecol 2010;203:430-9

Unanticipated Cases- Know Your Plan

Society for Maternal-Fetal Medicine
High-risk pregnancy experts

SMFM Checklist for Unexpected Morbidly Adherent Placenta

Intended for use when morbidly adherent placenta is first encountered at the time of labor onset or delivery, and was not diagnosed antenatally.

Diagnosis *Before* Delivery (e.g. bleeding prior to delivery):

If located at facility without accreta experience:

- ☐ Assess stability (vital signs, extent of blood loss, fetal monitoring status)
- ☐ Assess and prepare surgical help, equipment, & transfusion capability (see contact numbers below)
- ☐ Consider transport to facility with accreta experience if patient is stable
- ☐ Contact possible accepting facility

Diagnosis *at* Laparotomy:

If located at facility without accreta experience and if transport may be option:

- ☐ Assess stability (vital signs, extent of blood loss, hemodynamics, fetal status)
- ☐ Assess placental location visually and by intra-operative ultrasound
- ☐ Assess and prepare resources (surgical help, equipment, & transfusion capability; see contact numbers below)
- ☐ Assess transport capabilities (includes contact to possible accepting facility)
- ☐ Consider delaying uterine incision until resources available at facility (if maternal and fetal status permits), *or*
- ☐ Consider no uterine incision, close abdomen, & prepare for transport to referral center (if fetal and maternal status permits), *or*
- ☐ Consider delivery of fetus by fundal incision (or incision that avoids placenta if mapping is possible), closure of uterus and abdomen, & transport if stable and appropriate
- ☐ If transporting, photograph intraoperative findings for receiving facility

If proceeding to cesarean hysterectomy

- ☐ Inform patient and family of change in diagnosis and plan; obtain appropriate consent
- ☐ Anesthesia notified; consider general anesthesia
- ☐ Acceptable intravenous access in place (2 large bore IVs)
- ☐ Blood Bank notified and products requested (consider postpartum hemorrhage bundle and/or massive transfusion protocol)
- ☐ Neonatology/Pediatrics notified
- ☐ Requested equipment available in or near operating room (consider:
  - Hysterectomy surgical equipment kit
  - Cystoscopy
  - Ureteral stents
  - Red cell salvage (with perfusionist)
  - Stirrups for dorsal lithotomy
- ☐ Other relevant subspecialties notified and available (consider:
  - Maternal-Fetal Medicine
  - Gynecologic Oncology
  - Interventional Radiology
  - Urology
  - Vascular Surgery
  - Trauma/General Surgery
  - Colorectal Surgery
- ☐ Contact appropriate Intensive/Critical Care Unit
- ☐ Consider contacting pastoral/spiritual care
- ☐ If still bleeding after hysterectomy, consider abdominal packing for stabilization & transport

Emergency Contact Numbers (fill in as appropriate)

- Main OR Booking:
- Chief of Obstetrics:
- Medical Director Labor and Delivery:
- Maternal-Fetal Medicine 'on call':
- Gyn Oncology 'on call':
- Interventional Radiology 'on call:'
- Trauma or General Surgery 'on call':
- Colorectal Surgery 'on call':
- Vascular Surgery 'on call':
- Urology 'on call':
- Pediatrics/Neonatal 'on call:'
- Blood Bank or Transfusion Specialist:
- Intensive/Critical Care Unit:
- Perfusionists (Cell Saver):
- Pastoral/Spiritual Care:

https://s3.amazonaws.com/cdn.smfm.org/media/1591/unexpected.pdf

The above is intended to serve as a guideline and not intended to be a standard of care.
Care should be based on the judgment of the physician based on the individual patient's condition.

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Care should be based on the judgment of the physician based on the individual patient's condition.

TEAM APPROACH

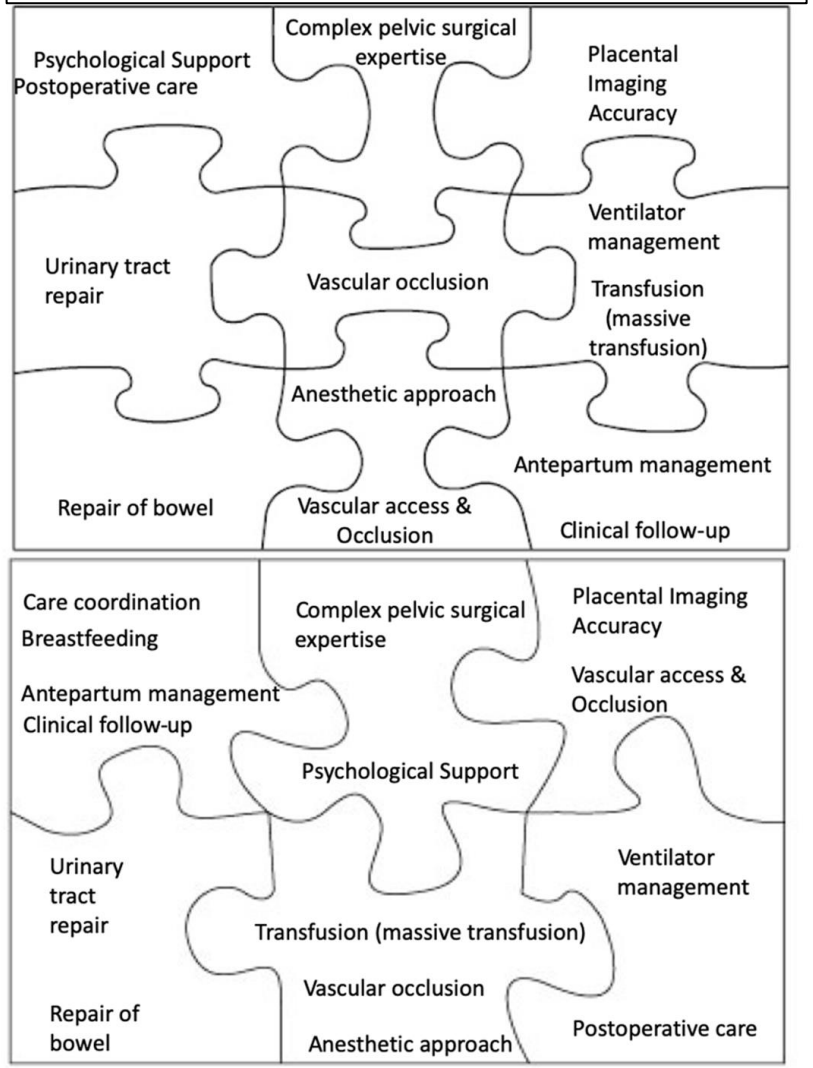
Why a team/teams?

- **Better outcomes** through shared expertise and experience
- **24/7** Coverage for emergencies (and 46% will be unscheduled)
- **Maintains competence and team dynamics**
- Provides opportunities for **training** newer team members by a dedicated group following **standard protocols and checklists**
- **Reduces variations** in care that can worsen outcomes
- **Team of teams concepts:** Resilience, empowered execution, shared consciousness, common purpose, communication, trust

General Stanley McChrystal

"We are what we repeatedly do. Excellence, then, is not an act, but a habit."

- Will Durant



Feltmate C, Easter SR, Gilner JB, Karam A, Khourry-Callado F, Fox KA. Graduate and Continuing Medical Education of Placenta Accreta Spectrum
On behalf of the Education Sub-Committee of the Pan-American Society for the Placenta Accreta Spectrum (PAS^2), In press

Maternal Morbidity in Cases of Placenta Accreta Managed by a Multidisciplinary Care Team Compared With Standard Obstetric Care

Alexandra G. Eller, MD, MPH, Michele A. Bennett, MD, Margarita Sharshiner, MD, Carol Masheter, PhD, Andrew P. Soisson, MD, Mark Dodson, MD, and Robert M. Silver, MD

VOL. 117, NO. 2, PART 1, FEBRUARY 2011 OBSTETRICS & GYNECOLOGY 331

→ **Decreased morbidity**
OR 0.22 [95% CI 0.07-0.70]

OBSTETRICS

Maternal morbidity in patients with morbidly adherent placenta treated with and without a standardized multidisciplinary approach

Alireza A. Shamshirsaz, MD; Karin A. Fox, MD; Bahram Salmanian, MD; Concepcion R. Diaz-Arrastia, MD; Wesley Lee, MD; B. Wycke Baker, MD; Jerasimos Ballas, MD; Qian Chen, MD; Teelkien R. Van Veen, MD; Pouya Javadian, MD; Haleh Sangi-Haghpeykar, PhD; Nicholas Zacharias, MD; Stephen Welty, MD; Christopher I. Cassady, MD; Amirhossein Moaddab, MD; Edwina J. Popek, DO; Shiu-ki Rocky Hui, MD; Jun Teruya, MD, DSc; Venkata Bandi, MD; Michael Coburn, MD; Thomas Cunningham, RN; Stephanie R. Martin, MD; Michael A. Belfort, MD, PhD

American Journal of Obstetrics & Gynecology FEBRUARY 2015

→ Similar EBL and rate of transfusion, **despite increasing proportion of percreta cases**

Association of peripartum management and high maternal blood loss at cesarean delivery for placenta accreta spectrum (PAS): A multinational database study
Acta Obstetricia et Gynecologica Scandinavica
Schwickert, Alexander; Beekhuizen, Heleen J.; Berthol...
Vol. 100 Issue S1, pp. 29–40, 2021.

→ Similar EBL and transfusion for accreta, increta, percreta; **reduced blood loss** with **experienced surgeon/team**, regardless of management mode (conservative or surgical)

Original Research

Outcomes of Planned Compared With Urgent Deliveries Using a Multidisciplinary Team Approach for Morbidly Adherent Placenta

Alireza A. Shamshirsaz, MD, Karin A. Fox, MD, MEd, Hadi Erfani, MD, MPH, Steven L. Clark, MD, Amir A. Shamshirsaz, MD, Ahmed A. Nassr, MD, Nathan C. Sundgren, MD, PhD, Jeffery A. Jones, MD, Matthew L. Anderson, MD, PhD, Elias Kassir, Bahram Salmanian, MD, Alexandra W. Buffie, Shiu-Ki Hui, MD, Jimmy Espinoza, MD, Lynda A. Tyer-Viola, PhD, Martha Rac, MD, Niloofar Karbasian, MD, Jerasimos Ballas, MD, Gary A. Dildy, MD, and Michael A. Belfort, MD, PhD

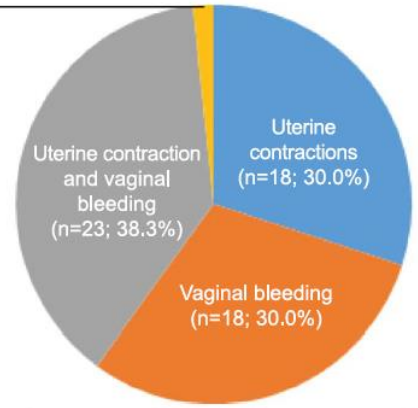
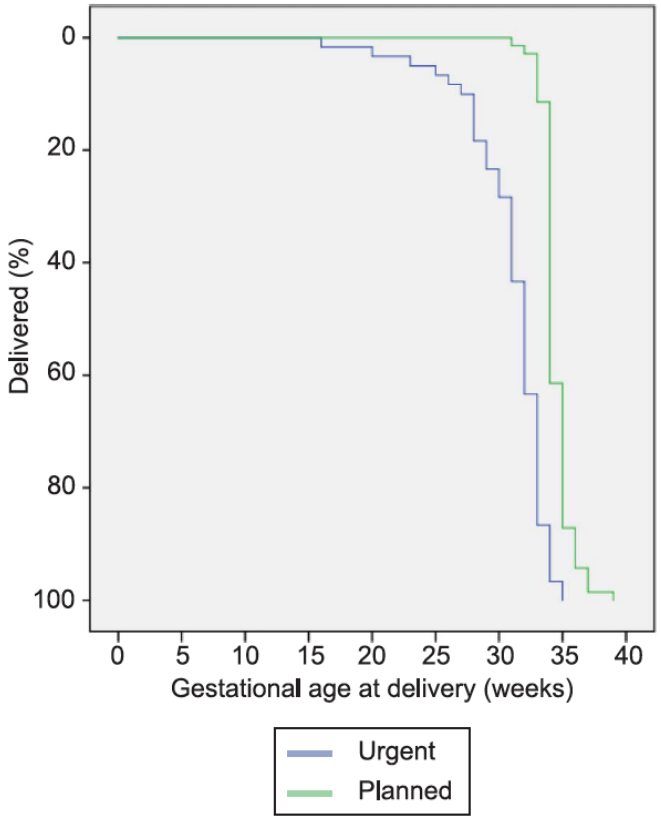


Fig. 1. Distribution of reasons for urgent cesarean hysterectomy in study participants.



- 60/130 **(46%)** women scheduled for planned delivery at 34-35 weeks had **urgent surgery**
- **Composite maternal morbidity** higher
  - 57% vs 37% - p = 0.03
- **More blood products** needed in urgent group
- **More RDS** in babies in urgent group
  - GA 32 weeks vs 34 weeks
- Logistic regression: the ***only independent predictor*** of urgent delivery was **≥2 prior CS**

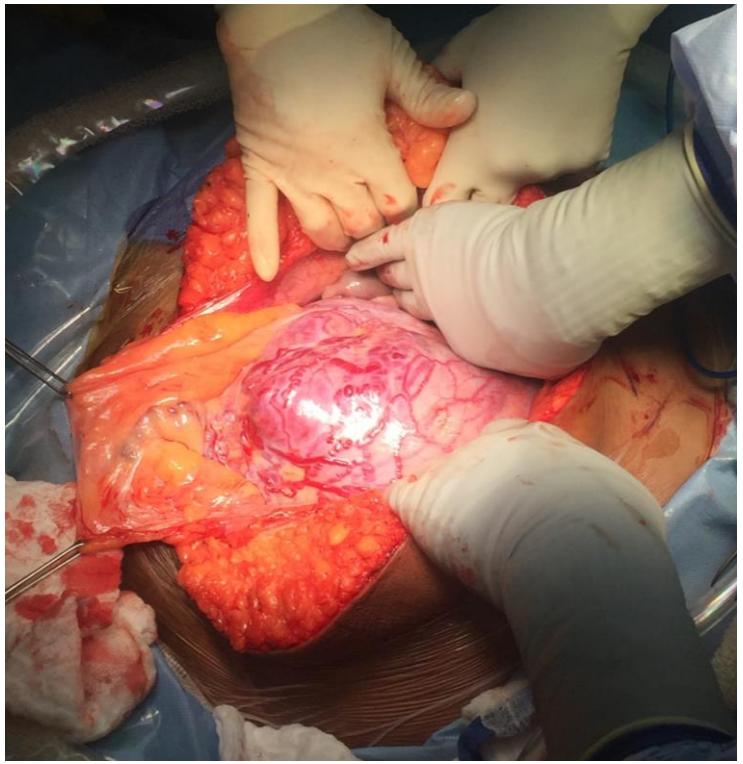
Shamshirsaz et al. Obstet Gynecol 2018;131:234-41

Baylor College of Medicine
GIVING LIFE TO POSSIBLE

Texas Children's Hospital

"We are what we repeatedly do. Excellence, then, is not an act, but a habit."

- Will Durant, Historian[1]

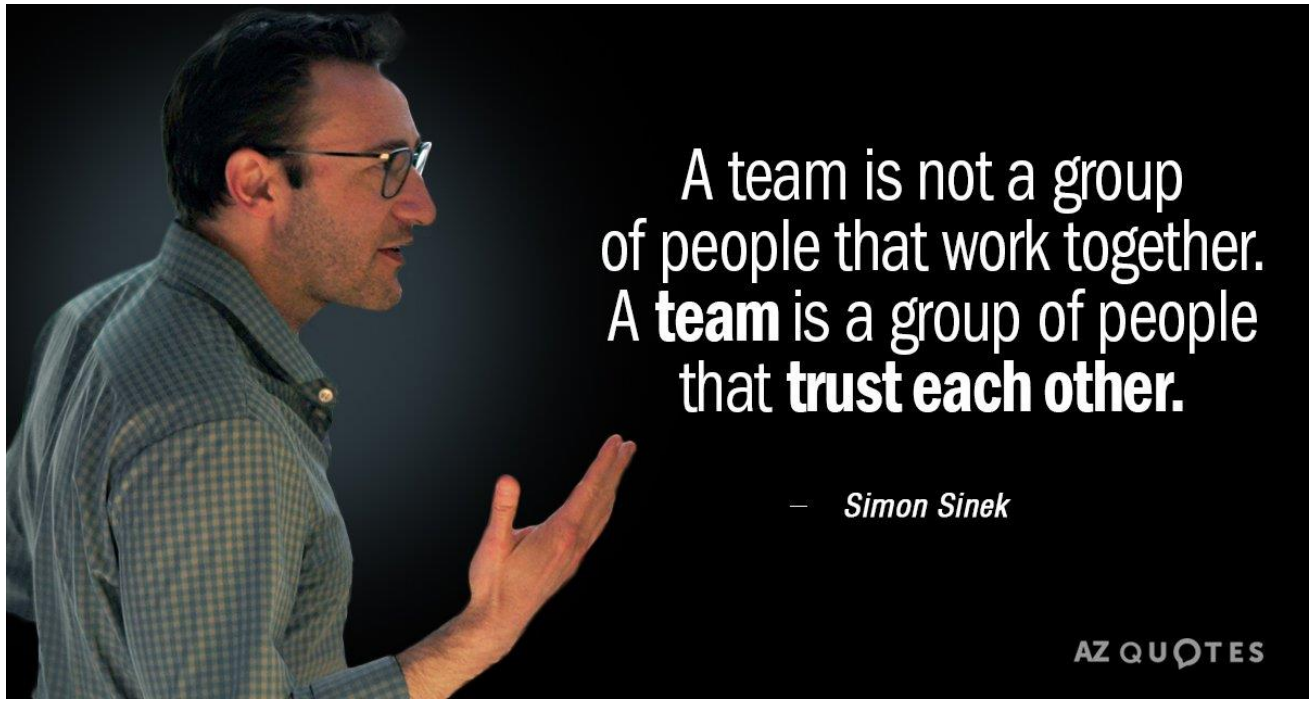


SURGICAL COMPLICATIONS[2]

	Standard	Multidisciplinary
Median EBL	2-3 L	↓ by 30 – 50%
Median RBC Units	3.5-4.5 L	↓ ~50%
Massive Transfusion	5 - 40%	↓
Bladder Injury	7 - 48%	-
Ureteral Injury	0 - 18%	-
ICU Admission	5 – 66%	↓ >50%
Bowel Injury/SBO	2 – 4%	-
VTE	4%	-
Surgical Site Infection	18 – 32%	-
Reoperation	4 – 18%	↓ >50% - 90%
Maternal Mortality	1 – 7%	-

1. Will Durant Quotes. (n.d.). BrainyQuote.com. Retrieved October 9, 2018, from BrainyQuote.com Web site: https://www.brainyquote.com/quotes/will_durant_145967
2. Allen et al. for the FIGO Placeta Accreta Diagnosis and Management Consensus Panel. FIGO Consensus Guidelines on Placenta Accreta Spectrum Disorders: Surgical Management. Intl J Gynaecol Obstet. Mar 2018.

Why a team?
Who makes up the team?
How do we make this happen?



“Teamwork makes the dream work, but a vision becomes a nightmare when the leader has a big team and a bad team.”

- John C. Maxwell

Team Dynamics

- Diversity of opinions, skills, attitudes

- Size matters
- – too small (<6)= lack of diversity, difficult accession planning
- - too big (>10) = subteams form, harder for all to be heard

- Team members able to provide input/ raise concerns without fear of reprimand
- Trust
- Open communication
- Willingness to accept conflict

- A team of “all stars” without cooperation **will be outperformed a less experienced team that functions well together**

How do we make this happen?

- Potential Barriers:
- Lack of expertise
- Conflicting schedules/Demands
- Ego- Some clinicians will feel “left out”
- Cost
- “We don’t know where to begin…”

Potential Solutions:

- Train with experts, teleconsultation
- Divide call to free up dedicated team
- Team frees others to care for more non-PAS patients
- Outweighs cost of major morbidity
- Reach out to others who have built programs for advice

“No matter how great the talent or efforts, some things just take time. You can’t produce a baby in one month by getting nine women pregnant**.”**

- Warren Buffet

Requisite Skills

Cognitive Skills

("what")

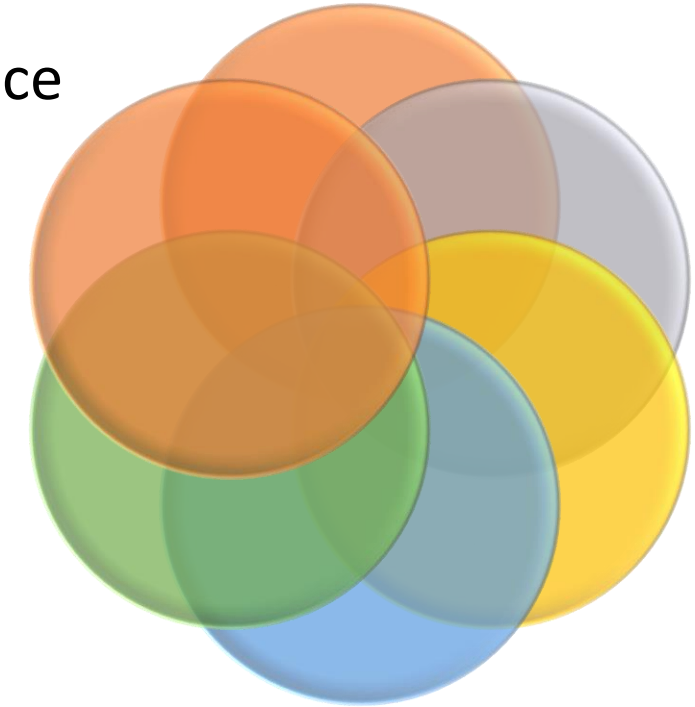
Visual-special &

Manual Dexterity

("how")

Emotional Intelligence

("who")



Focus, Attention Shifting & Risk tolerance

("where")

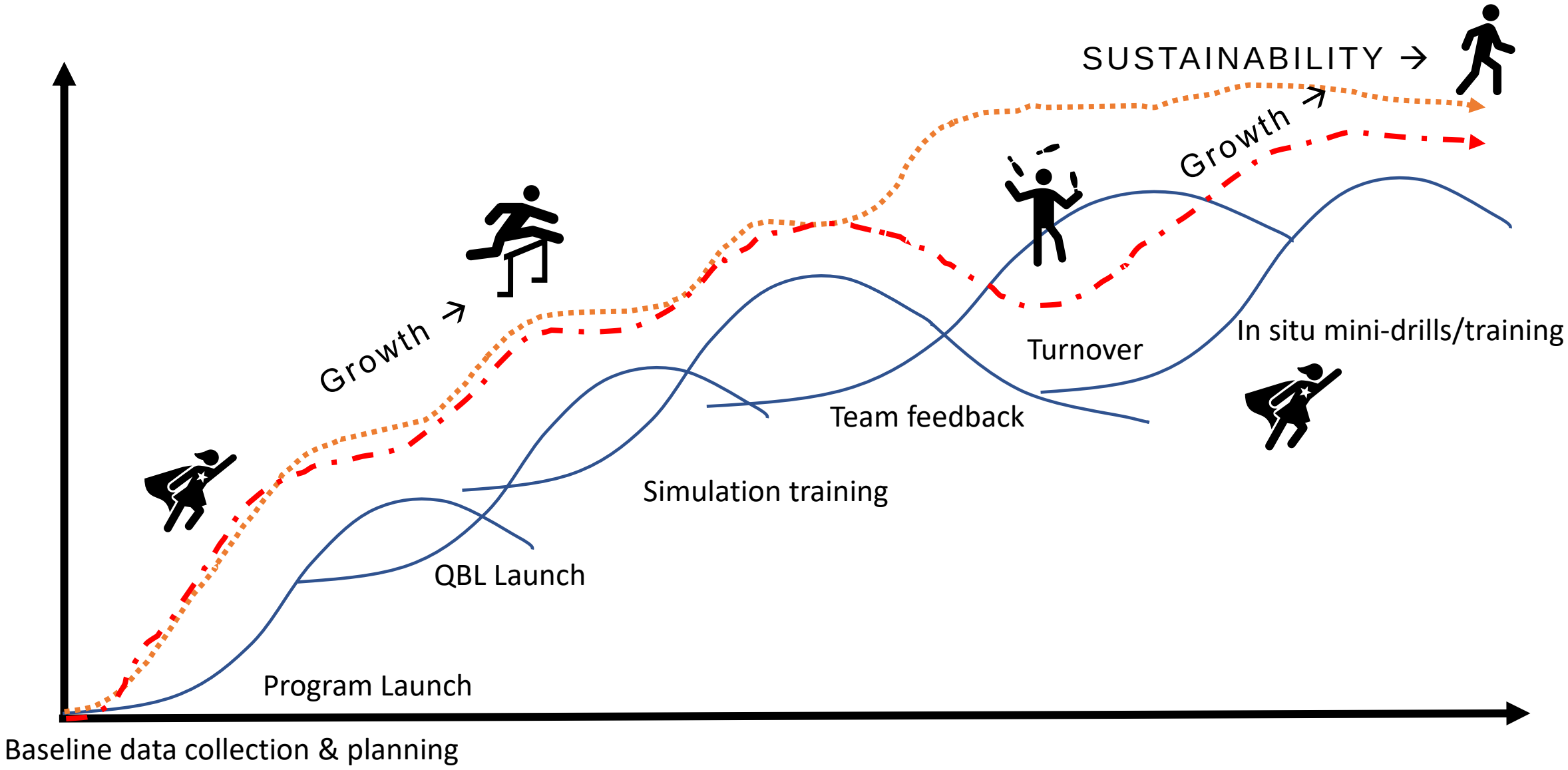
Critical Thinking & Judgement

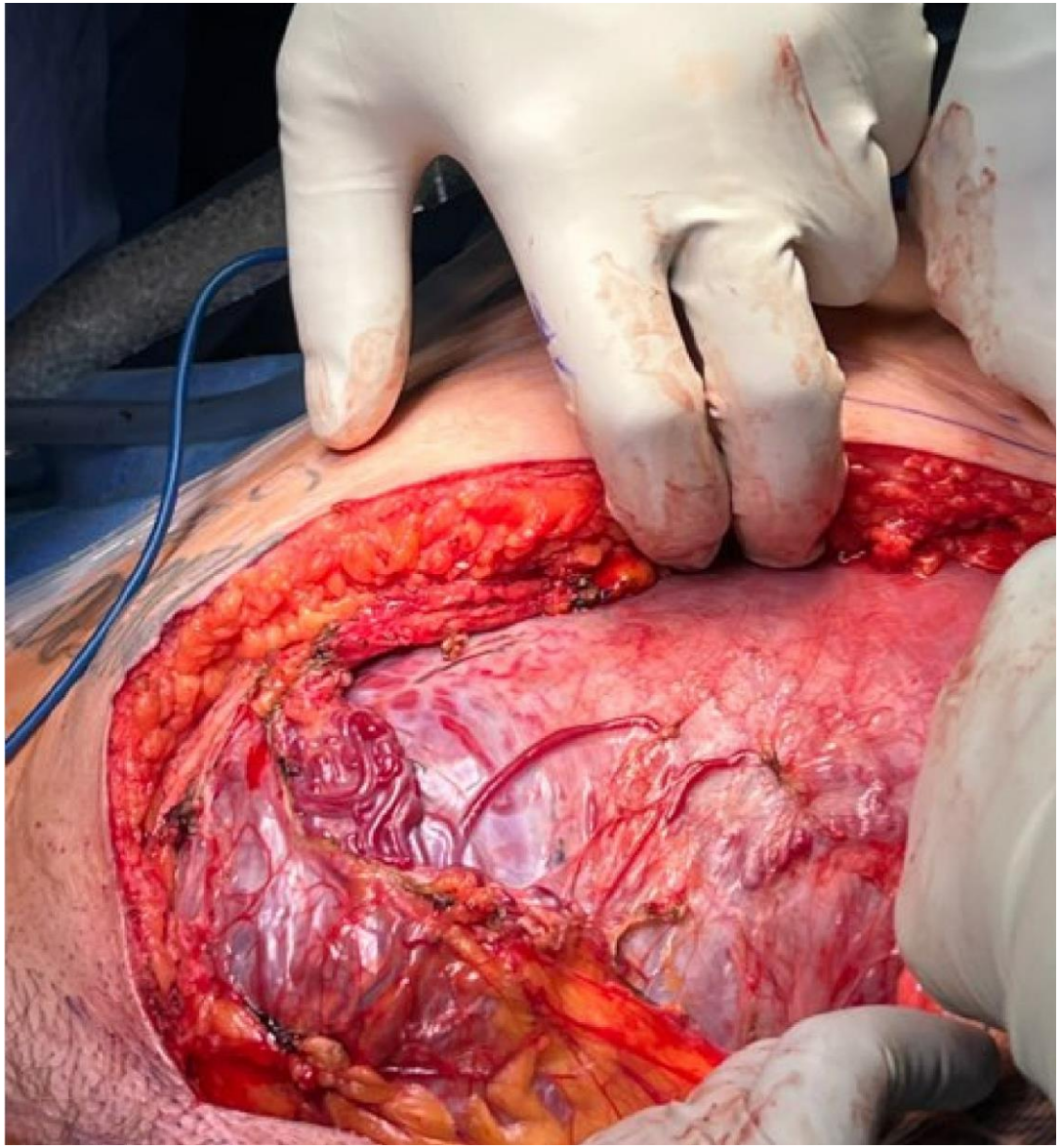
("why/when")

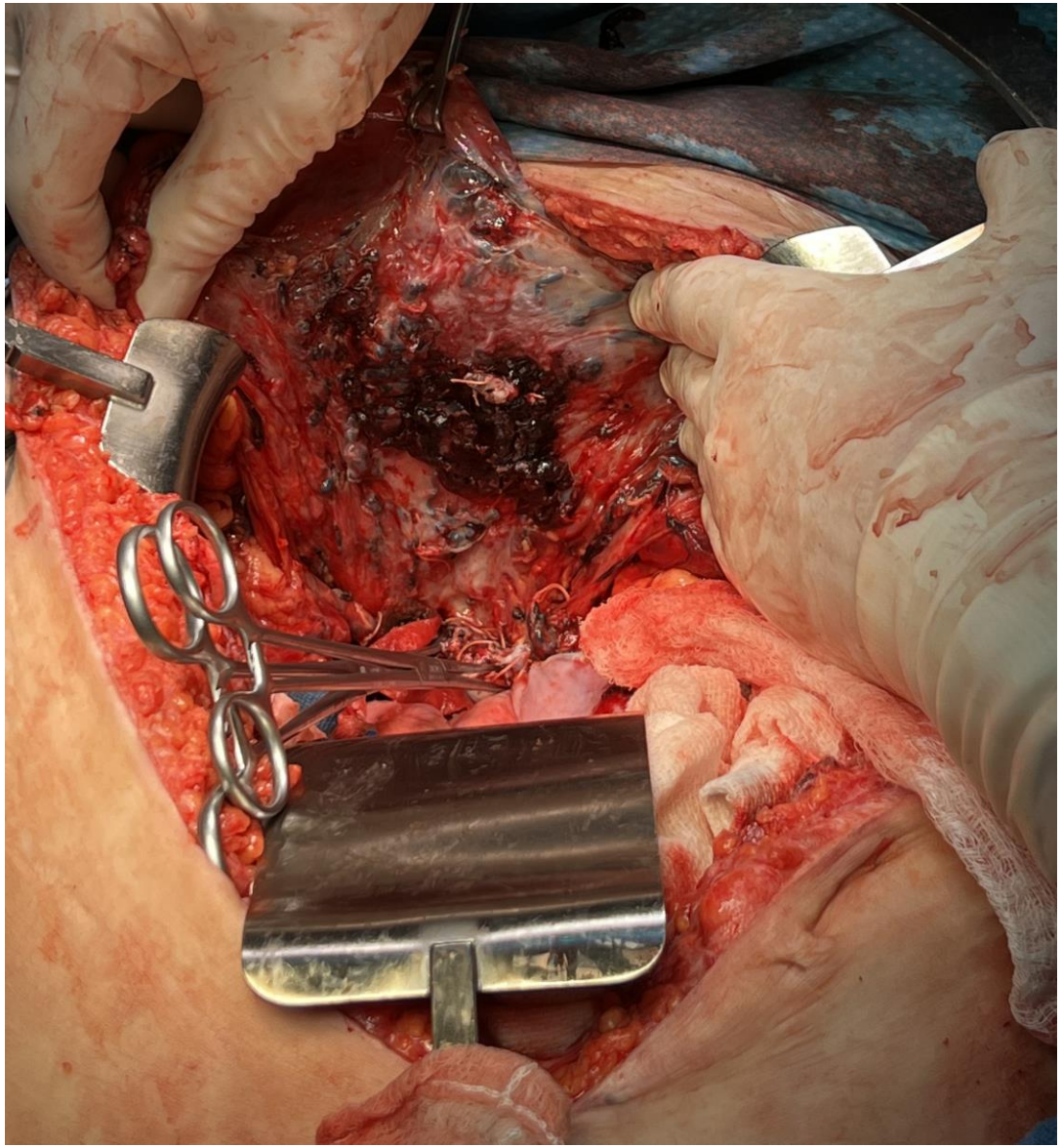
Wisdom

("experience")

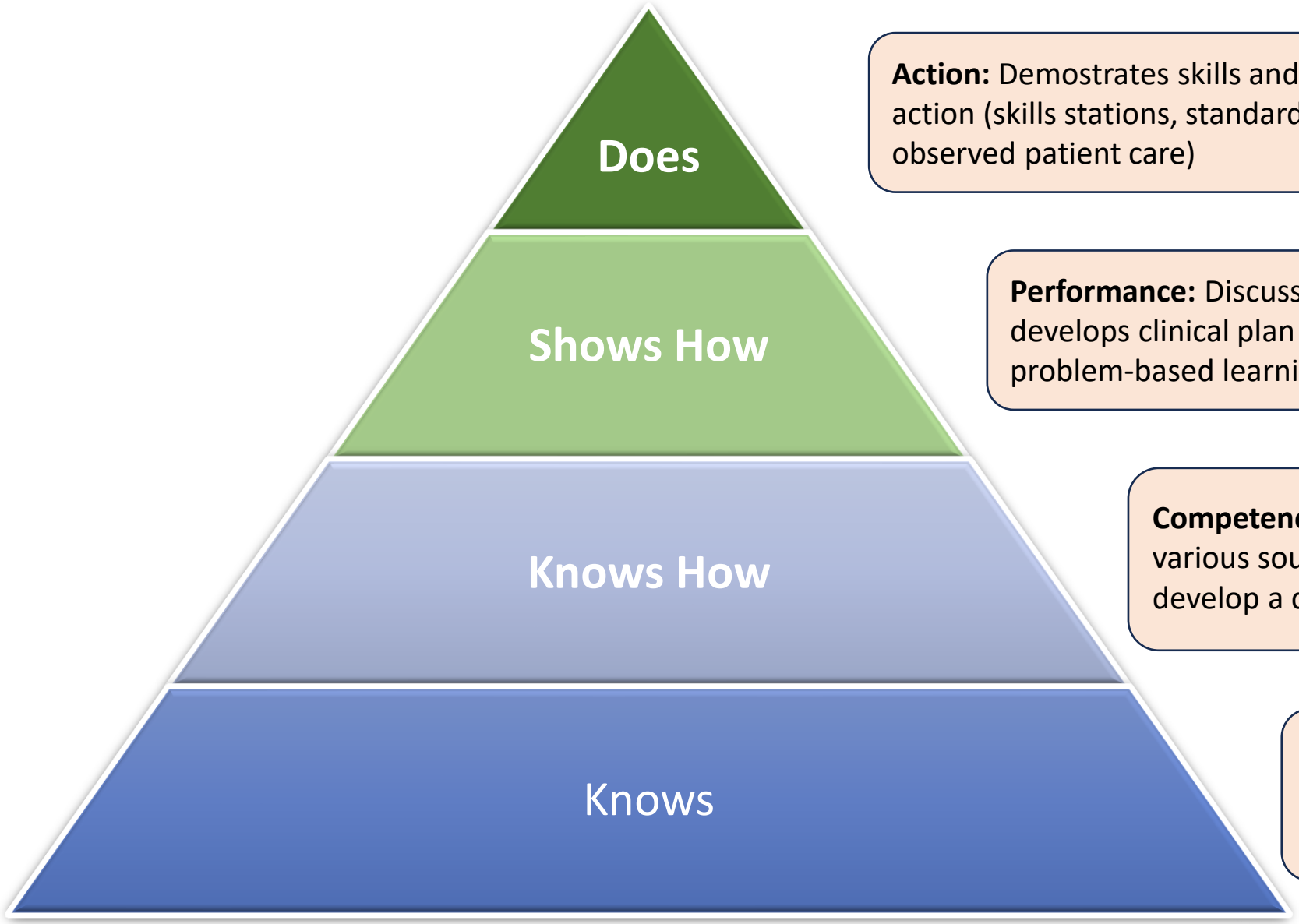
GROWTH & SUSTAINABILITY







This diagram illustrates the Miller model for *assessment* of learner knowledge, skills and competence:



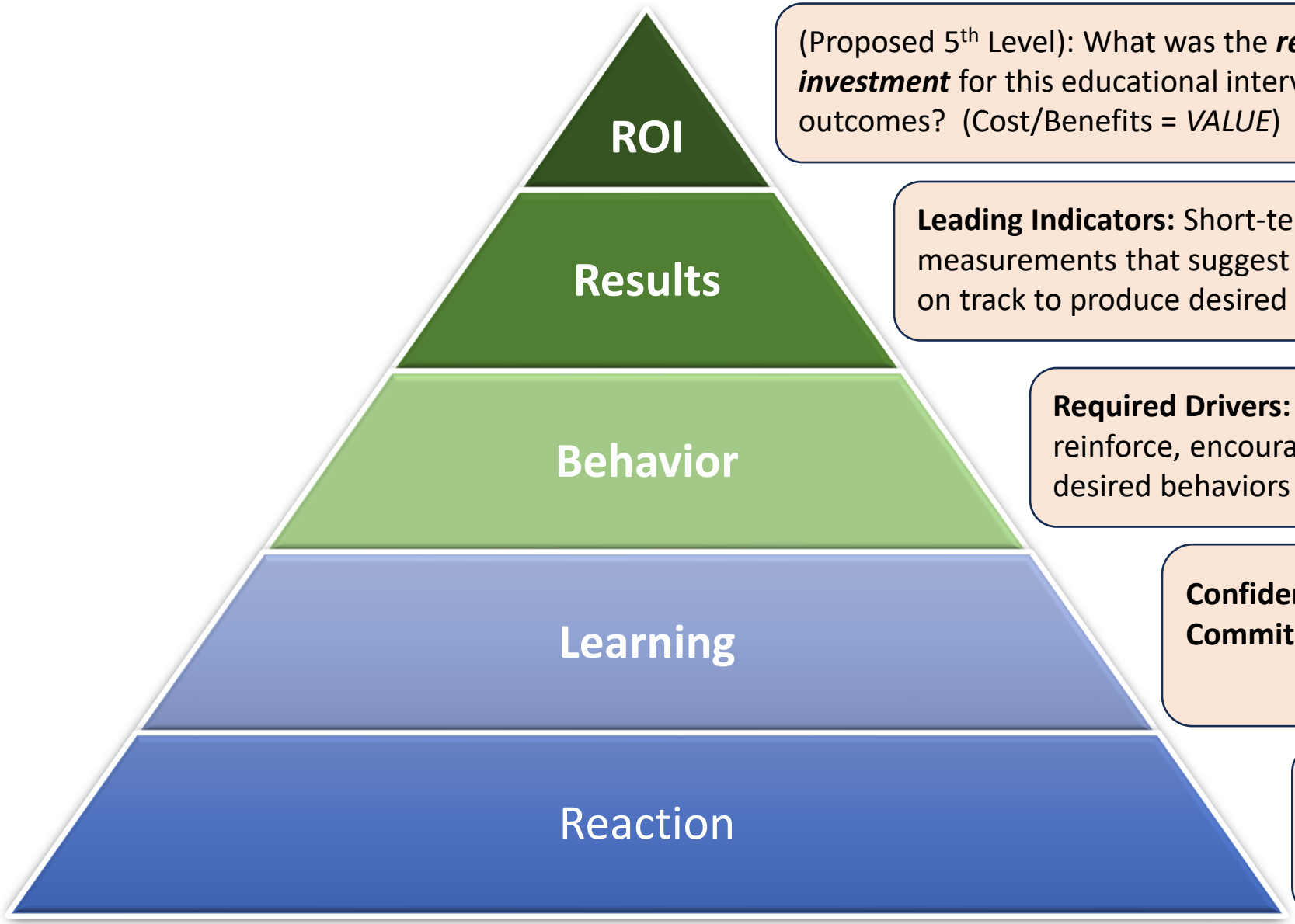
Action: Demostrates skills and competency through action (skills stations, standardized patient exams, observed patient care)

Performance: Discusses how data is collected, develops clinical plan of care (essay questions, problem-based learning)

Competence: Learner is able to collect date from various sources, is able to apply knowledge to develop a diagnostic plan

Knowledge: Tests, quizzes, discussions

Newer updates to the model include measures of:



(Proposed 5th Level): What was the ***return on investment*** for this educational intervention on outcomes? (Cost/Benefits = *VALUE*)

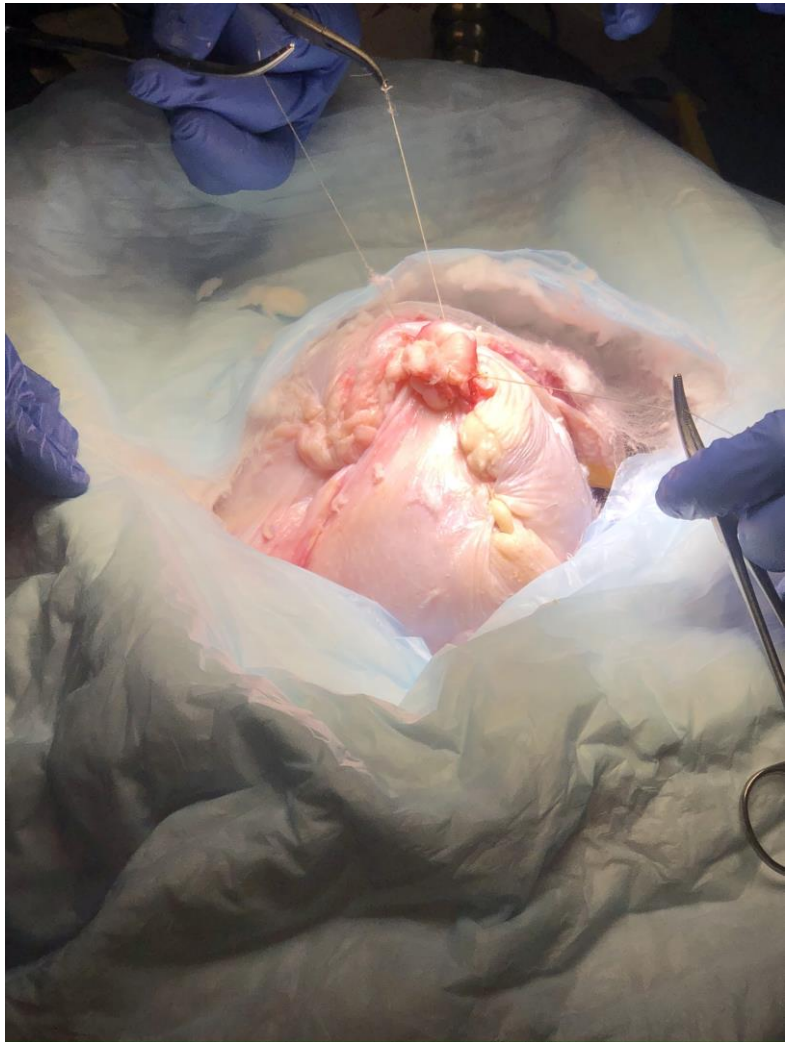
Leading Indicators: Short-term observations and measurements that suggest critical behaviors are on track to produce desired results

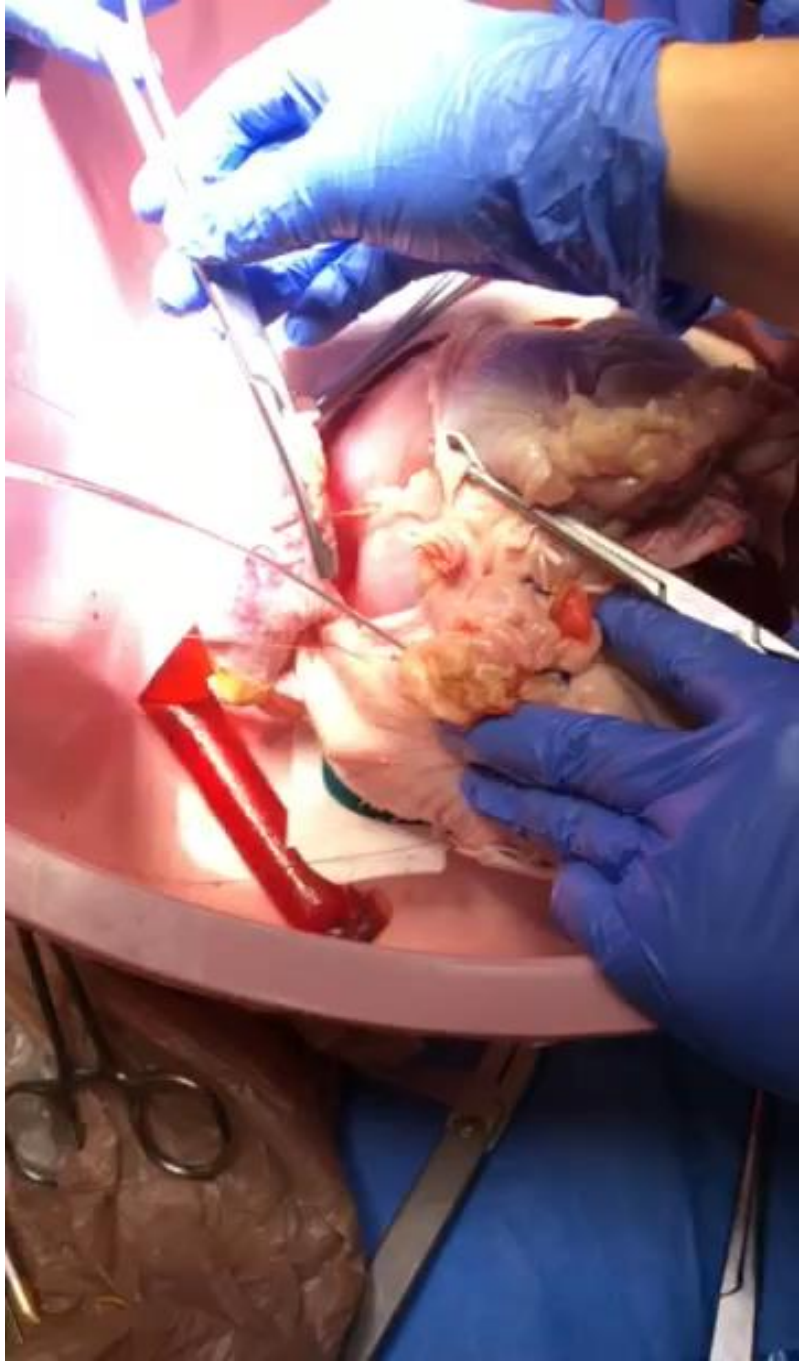
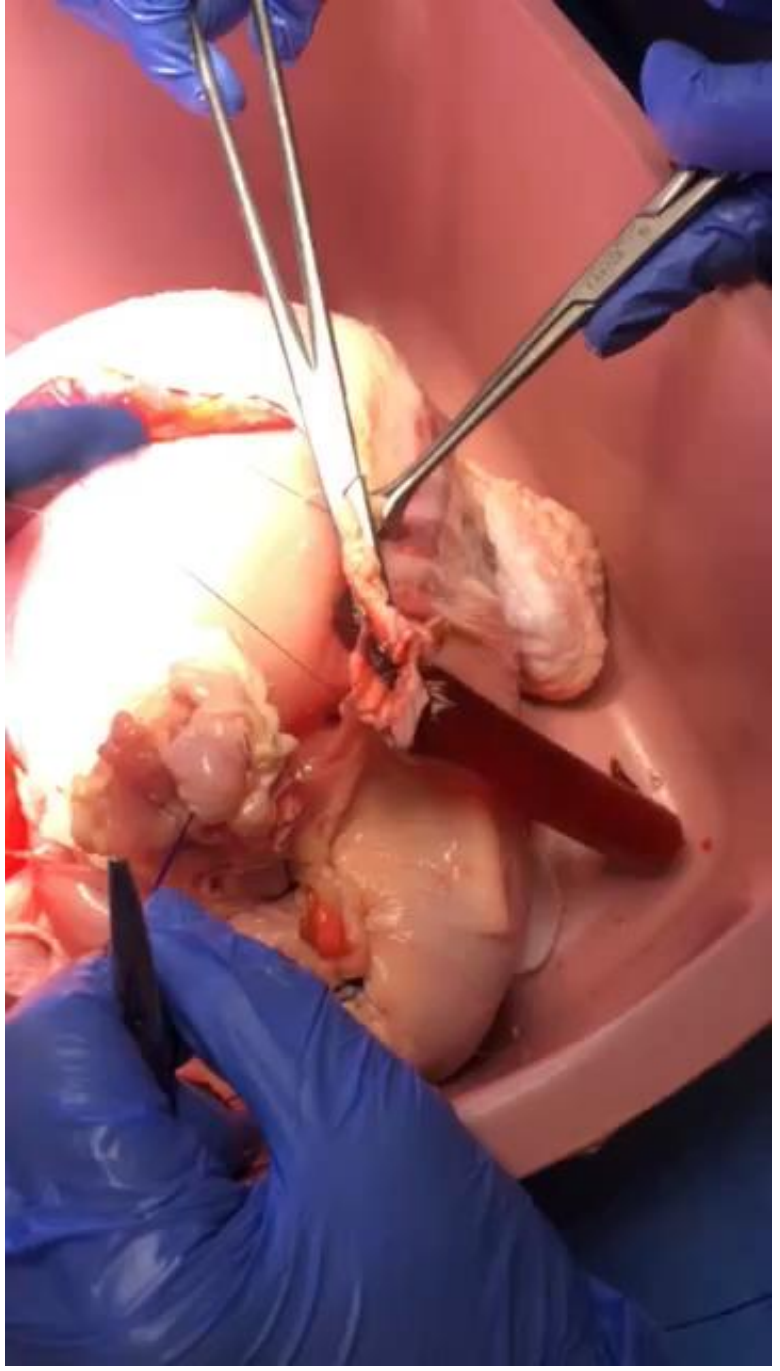
Required Drivers: Processes and systems that reinforce, encourage, monitor and reward critical desired behaviors on the job

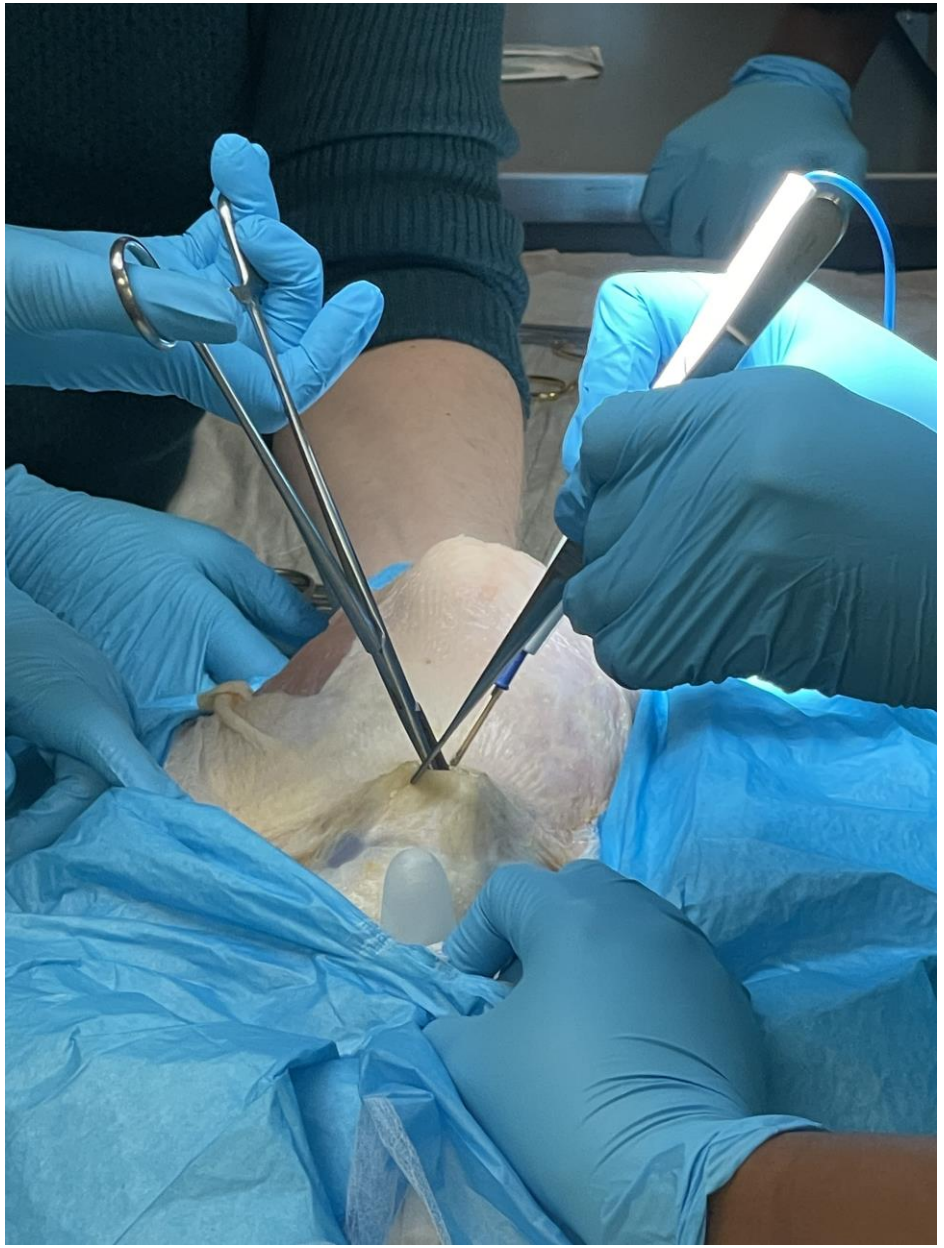
Confidence: "I think I can do this on the job"
Commitment: "I intend to do this on the job"

Engagement: Learner involvement in educational experience
Relevance: Degree to which education is applicable to practice

How can we build skills safely? SIMULATION!














national accreta foundation



ACCRETA EXPERIENCES

NATIONAL ACCRETA FOUNDATION


TOOLS TO SUPPORT

- **Financial:** May need to look at your own hospital, regional, national costs – think not only of cost, but of big picture reimbursement, cost to society. Team is not a cost but an investment

- **Communication:** Closed-loop communication, Crew resource management, Checklists, Debrief, Clear & respectful communication- ALL have a voice and can help improve.

- **Skills**: Use ALL staff to the top of their skill-set. Maintain high standards, remain respectful

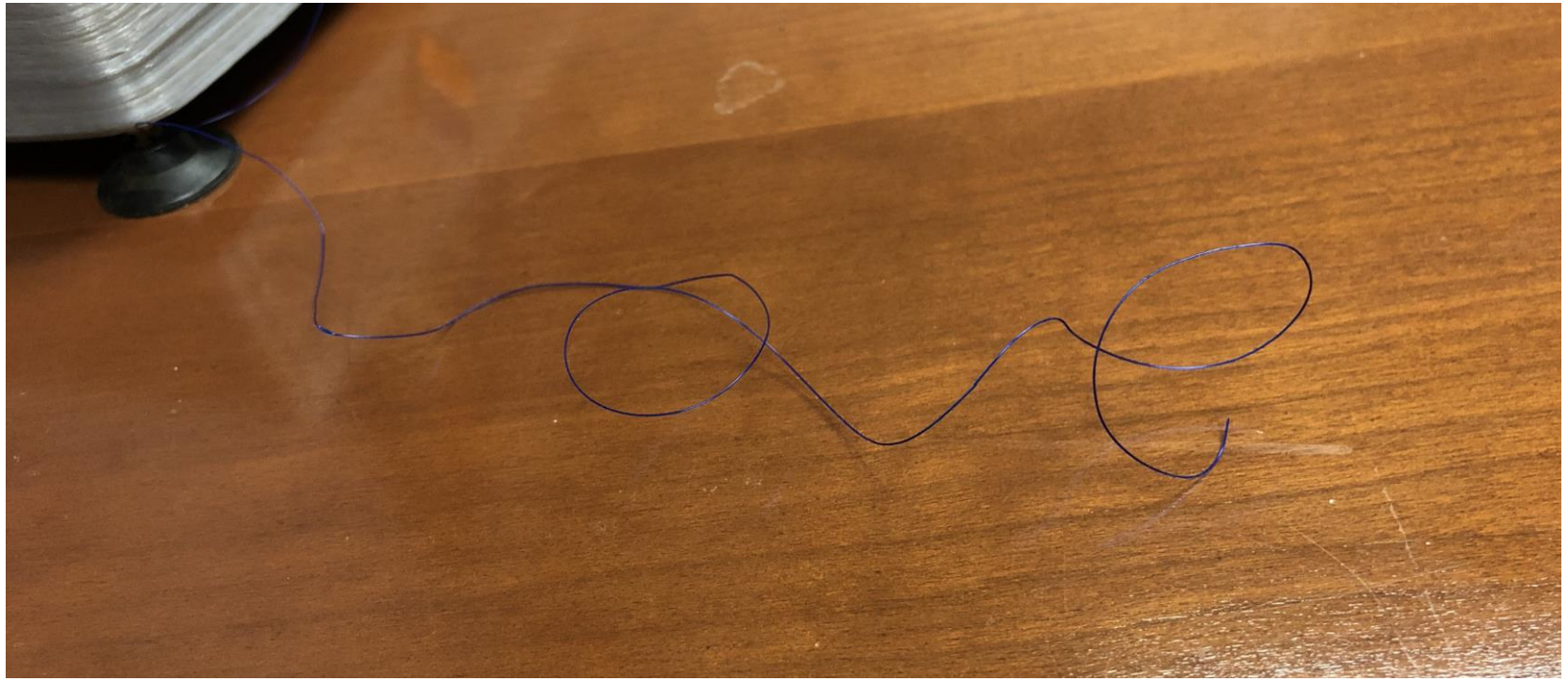
- **Team makeup:** Ensure individual skills complement one another – not everyone SHOULD necessarily all be of one skillset, but bring variety of skills, solid communication and a predictable, yet flexible system toward a common goal

Resources:

- www.is-pas.org www.passquared.org https://www.mogge-obgyn.com/

- https://www.figo.org/news/figo-consensus-guidelines-placenta-accreta-spectrum-disorders

THANK YOU!!!



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