Procedure Competency Assessment Tools: Lessons Learned

STFM

May 2017

Disclosures

No conflicts of interest to report

Objectives

On completion of this session, participants should be able to:

1. Explain what a PCAT is and how it is used
2. Apply strategies to implement use of PCATs at their own institutions
3. Explain what the PCAT learning collaborative is and how to join it

Introductions: Who We Are

- Jessi Taylor Goldstein
- Sara Shields
- David Goldstein
- Suzanne Eidson-Ton

- Also working with us:
- Thomas Kim
- Sue Magee
- Stephanie Rosener
- Wendy Barr
- PCAT Learning Collaborative

What the heck is a PCAT???

Procedure

Competency

Assessment

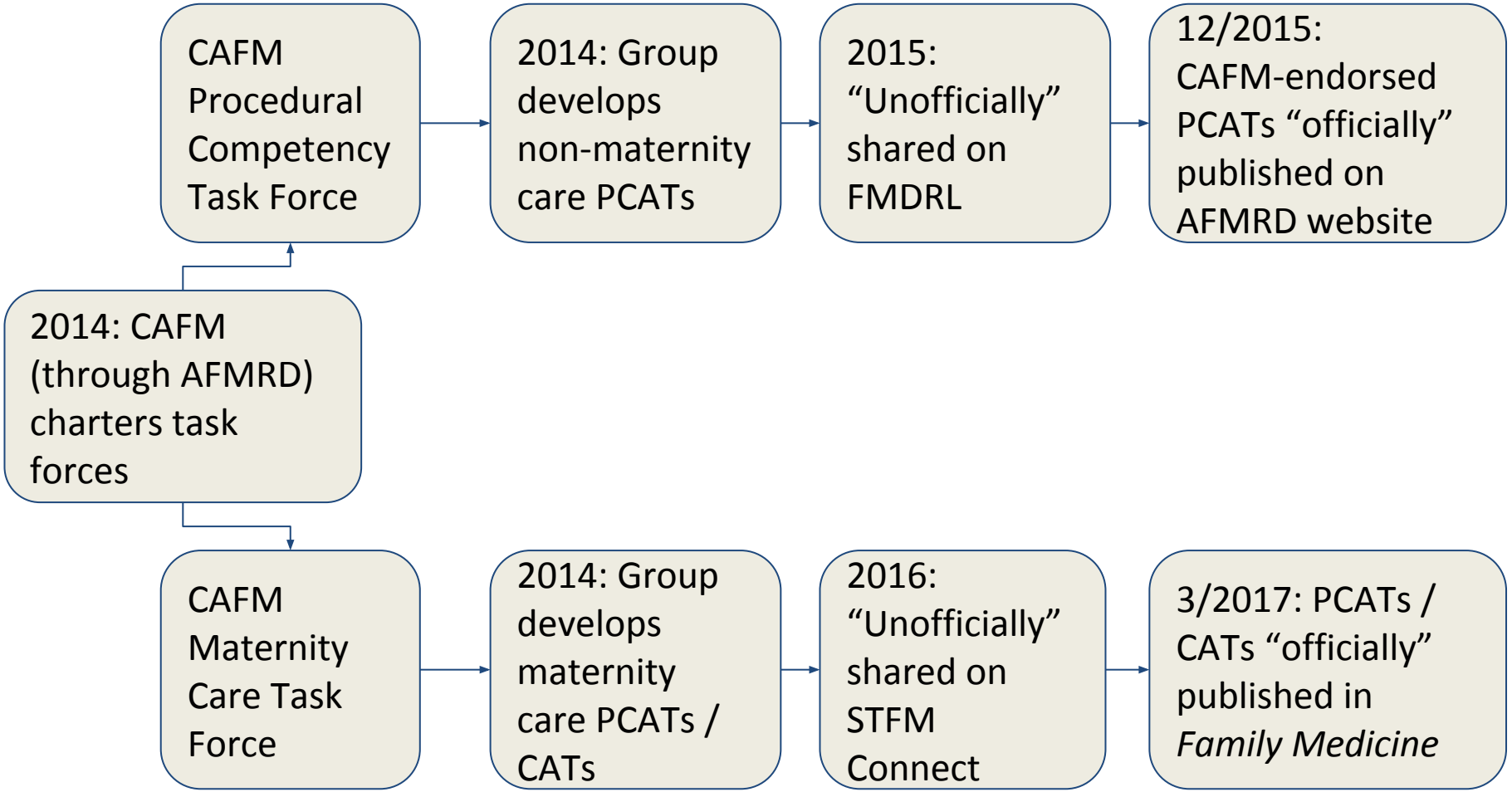
Tool

- Standardize procedural assessment in FM residencies
- Evaluate resident skill to perform independently
- Goal: baseline level of competence in all core procedures
- Maternity care included

And what about CATs? How is that different from PCATs? What if you google PCAT?

Where can you find the PCATs/CATs? (coming up)

PCAT Development



PCAT Development

- Explored evaluation instruments already in existence
  - Basic skills qualifications (BSQ)
  - Global procedural skills evaluation (GPSE)
  - Operative performance rating system (OPRS)

Evaluation Process

When you are ready, you will demonstrate an injection on an actual patient. To receive this qualification you will need to demonstrate correct technique on 3 patients for each of the three required injections, meeting 80% of the criteria listed below.

Resident

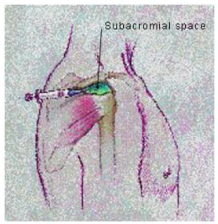
Attending Date

- ❑ Gathered appropriate equipment
- ❑ Chose appropriate medication
- ❑ Explained procedure to patient
- ❑ Identify landmarks
- ❑ Patient positioned
- ❑ Cleansed the area
- ❑ Injected medication in appropriate direction
- ❑ Applied bandage
- ❑ Tested adequacy of pain relief
- ❑ Evaluated for vagal/allergic response

Completed injections (attending to initial)

Site/number	1	2	3
Subacromial			
AC joint			

Basic Skills Qualification



Shoulder Joint Injection

Basic Skills are essential to provide high quality care quickly and efficiently when you have to make decisions and you do not have the luxury of time or the immediate availability of references. Basic Skills Qualifications are minimum basic skill sets prerequisite to learning disease specifics.

The purpose of this Basic Skills Qualification is to assure that you are comfortable performing the major injections of the shoulder. To achieve this Basic Skills Qualification, you will need to demonstrate the systematic approach outlined inside this booklet.

TUFTS UNIVERSITY FAMILY MEDICINE RESIDENCY

Figure 2

Global Procedural Skills Evaluation Form

Learner_____ Date_____

Instructor_____ Procedure_____

Learner self-assessment:

What did you do well?

What could you improve?

Instructor assessment	*Significant guidance provided*	*Some guidance provided*	*Performed independently*	*Unable to evaluate*
1. Preparation & Medical knowledge Indications, complications, patient positioning, relevant anatomy, equipment, steps of procedure, follow-up plan	☐	☐	☐	☐
2. Technical skills Instrument handling, aseptic technique, efficiency	☐	☐	☐	☐
3. Attention to patient comfort Appropriate analgesia, response to patient discomfort	☐	☐	☐	☐
4. Communication Informed consent, communication during procedure, post-procedure instructions	☐	☐	☐	☐
5. Self-awareness and seeking help Recognizes limits of own skills, seeks help appropriately	☐	☐	☐	☐

Global assessment of today's performance of this procedure:

☐	☐	☐	☐
Hands-on or verbal guidance provided with most aspects	Guidance provided with some aspects	Minimal guidance provided	Performed independently

Difficulty of this particular case: ☐ Average ☐ Unusually difficult

Suggestions for improvement:

_____

Instructor signature

Operative Performance Rating System (OPRS)

LAPAROSCOPIC APPENDECTOMY

Evaluator:	**Resident:**
Resident Level:	**Program:**

Date of Procedure:	**Time Procedure Was Completed:**
Date Assessment Was Completed:	**Time Assessment Was Initiated:**

Please rate this resident's performance during this operative procedure. For most criteria, the caption above each checkbox provides descriptive anchors for 3 of the 5 points on the rating scale. **"NA" (not applicable) should only be selected when the resident did not perform that part of the procedure.**

Case Difficulty

1	2	3	4	5
Straightforward anatomy, no related prior surgeries or treatment		Intermediate difficulty		Abnormal anatomy, extensive pathology, related prior surgeries or treatment (for example radiation), or obesity
☐	☐	☐	☐	☐

Degree of Prompting or Direction

Substantial Direction 1	2	Some Direction 3	4	Minimal Direction 5
Unable to direct team, use/choose instruments, or anticipate next steps as surgeon or as first assistant without constant attending prompting		Actively assists and anticipates own and attending's needs, performs basic steps with occasional attending direction to resident and/or surgical team. Somewhat hesitant and slow to anticipate or recognize aberrant anatomy, unexpected findings, and/or "slowing down" moments		Performs all steps and directs team with minimal direction from attending to either resident or team, i.e., anticipates needs, sets up exposure for self and assistant, transitions fluently between steps, gives clear direction to first assistant, maintains situation awareness, calmly recovers from error and recognizes when to seek help/advice
☐	☐	☐	☐	☐

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General Criteria

Instrument Handling

Poor 1	Fair 2	Good 3	Very Good 4	Excellent 5	NA
Tentative or awkward movements, *often* did not visualize tips of instrument or clips poorly placed		Competent use of instruments, *occasionally* appeared awkward or did not visualize instrument tips		Fluid movements with instruments *consistently* using appropriate force, keeping tips in view, and placing clips securely	
☐	☐	☐	☐	☐	☐

Respect for Tissue

Poor 1	Fair 2	Good 3	Very Good 4	Excellent 5	NA
Frequent unnecessary tissue force or damage by inappropriate instrument use		Careful tissue handling, *occasional* inadvertent damage		*Consistently* handled tissue carefully (appropriately), minimal tissue damage	
☐	☐	☐	☐	☐	☐

Time and Motion

Poor 1	Fair 2	Good 3	Very Good 4	Excellent 5	NA
Many unnecessary moves		Efficient time and motion, some unnecessary moves		Clear economy of motion, and maximum efficiency	
☐	☐	☐	☐	☐	☐

Operation Flow

Poor 1	Fair 2	Good 3	Very Good 4	Excellent 5	NA
Frequent lack of forward progression; frequently stopped operating and seemed unsure of next move		Some forward planning, reasonable procedure progression		Obviously planned course of operation and anticipation of next steps	
☐	☐	☐	☐	☐	☐

One sheet of paper

Procedure Competency Assessment Tool – Newborn Circumcision

Provider: _____ **Date:** _____

Procedure: [ ] 54150 Circumcision [ ] Other: _____
Method: [ ] Gomco [ ] Mogen [ ] Plastibell

How many of this procedure have you completed thus far? _____

Please circle the descriptor corresponding to the candidate's performance in each category, **irrespective of the training level.**

Indication/Informed Consent:

Novice		Competent		Expert
Not sure of the patient's history, context of the procedure, or has knowledge gaps in procedure contraindications or potential complications		Understands the general indications, contraindications, potential complications, and clinical value of procedure; able to explain to parent/guardian		Clearly articulates the clinical value, potential complications, and alternatives to patient; accurately answers all parent/guardian questions to obtain informed consent

Knowledge of Specific Procedure:

Novice		Competent		Expert
Deficient knowledge; unable to articulate procedure steps		Able to articulate all important steps of procedure		Demonstrates familiarity with all aspects of procedure

Procedure Setup:

Novice		Competent		Expert
Does not gather required supplies, poor patient positioning, poor sterile technique, or does not properly identify landmarks		Gathers key instruments and supplies; properly positions patient; identifies landmarks; maintains sterile technique		Anticipates supplies needed for unexpected complications; ergonomic setup of all instruments and supplies

Local Anesthesia:

Novice		Competent		Expert
Requires guidance to perform adequate block		Uses correct technique to perform nerve or field block without guidance and achieves adequate anesthesia		Smoothly and efficiently performs nerve or field block without guidance and with good anesthesia

Procedure Flow and Efficiency:

Novice		Competent		Expert
Frequently stops procedure and seems unsure of next move; many unnecessary moves		Demonstrates some forward planning with reasonable progression of procedure; efficient time/motion but some unnecessary moves		Obviously plans course of procedure with effortless flow from one move to the next; clear economy of movement and maximum efficiency

Procedure Competency Assessment Tool – Newborn Circumcision

Respect for Tissue:

Novice		Competent		Expert
Uses unnecessary force, or causes damage by inappropriate use of instruments		Careful handling of tissue without excessive force		Consistently handles tissue adeptly and appropriately with minimal damage

Instrument Handling:

Novice		Competent		Expert
Repeatedly makes tentative or awkward moves with instruments by inappropriate use of instruments		Competent use of instruments, but occasionally appears stiff, awkward, or uncertain		Fluid moves with instruments and no awkwardness; comfortable with application and extraction

Management of Complications: [ ] Not Applicable

Novice		Competent		Expert
Does not recognize or appropriately address developing complication; does not appropriately halt procedure with failed attempts		Recognizes and appropriately addresses developing complication; halts the procedure appropriately		Immediately recognizes developing complication; manages with precise direction and without hesitation

Overall on this task did the provider demonstrate competency to perform this procedure independently?

Yes _____ **No** _____

Comments:

_____
_____
_____
_____

Attending Name (Print): _____ **Signature/Date:** _____

Some Available Maternity PCATs

- Laceration Repair
- 3rd/4th degree Repair
- Cesarean
- Uterine Aspiration
- Vaginal Delivery
- Prenatal Care
- Labor Management

PCAT Features

- Five-point scale with 3 anchors
  - Novice (below threshold level)
  - Competent (threshold level)
  - Expert (aspirational level)
- Evaluation domains both general and specific to procedure
- One sheet of paper

PCAT Limitations

- Paper instrument in an electronic world
- Designed as a summative assessment
  - Limited effectiveness as a formative tool
  - No milestone language
  - Binary entrustment scale
- No accounting for:
  - Case difficulty
  - Degree of prompting or direction
  - Simulated procedures

How do we get to the PCATs?

- STFM Connect: FCMC Collaborative (requires login)
- STFM Resource Library (no login required)
  - http://resourcelibrary.stfm.org/viewdocument/procedure-competency-assessment-too
  - Search for “Procedure Competency Assessment Tools” (with quotation marks)

CAFM Consensus Statement for Procedural Training in Family Medicine Residency

AFMRD and STFM [need to] establish and support a learning collaborative for the continuing development, field testing, refinement, and dissemination of this method of procedural competency assessment.

Possible Strategies for Using PCATs

- Incorporate into already-existing evaluation systems
  - Paper (supplement)
  - Electronic (customize)
  - Hybrid
- Outpatient: procedure clinics, prenatal or FM sessions
- Inpatient: L&D, nursery, adult service

PCAT Utilization Survey

- Convenience sample recruited from posts on STFM Connect and AFMRD listserv
- Assesses engagement with PCATs and barriers to use

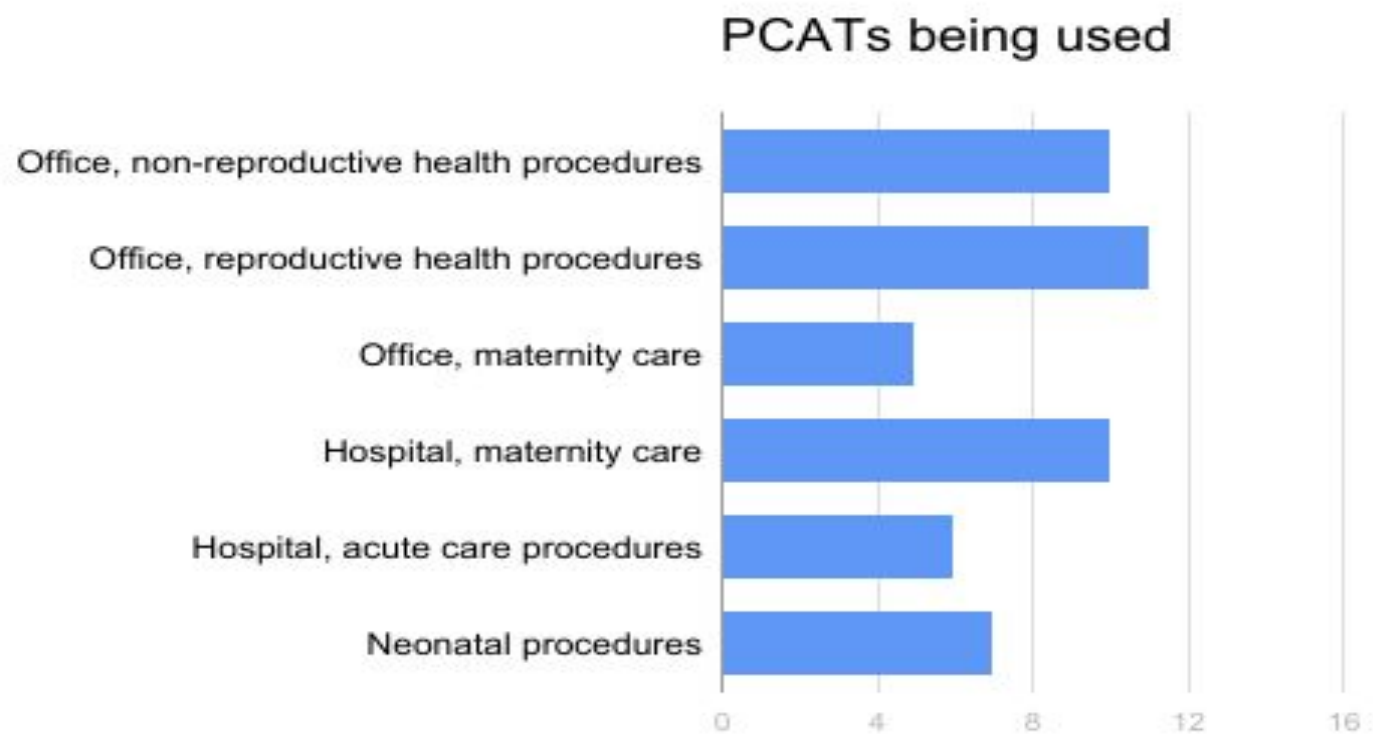
Survey Results

89 responses in 49 days

All Residency faculty

18 respondents had used PCATs to eval residency skill

PCAT types used in residency programs



PCAT ease of use

Question from survey:

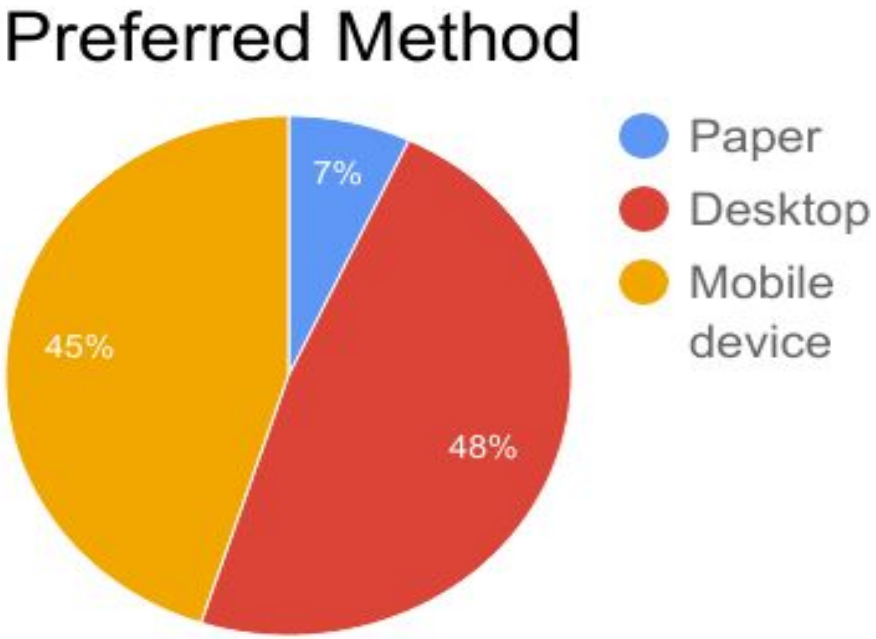
On scale 1 to 10, how difficult it is for you, personally, to use the PCATs to assess procedural competency?

Average 4/10 based on 15 respondents

PCAT ease of use- themes

- paper forms- sometimes not handy
- difficult to get resident to bring
- difficult starting work flow
- not incorporated into already used assessment software
- repetition in forms

What is your personally preferred method of completing written evaluation of trainees?

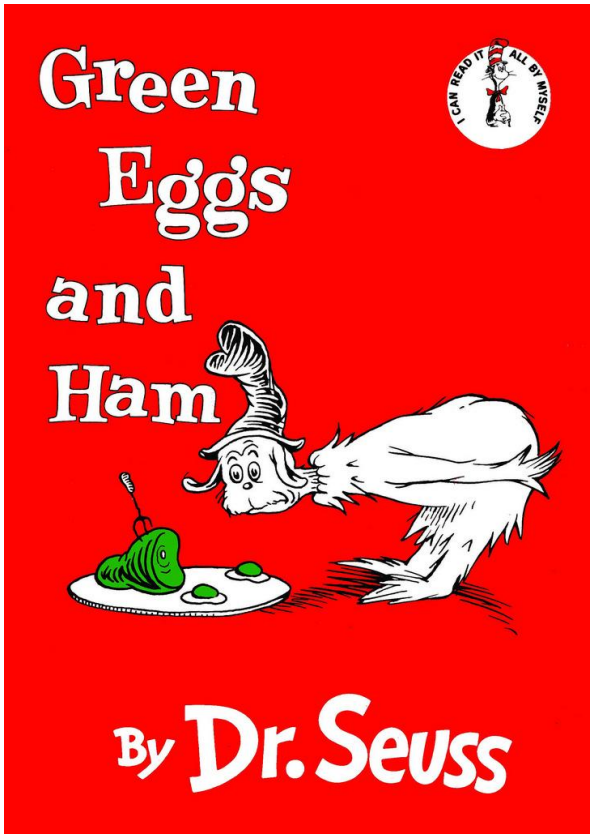


84 respondents

24 use E-value, 54 New Innovations, 6 other

How likely would you use PCATs if...

- In current form? 5/10
- Integrated into **electronic software? 7.5/10**
- In a standalone **electronic app? 6/10**



Natividad Family Medicine Residency

10/10/10 unopposed county hospital residency

Academic affiliation: UCSF – Dept. of Family and Community Medicine

OB Fellowship: 3 Fellows per year, run by OB department

2400 annual deliveries; most w/resident involved

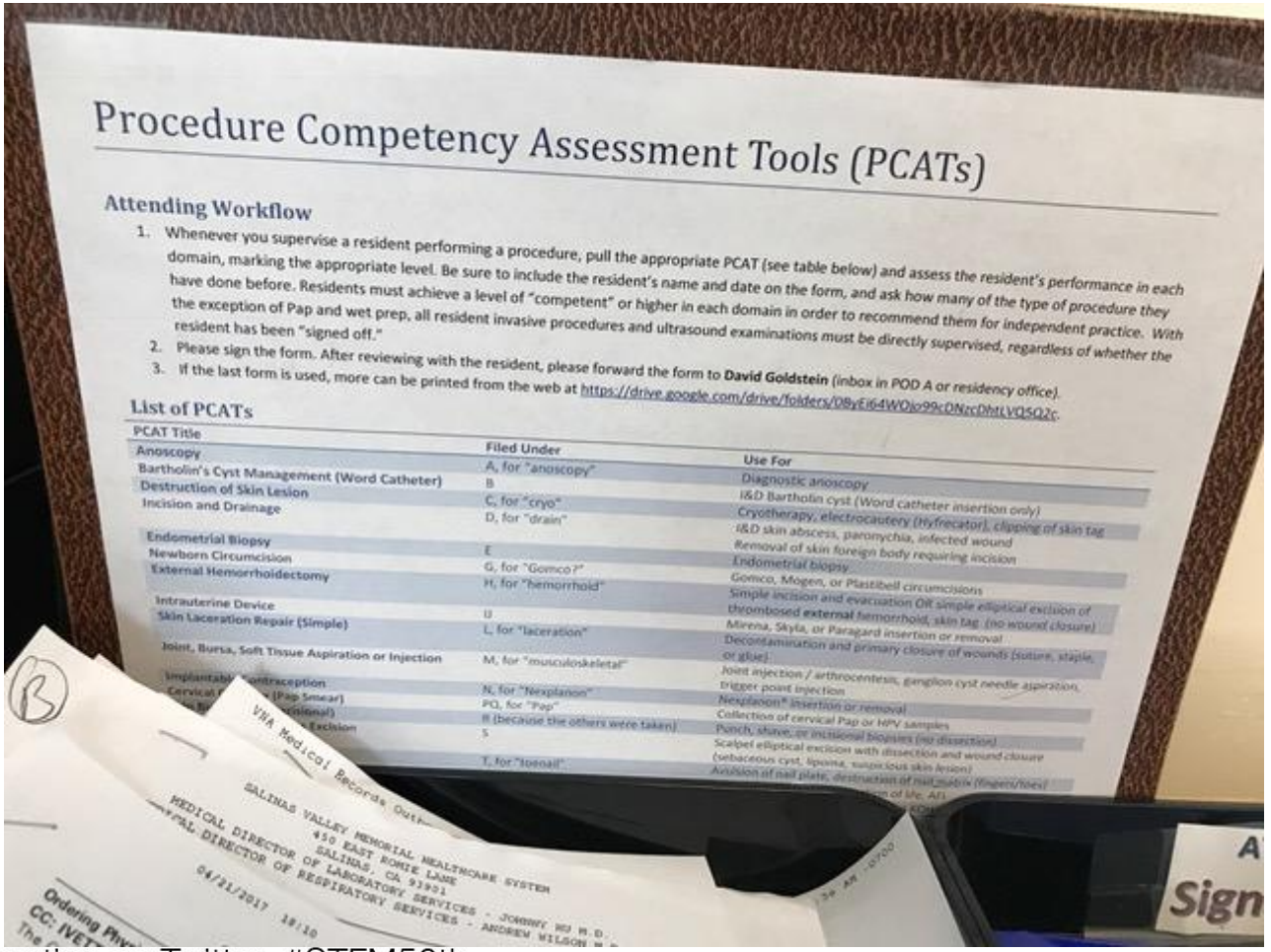
Use New Innovations for evaluations

PCATs rolled out in clinic 8/2016

PCAT	Number Completed
Musculoskeletal Injection	18
Intrauterine Device	17
Implantable Contraception	15
Nail Removal	7
Skin Biopsy (Non-excisional)	7
Endometrial Biopsy	6
Incision & Drainage	5
Destruction of Skin Lesion	4
Skin and Subcutaneous Excision	4

- Most used PCATs from clinic
- Not always most appropriate form for procedure
- Grade inflation initially (marked expert in every category on first attempt)

Paper folder in clinic



Procedure Competency Assessment Tools (PCATs)

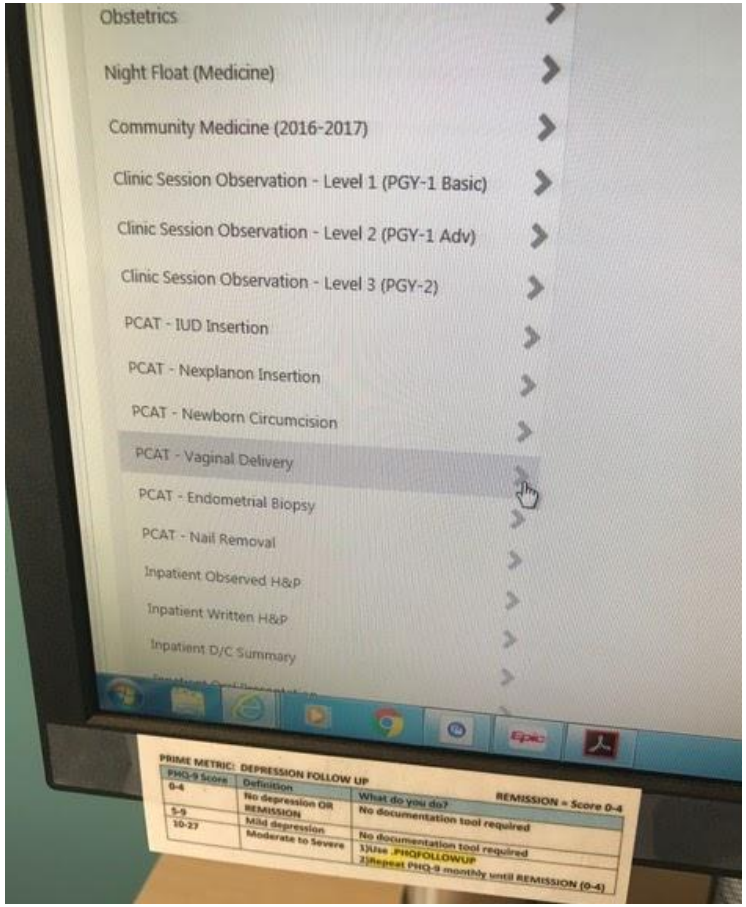
Attending Workflow

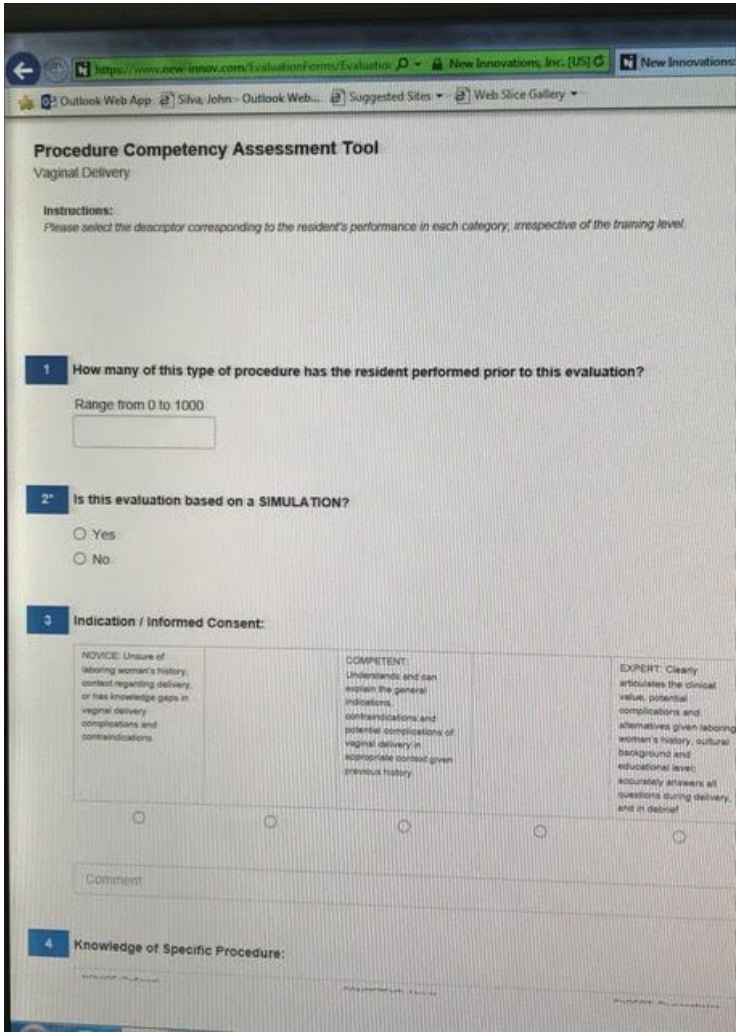
1. Whenever you supervise a resident performing a procedure, pull the appropriate PCAT (see table below) and assess the resident's performance in each domain, marking the appropriate level. Be sure to include the resident's name and date on the form, and ask how many of the type of procedure they have done before. Residents must achieve a level of "competent" or higher in each domain in order to recommend them for independent practice. With the exception of Pap and wet prep, all resident invasive procedures and ultrasound examinations must be directly supervised, regardless of whether the resident has been "signed off."
2. Please sign the form. After reviewing with the resident, please forward the form to **David Goldstein** (inbox in POD A or residency office).
3. If the last form is used, more can be printed from the web at https://drive.google.com/drive/folders/0ByEi64WOjo99cDNzcDhtLVQ5Q2c.

List of PCATs

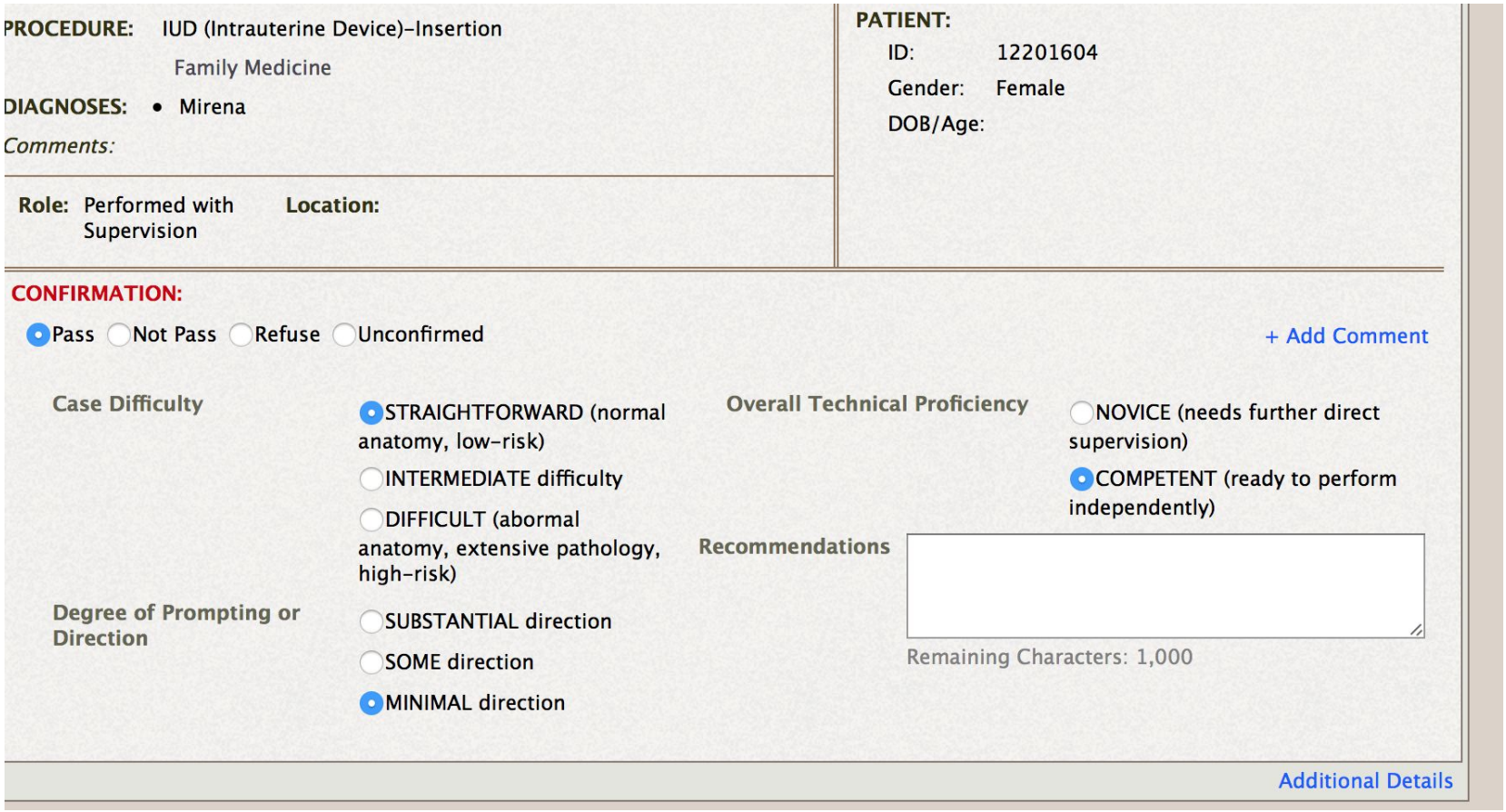
PCAT Title	Filed Under	Use For
Anoscopy	A, for "anoscopy"	Diagnostic anoscopy
Bartholin's Cyst Management (Word Catheter)	B	I&D Bartholin cyst (Word catheter insertion only)
Destruction of Skin Lesion	C, for "cryo"	Cryotherapy, electrocautery (Hyfrecator), clipping of skin tag
Incision and Drainage	D, for "drain"	I&D skin abscess, paronychia, infected wound Removal of skin foreign body requiring incision
Endometrial Biopsy	E	Endometrial biopsy
Newborn Circumcision	G, for "Gomco?"	Gomco, Mogen, or Plastibell circumcisions
External Hemorrhoidectomy	H, for "hemorrhoid"	Simple incision and evacuation OR simple elliptical excision of thrombosed **external** hemorrhoid, skin tag (no wound closure)
Intrauterine Device	I	Mirena, Skyla, or Paragard insertion or removal
Skin Laceration Repair (Simple)	L, for "laceration"	Decontamination and primary closure of wounds (suture, staple, or glue)
Joint, Bursa, Soft Tissue Aspiration or Injection	M, for "musculoskeletal"	Joint injection / arthrocentesis, ganglion cyst needle aspiration, trigger point injection
Implantable Contraception	N, for "Nexplanon"	Nexplanon® insertion or removal
Cervical [illegible] (Pap Smear)	PQ, for "Pap"	Collection of cervical Pap or HPV samples
[illegible] (Excisional)	R (because the others were taken)	Punch, shave, or incisional biopsies (no dissection)
[illegible] Excision	S	Scalpel elliptical excision with dissection and wound closure (sebaceous cyst, lipoma, suspicious skin lesion)
	T, for "toenail"	Avulsion of nail plate; destruction of nail matrix (fingers/toes)

PCATs in New Innovations



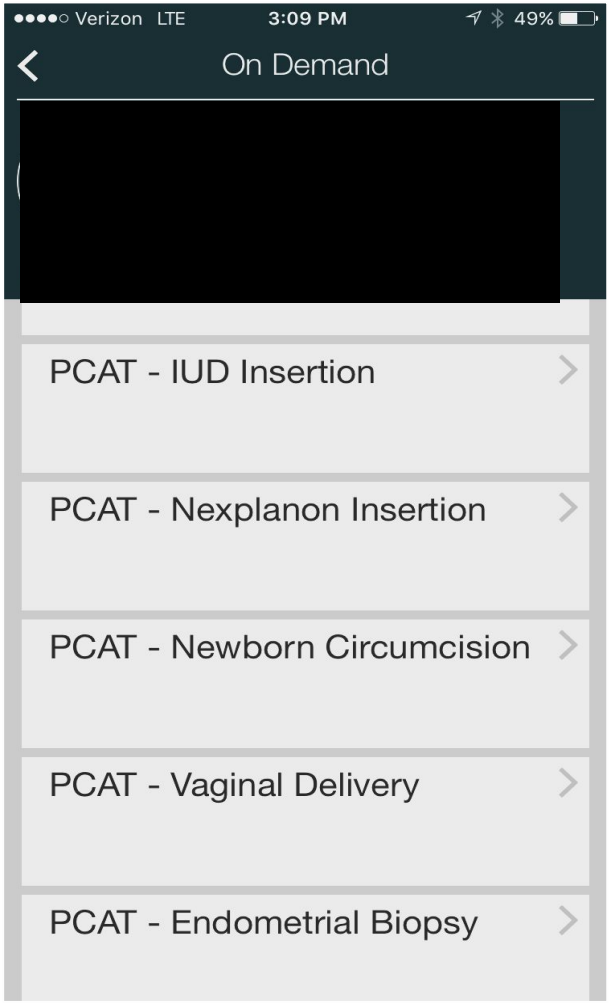


Incorporating other elements?



Actual iPhone screen shot

Available through app Armis which links with New Innovations



PCATs and Tiers

OB Training guideline from recent FM paper

- Basic Maternity Care
- Comprehensive maternity care
- Advanced maternity care

Minimum number prior to competency assessment maternity care

Competency	Basic	Comprehensive	Advanced
Prenatal visit	150	150	250
Outpatient postpartum	10	10	10
Continuity patient	3	10	10
Intrapartum care	10	40	80
Vaginal delivery	20-40	40-80	80
Perineal repair	-	5	10
Adv perineal repair	-	-	5
Instrumented vaginal delivery	-	5	5
Cesarean assist	-	5	5
Cesarean surgeon	-	-	70-100

Results from Natividad-OB

Pilot ran from 10/1/16-3/31/17 -paper tools

Total number of evals done: 47

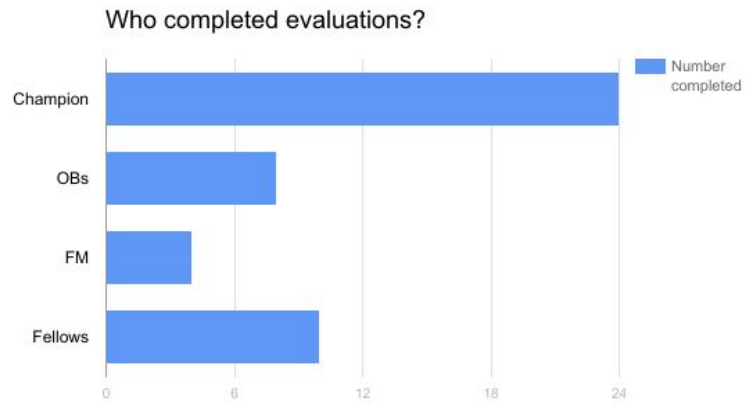
Vaginal Delivery 27, Cesarean 8, Laceration Repair 4, Ultrasound 2, Circumcision 1, Labor Management 2, Vacuum 1 , 1 extra one, resident used cesarean one with ob to do a cervical length one!

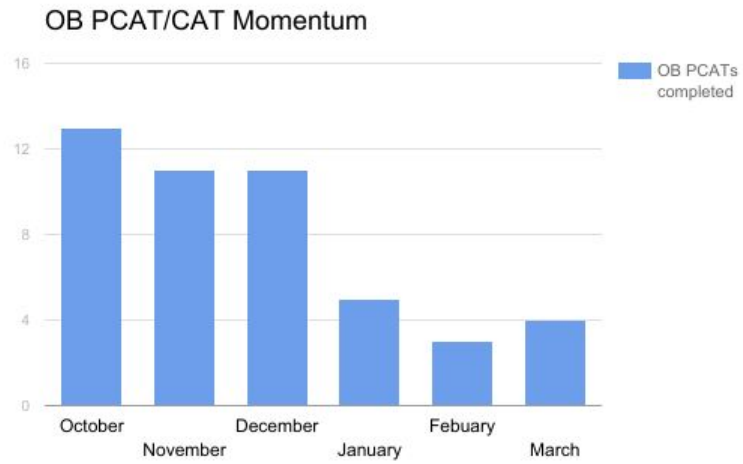
Only 4/8 deemed competent on cesareans (130,145, 100, 85)

11 deemed competent on vaginal deliveries average was 80 (range 50-100)

1 deemed competent on vacuum and had performed 3.

Results from Natividad-OB





Conclusions:

1. Residents like real time feedback on procedures
2. Hard to keep momentum, need a champion
3. Collaboration important
4. Numbers to competency consistent with other FM literature

Hypothesis:

Using PCATs will increase procedurally competent family physicians

Learning collaborative

Goal is to pilot tools for their use in residency/ fellowship training

Monthly conference calls + In-person meetings +

STFM Connect forum→

Real time feedback = better tools

Goals of Learning Collaborative

1. Assess the use of each PCAT at the participating residency programs
2. Determine how many procedures are logged before someone is assessed for competency
3. Discuss which PCATs are not working well for resident assessment
4. Describe barriers found to implementation of the PCATs
5. For maternity care PCATs, integrate these with OB tiers
6. Discuss ongoing work and the future of the PCAT Pilot and learning collaborative

Learning Collaborative next steps

What is our future direction?

-Electronic tools

-Interfaced with current software v. stand alone app?

-Using tools to legitimize “Recognition of focused practice”- hospital medicine, maternity care next?

How do we keep stakeholders engaged?

References

1. ACGME Review Committee for Family Medicine. Frequently Asked Questions: Family Medicine. *ACGME Website*. 2014. http://www.acgme.org/acgmeweb/Portals/0/PDFs/FAQ/120_family_medicine_FAQs_07012014.pdf

Accessed November 13, 2014.

2. Nothnagle M, Sicilia JM, Forman S, et al. Required procedural training in family medicine residency: a consensus statement. *Fam Med*. 2008;40(4):248-252.

3. Kelly BF, Sicilia JM, Forman S, Ellert W, Nothnagle M. Advanced procedural training in family medicine: a group consensus statement. *Fam Med*. 2009;41(6):398-404.

4. Table 12: Clinical Procedures Performed by Physicians at their Practice (as of June 30, 2014). 2014. http://www.aafp.org/about/the-aafp/family-medicine-facts/table-12.html

Accessed August 14, 2015.

5. CAFM Consensus Statement for Procedural Training in Family Medicine Residency. *Association of Family Medicine Residency Directors Website*. 2016. http://www.afmrd.org/page/procedures

Accessed September 12, 2016.

References

6. Magee SR, Fidson-Ton WS, Leeman J, Tuggy M, Kim TO, Nothnagle M, Breuner J. Family Medicine Maternity Care Call to Action: Moving Toward National Standards for Training and Competency Assessment . Fam Med 2017;49(3):211-217

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