

Professional Portfolio

Tyler Barreto, MD

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Assistant Professor,
Department of Family Medicine
Georgetown University School of Medicine
Georgetown University - Providence Hospital
Family Medicine Residency Program

Professional Portfolio - Table of Contents

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Statement of Research

Through a seemingly random series of research projects, I have come to health services research as my main interest. In medical school and residency, I found a wonderful mentor in a bariatric surgeon, Dr. Kemmeter. He taught me how to ask and answer questions, he guided me as I struggled through IRBs and abstracts, and he sat supportively in the audience as I stood on a national stage presenting my research, which contradicted the current practices of the many, highly regarded surgeons in attendance. My work with Dr. Kemmeter strengthened my passion for research and resulted in a number of publications related to bariatric surgery. What I learned about research methods through this work, led to my own studies of childhood obesity and behavioral interventions and point-of-care ultrasound in primary care. Hoping to formalize my research education — and becoming frustrated with the health care system — I accepted the position as a health policy fellow at the Robert Graham Center.

The peripatetic nature of my research fellowship has continued the breadth of my research topics. Currently, I am looking at obstetric workforce concerns, care management definitions and bright spots, and low value primary care effects on Medicare spending. I am answering solution directed research questions during my time at the Bureau of Primary Health Care at the Health Resources and Services

Administration. This has led me to research on screening, brief intervention, and referral to treatment (SBIRT) for alcohol abuse, substance abuse, and depression; human trafficking; and incentivizing quality improvement.

The one constant in a research agenda and training that seem so varied is a fascination with pursuing answers that can benefit my patients. However, the search for answers always seems to come back to addressing problems in health care systems and delivery. I have enjoyed looking at workforce issues, bright spotting, and population health, and I hope to continue using this wide lens to establish myself in health services research.

Publications

Peer reviewed publications

- Barreto T**, Peterson L, Petterson S, Bazemore A. Family Physicians Practicing High Volume Obstetric Care Has Recently Dropped by Half. *American Family Physician*. Accepted.
- Barreto T**, Lin K. Implementing AHRQ Effective Health Care Reviews: What are the benefits and harms of noninvasive treatments for acute, subacute, and chronic low back pain? *American Family Physician*. Accepted.
- Barreto T**, Lin K. Interventions to facilitate shared decision making to address antibiotic use for acute respiratory tract infections in primary care. *American Family Physician*. 2017 Jan;95(1).
- Polega J, **Barreto T**, Kemmeter K, Koehler T, Davis A, Kemmeter P. A matched cohort study of laparoscopic biliopancreatic diversion with duodenal switch and sleeve gastrectomy performed by one surgeon. *Surg Obes Relat Dis*. 2016 Oct 31.
- Hall JW, Holman H, Bornemann P, **Barreto T**, Henderson D, Bennett K, Chamberlain J, Maurer D. Current Curricula and Interest in Point of Care Ultrasound Education in Family Medicine Residency Programs: A CERA study. *Fam Med*. 2015 Oct;47(9):706-11.
- Barreto T**, Kemmeter P, Paletta M, Davis A. A comparison of a single center's experience with three staple line reinforcement techniques in 1,502 laparoscopic sleeve gastrectomy patients. *Obes Surg*. 2015 Mar;25(3):418-22.

Non peer reviewed publications

- Barreto, T**. A mentor for the unexpected. Exit 182. Spring 2008.
- Palmer, J., Wyeth, D., Burow, S., Payton, S., **Barreto, T.**, Hedges, C., Johns, L., Kloehn, N., Neumeyer, S., & Seymour, A. Intergovernmental Issues in Indiana: 2006 IACIR Survey. Indiana Advisory Commission on Intergovernmental Relations. Indiana University Center for Urban Policy and the Environment: Indianapolis, IN. 2007.

Oral presentations

- Barreto, T**, Cesario M, Holman H, Davis A, Koehler T. (2016, April 27). Text messaging as a tool for improving a weight loss and lifestyle modification program for children- a pilot study. GRMEP Research Day.
- Barreto T**, Smith J, Gilman A, Kemmeter P. (2015, April 22). Most effective revisional bariatric surgery after failed Roux-en-Y gastric bypass. GRMEP Research Day.
- Barreto T**, Kemmeter P, Paletta M, Davis A. (2014, November 5). A comparison of three staple line reinforcement techniques in vertical sleeve gastrectomy. Obesity Week: ASMBS Poster of Distinction.
- Barreto T**, Henderson D, Chamberlain J, Holman H. (2014, April 23). Family Medicine Resident Attitudes Toward Bedside Ultrasound Training. GRMEP Research Day.

- Barreto T**, Kemmeter P, Paletta M, Davis A. (2014, April 23). A comparison of three staple line reinforcement techniques in vertical sleeve gastrectomy. GRMEP Research Day.
- Barreto, T.** (2011). SBJSoM student-run free clinic grant proposal. At Presentation of Wall Alumni Service Award Finalists, Grinnell, IA.

Poster presentations

- Barreto T**, Wingrove P, Chung Y, Liaw W, Petterson S. (May 2017) Does low value care increase Medicare spending? STFM Annual Meeting.
- Barreto T**, Eden A, Petterson S, Bazemore A, Peterson L. (May 2017) The Current State of Family Medicine Obstetric Care: Who will fill the gap? STFM Annual Meeting.
- Blank N, **Barreto T**, Vreeke T. (2017, May). Quality of Resident Obesity Education. STFM Annual Meeting.
- Ellens N, Simon J, **Barreto T**, Kemmeter K, Kemmeter P. (March 2017) Esophagocruroplasty: a safe technique for repairing hiatal hernias in sleeve gastrectomy patients. Minimally Invasive Surgery Symposium.
- Schlinzklein B, **Barreto T**, Kemmeter K, Koehler T, Davis A, Kemmeter P. (2015, November). A single center comparison of laparoscopic gastric bypass, sleeve gastrectomy, and duodenal switch in those ≥ 65 years old. ASMBS 32nd Annual Meeting at Obesity Week.
- Polega J, **Barreto T**, Kemmeter K, Davis A, Kemmeter P. (2015, November). A matched cohort study of laparoscopic biliopancreatic diversion with duodenal switch and sleeve gastrectomy performed by one surgeon. ASMBS 32nd Annual Meeting at Obesity Week.
- Polega J, **Barreto T**, Kemmeter K, Davis A, Kemmeter P. (2015, November). Comparison of staple line reinforcement technique in vertical sleeve gastrectomy performed by a single surgeon. ASMBS 32nd Annual Meeting at Obesity Week.
- VanderVennen M, **Barreto T**, Kemmeter K, Koehler T, Davis A, Kemmeter P. (2015, November). Cost comparison of three staple-line reinforcement techniques in vertical sleeve gastrectomy. ASMBS 32nd Annual Meeting at Obesity Week.
- Barreto T**, Kemmeter P, Paletta M, Davis A. (2014, November). A comparison of three staple line reinforcement techniques in vertical sleeve gastrectomy. ASMBS 31nd Annual Meeting at Obesity Week.
- Barreto T**, Jullie A, Nicolaou E, Cesario M, Holman H. (2014, April 23). Text messaging as a tool for improving attendance and lifestyle survey scores of a weight loss and lifestyle modification program for children. GRMEP Research Day.
- Barreto, T.**, Alago, W., & Motta-Moss, A. (2010, July). Disparities in the treatment of early stage lung cancer in the Latino population in New York. Poster session presented at the Memorial Sloan Kettering Cancer Center Medical Student Summer Fellowship Final Presentation, New York, NY.
- Barreto, T.**, & Encarnacion, C. (2010, November). San Juan Bautista School of Medicine student-run free clinic. Poster presented at the 2010 AAMC Annual Meeting OSR Poster Session, Washington, D.C.
- Barreto, T.** (2009, September). Health reform and policy in the Dominican Republic. Poster presented at Summer Research Grant Recipient Poster Session, Grinnell, IA.

Works in Progress

Barreto T, Eden A, Petterson S, Bazemore A, Peterson L. Family Medicine Graduates Intend to Practice Obstetrics. JABFM.

Barreto T, Liaw W, Chung Y, Wingrove P, Petterson S. Does low-value primary care lead to increased Medicare spending?

Barreto T, Lin S, Belton A, Sripipatana A, Liaw W, Petterson S. Screening, Brief Intervention, and Referral to Treatment: Health Center Bright Spots.

Coffman M, Liaw W, Bazemore A, Jabbarpour Y, **Barreto T**, Sullivan E, Petersen J. Care Management in Medicare Advantage Bright Spots

Ellens N, Simon J, **Barreto T**, Kemmeter K, Kemmeter P. Esophagocruroplasty: A safe technique for repairing hiatal hernias in sleeve gastrectomy patients.

VanderVennen M, **Barreto T**, Kemmeter K, Koehler T, Davis A, Kemmeter P. Cost analysis of staple line reinforcement using buttressing versus suturing in laparoscopic sleeve gastrectomy.

Mentoring

Name, Position	Training Program	Years	Publication, Presentation, Thesis, Grant
James Polega, MS4	Michigan State University College of Human Medicine	Fall 2014 - Summer 2016	<ol style="list-style-type: none"> 1. Polega J, Barreto T, Kemmeter K, Koehler T, Davis A, Kemmeter P. A matched cohort study of laparoscopic biliopancreatic diversion with duodenal switch and sleeve gastrectomy performed by one surgeon. <i>Surg Obes Relat Dis.</i> 2016 Oct 31. 2. Polega J, Barreto T, Kemmeter K, Davis A, Kemmeter P. (2015, November). A matched cohort study of laparoscopic biliopancreatic diversion with duodenal switch and sleeve gastrectomy performed by one surgeon. ASMBS 32nd Annual Meeting at Obesity Week. 3. Polega J, Barreto T, Kemmeter K, Davis A, Kemmeter P. (2015, November). Comparison of staple line reinforcement technique in vertical sleeve gastrectomy performed by a single surgeon. ASMBS 32nd Annual Meeting at Obesity Week.
Marielle VanderVennen , MS4	Michigan State University College of Human Medicine	Fall 2014 - Summer 2016	<ol style="list-style-type: none"> 1. VanderVennen M, Barreto T, Kemmeter K, Koehler T, Davis A, Kemmeter P. (2015, November). Cost comparison of three staple-line reinforcement techniques in vertical sleeve gastrectomy. ASMBS 32nd Annual Meeting at Obesity Week. 2. VanderVennen M, Barreto T, Kemmeter K, Koehler T, Davis A, Kemmeter P. Cost analysis of staple line reinforcement using buttressing versus suturing in laparoscopic sleeve gastrectomy. Manuscript in Progress.
Brieanne Wilson (Schlinzklein), MS4	Michigan State University College of Human Medicine	Fall 2014 - Summer 2016	<ol style="list-style-type: none"> 1. Schlinzklein B, Barreto T, Kemmeter K, Koehler T, Davis A, Kemmeter P. (2015, November). A single center

			comparison of laparoscopic gastric bypass, sleeve gastrectomy, and duodenal switch in those ≥ 65 years old. ASMBS 32nd Annual Meeting at Obesity Week.
Nate Ellens, MS3	Michigan State University College of Human Medicine	Fall 2015 - Summer 2016	1. Ellens N, Simon J, Barreto T, Kemmeter K, Kemmeter P. (March 2017) Esophagocruroplasty: a safe technique for repairing hiatal hernias in sleeve gastrectomy patients. Minimally Invasive Surgery Symposium.

Teaching Philosophy and Goals

Goals:

- To transition smoothly from learner to teacher
- To be aware of burnout and help to prevent it
- To find the sweet spot between teaching relevant points and overwhelming learners
- To teach evidence based points

Methods to achieve those goals:

- Give at least one specific, positive feedback every time I work with a learner
- Remember that medicine is part art and recognize and accept a plan that is reasonable and safe even if it is not necessarily what I would do
- Look back at the literature for updates on at least one teaching topic every week
- Help residents with tasks when workload is high
- Role model work/life balance

Teaching Responsibilities

Medical Student Education - Georgetown University School of Medicine

Dates	Course or event	Role; description
Spring 2017 - present	Evidence Based Medicine I	Lead student through the following course objectives: 1. Describe EBM concepts and methods used to evaluate a published article and to weigh a body of medical literature. 2. Develop optimal MEDLINE search strategies for finding clinically relevant articles about questions about therapy, diagnosis, prognosis, and etiology/harm. 3. Apply best practice search techniques to locate a narrative review on a selected topic. 4. Conduct a comprehensive literature search to answer a clinical foreground question about therapy. 5. Identify, locate and use secondary literature resources such as the Cochrane Collaboration.
Feb 8, 2017	Advocacy Workshop	Participate in advocacy workshop given to first year medical students by presenting a case study.
Jan 18, 2017	Panel on Primary Care	Present on my experiences as a primary care physician. Answer questions from current medical students about being a primary care physician.
Fall 2016-present	Evidence Based Medicine II	Lead student through the following course objectives: 1. Describe EBM concepts and methods used to evaluate a published article and to weigh a body of medical literature. 2. Develop optimal MEDLINE search strategies for finding clinically relevant articles about questions about therapy, diagnosis, prognosis, and etiology/harm. 3. Apply best practice search techniques to locate a narrative review on a selected topic. 4. Conduct a comprehensive literature search to answer a clinical foreground question about therapy. 5. Identify, locate and use secondary literature resources such as the Cochrane Collaboration. 6. Evaluate a study about therapy. Apply concepts that relate to validity of RCTs including randomization, concealed allocation, intention-to-treat, blinding, significance, and power. 7. Evaluate a case-control study. Apply concepts used in case control studies including odds ratio, statistics for adjustment of groups, and recall bias. 8. Evaluate a study about diagnosis. Apply concepts that relate to the validity of these studies including blinding, use of a gold standard, sensitivity, specificity, and negative and positive predictive value. 9. Evaluate evidence about historical and physical exam findings. Apply concepts included in these articles including likelihood ratios, prediction rules. 10. Evaluate a decision analysis or cost-effectiveness study. Understand concepts relevant to these articles including effectiveness, cost-effectiveness, and quality-adjusted life years (QALY). 11. Evaluate a meta-analysis and apply concepts, which relate to their validity including forest plots, funnel plots, summary odds ratios.

		<p>12. Evaluate a guideline and apply concepts that relate to guideline validity including use and evaluation of evidence, panel composition, and methodology/process of making recommendations.</p> <p>13. Use in-text and reference-list citations. Demonstrate appropriate quoting, citing, and paraphrasing. Produce writing free from plagiarism and inappropriate copying and pasting by using the above strategies and an accepted reference style such as APA, MLA, or AMA.</p> <p>14. Reflect on your current EBM knowledge, skills, and values and develop a plan for improvement.</p>
Fall 2016-present	Patients, Populations, and Policy	<p>Lead discussions over various topics in order to reach the following educational objectives:</p> <ol style="list-style-type: none"> 1. Articulate the role of socioeconomic, environmental, cultural, and other determinants of health on the health status and health care of individuals and populations both nationally and globally. 2. Explain the complementary approaches of clinical medicine, community medicine, public health and population health in reducing health disparities and apply this approach when caring for patients. 3. Describe the organization and financing of the US health care system and their effects on access, utilization and quality of care for individuals and populations. 4. Value the importance of patient-centered care and improving satisfaction and outcomes. 5. Examine various aspects of quality improvement in health care and the factors that influence health care quality, including medical errors and patient safety. 6. Analyze motivations, such as poor outcomes, access and cost for health care reform and how they shape current health care reform priorities. 7. Explain implementation of major components of the Affordable Care Act coverage expansion, including changes in Medicaid eligibility, health insurance exchanges, and employer mandates. 8. Develop skills for participating in the policy process to impact change at the local, state, or national levels now and in the future. 9. Personalize the effects of the concepts covered in this course on my health and the health of others. 10. Develop skills to communicate and collaborate effectively with peers.
Fall 2016	Service Learning	<p>Lead group of 10 first year medical students through their service learning longitudinal experience in teaching the “mini med school” curriculum to 4th grade students at Garfield Elementary.</p> <p>Guide medical students as they accomplish the objectives of the course:</p> <ol style="list-style-type: none"> 1. As individuals and as team members, students in this module will critically observe and describe the multiple systems and social determinants that affect and shape the health of their community participants. 2. Students in this module will, with cultural humility and sensitivity, encourage community participants to take an active role in their self-care. 3. Students in this module will reflect verbally and in writing, as an individual and as a team, upon how their community-based learning experiences affect their professional identity formation, self-correcting where needed 4. Students in this module will engage in an advocacy activity on behalf of one or more participants at their community site.

Resident Teaching Responsibilities

Georgetown University - Providence Hospital Family Medicine Residency Program

1. Inpatient Attending

- Seven consecutive days for four weeks in the year.
- Rounded with the residents on approximately 10 patients daily (both inpatient and mom and baby).
- Taught one hour lecture on a relevant topic 3-4 times per week.

2. Clinic Preceptor

- Half day per week precepting residents as they see patients.
- Taught lesson on assigned topic every precepting session.

Curriculum Development

Medical student curriculum - Michigan State University College of Human Medicine

Ultrasound Day in MS3 Family Medicine Clerkship

- Successfully advocated for the inclusion of point of care ultrasound in the medical student curriculum.
- Assisted in creation of the curriculum for this one day workshop held for each Family Medicine Clerkship cohort.
- Taught portions of the curriculum each cohort.

Resident curriculum - Grand Rapids Medical Education Partners Family Medicine Residency

Ultrasound Curriculum

- Successfully advocated for the inclusion of point of care ultrasound in the family medicine residency curriculum.
- Assisted in the creation of this longitudinal curriculum.
- Taught portions of the curriculum.
- Created tools to assess resident competency in specific point of care ultrasound exams and procedures. (See following pages for these checklists.)

Memberships, Service, and Certifications

Professional Memberships:

DC Academy of Family Physicians, Fall 2016 – present
Society of Teachers of Family Medicine, Fall 2015 – present
Institute for Healthcare Improvement, Fall 2010 – present
National Hispanic Medical Association, Summer 2010 – present
American Academy of Family Physicians, Spring 2010 – present
American Medical Association, Fall 2009 – present

Volunteer Service - Community and Professional:

Wellness Advisor, Bilingual Education for Central America, Winter 2017 – present

- Advise on volunteer wellness and burnout prevention plan
- Meet with BECA executive director regarding these plans
- Create curriculum and toolkit to promote volunteer wellness

Chief Resident, GRMEP Family Medicine Resident, Summer 2015 – Summer 2016

- Serve as Junior Clinic Lead
- Organize community service activities
- Address questions and concerns of fellow residents

Member, Trinity Health PNO Risk Management Committee, Fall 2014 – Summer 2016

- Participate in monthly meetings
- Identify and solve safety concerns in the outpatient offices

Member, GREMP Family Medicine Residency Recruitment Committee, Fall 2013 – Summer 2016

- Organize activities with Michigan State University College of Human Medicine
- Interview applicants and participate in forming rank list

Member, GRMEP Family Medicine Curriculum Committee, Fall 2013 – Summer 2016

- Critique and modify the current curriculum
- Develop new curricula

Founder, Family Medicine Journal Club, Fall 2013 – Summer 2016

- Select two articles and organize journal club every four weeks
- Lead discussion of articles

Volunteer, FitKids360, Grand Rapids, MI, Spring 2012 – Summer 2016

- Participate in weekly FitKids360 classes
- Serve as a mentor to FitKids360 families by contacting them and encouraging them along the way

Volunteer, Hispanic Center of Central Michigan, Grand Rapids, MI, Summer 2012 – Fall 2014

- Tutor students in the adult English as a Second Language classes

Interviewer, Bilingual Education for Central America, Fall 2010 – Summer 2016

- Interviewed prospective BECA teachers

- Discuss and decide what candidates would be best to represent BECA as teachers in Honduras

Mentor, Bilingual Education for Central America, Fall 2010 – Summer 2016

- Call former students weekly to provide support during transition to bilingual high school
- Tutor with homework issues via phone or online chats

Certifications

Pediatric Advanced Life Support (PALS)

Advanced Cardiac Life Support (ACLS)

Advanced Life Support in Obstetrics (ALSO) - Instructor

Certification in Electronic Fetal Monitoring (C-EFM)



Resident Name: _____

Supervising Faculty: _____

Date: _____

Ultrasound Guided IV Access Checklist

☐ **Indications and Contraindications** (cognitive test)

☐ **Consent/Timeout as Appropriate**—outline risk, benefits and alternatives (cognitive test)

Item	Completed
1. Checks equipment—ultrasound functioning, gel is placed on probe and probe is inserted into sterile plastic bag	<input type="checkbox"/>
2. Chooses correct IV angiocath catheter size based on indication (14-18 ga for large bore/high volume or blood transfusion vs 20-25ga)	<input type="checkbox"/>
3. Explains transducer marker, relationship to screen and position of typical exam vs. needle localization	<input type="checkbox"/>
4. Chooses site based on indication (AC only for acute large bore infusions)	<input type="checkbox"/>
5. Differentiate vein from artery and measure vessel in 2 directions	<input type="checkbox"/>
Access	
6. Correctly identifies proper site of needle insertion, appropriate angle	<input type="checkbox"/>
7. Appropriately cleans site with alcohol swab or betadine prep	
Longitudinal/Static/In-Plane Approach	
8. Demonstrates Longitudinal approach – good alignment with vein and marker towards catheter insertion site	<input type="checkbox"/>
9. Point out "Ring down artifact".	<input type="checkbox"/>
Transverse/Dynamic/Out-of-place Approach	
10. Describe "walking the probe", explains where needle tip is throughout exam.	<input type="checkbox"/>
11. Demonstrates Transverse approach (advance needle until you see the tip, stop, advance the transducer until you do not see the tip, repeat).	<input type="checkbox"/>
12. Performs venipuncture and upon flash of blood into flash chamber, advances the unit a little further and then advances the Teflon catheter into the vessel while retracting the needle.	<input type="checkbox"/>
13. Tamponades the catheter and attaches the appropriate tubing or lock to the end of the catheter appropriately while maintaining aseptic technique.	<input type="checkbox"/>
14. Secures IV appropriately with tape or bio-occlusive dressing.	<input type="checkbox"/>

☐ **Resident's overall knowledge and skill of central line insertions:** _____

1	2	3	4	5
Deficient		Adequate Skill		Proficient
Unable to complete procedure without significant assistance		Knew essential skills needed to complete procedure		Demonstrated mastery of skills

☐ Performs one of the following autofail criteria:

- Does not assemble equipment or uses inappropriate equipment.
- Does not perform venipuncture appropriately.
- Does not maintain aseptic technique during procedure.



Resident Name: _____

Supervising Faculty: _____

Date: _____

Ultrasound Shoulder Exam Checklist

☐ **Indications and Contraindications** (cognitive test)

☐ **Consent/Timeout as Appropriate**—outline risk, benefits and alternatives (cognitive test)

<u>Item</u>	<u>Completed</u>
15. Checks equipment—ultrasound functioning, correct “exam type” is entered, gel is placed on probe.	<input type="checkbox"/>
16. Explains transducer marker, relationship to screen and position of typical exam vs. needle localization	<input type="checkbox"/>
Anterior Shoulder	
17. Examine Bicep Tendon in 2 views (including dynamic views)	<input type="checkbox"/>
18. Examine Subscapularis Tendon in 2 views (including dynamic views)	<input type="checkbox"/>
19. Explain how pathology would appear (cognitive test)	<input type="checkbox"/>
Lateral Shoulder	
20. Examine Supraspinatus in 2 views (including dynamic views), evaluate for impingement	<input type="checkbox"/>
21. Comment on Subacromial burse	<input type="checkbox"/>
22. Explain how pathology would appear (cognitive test)	<input type="checkbox"/>
Posterior Shoulder	
23. Examine Infrapinatus in 2 views (including dynamic views), evaluate for impingement	<input type="checkbox"/>
24. Examine Glenohumeral Joint (including dynamic views), Identify Glenoid, and Labrum	<input type="checkbox"/>
25. Explain how pathology would appear (cognitive test)	<input type="checkbox"/>
Superior Shoulder	
26. Examine the AC Joint, measure size of joint space (If suspected pathology measure bilateral)	<input type="checkbox"/>
27. Explain how pathology would appear (cognitive test)	<input type="checkbox"/>

☐ **Learner’s overall knowledge and skill of Ultrasound Shoulder Exam:**

1	2	3	4	5
Deficient		Adequate Skill		Proficient
Unable to complete procedure without significant assistance		Knew essential skills needed to complete procedure		Demonstrated mastery of skills

☐ Performs one of the following autofail criteria:

- Does not assemble equipment or uses inappropriate equipment.



Resident Name: _____

Supervising Faculty: _____

Date: _____

Ultrasound Knee Exam Checklist

☐ **Indications and Contraindications** (cognitive test)

☐ **Consent/Timeout as Appropriate**—outline risk, benefits and alternatives (cognitive test)

Item	Completed
28. Checks equipment—ultrasound functioning, correct “exam type” is entered, gel is placed on probe.	<input type="checkbox"/>
29. Explains transducer marker, relationship to screen and position of typical exam vs. needle localization	<input type="checkbox"/>
30. Explain how pathology would appear for each aspect of exam (cognitive test)	<input type="checkbox"/>

Superior Knee

- | | |
|--|--------------------------|
| 31. Examine Quadriceps Tendon in 2 views (including dynamic views) | <input type="checkbox"/> |
| 32. Identify patella, femur, Suprapatellar Fat Pad and bursa | <input type="checkbox"/> |
| 33. Identify & scan cartilage with knee bent >90 deg. | <input type="checkbox"/> |

Medial Knee

- | | |
|--|--------------------------|
| 34. Examine Medial Meniscus w/ & w/o color Doppler | <input type="checkbox"/> |
| 35. Examine Medial Collateral Ligament | <input type="checkbox"/> |

Lateral Knee

- | | |
|---|--------------------------|
| 36. Examine Lateral Meniscus w/ & w/o color Doppler | <input type="checkbox"/> |
| 37. Examine Lateral Collateral Ligament | <input type="checkbox"/> |

Posterior Knee

- | | |
|--|--------------------------|
| 38. Examine Popliteal Fossa | <input type="checkbox"/> |
| 39. Identify Femoral Condyle, Semimembranosus Tendon, Medial Head of Gastrocnemius | <input type="checkbox"/> |
| 40. If present, Bakers Cyst identified and measured. | <input type="checkbox"/> |

☐ **Learner’s overall knowledge and skill of Ultrasound Knee Exam:** _____

1	2	3	4	5
Deficient		Adequate Skill		Proficient
Unable to complete procedure without significant assistance		Knew essential skills needed to complete procedure		Demonstrated mastery of skills

☐ Performs one of the following autofail criteria:

- Does not assemble equipment or uses inappropriate equipment.