

Unlocking the Potential: Point of Care Ultrasound in Primary Care

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Disclosures

- We have no financial disclosures or conflicts of interest to report in relation to this presentation. Our commitment is solely to provide information for the benefit of medical education and practice.



Objectives

- Explore the practical applications of Point of Care Ultrasound (POCUS) in primary care settings.
- Understand the fundamental principles of ultrasound and how they apply to POCUS.
- Familiarize yourself with popular POCUS devices and technologies available on the market.
- Discover strategies and resources for gaining hands-on experience and proficiency with POCUS.



Overview of Point of Care Ultrasound

- What is POCUS?
 - The use of ultrasound technology at the bedside or point of care to perform real-time imaging and assist in clinical decision-making.
 - It is typically used to quickly assess and diagnose conditions in a variety of settings, including emergency, inpatient, and outpatient care.

Citation: Manning, J. (2022). *Point-of-Care Ultrasound in Primary Care: A Review*. Journal of Primary Care & Community Health, 13, 21501319221102672. doi:10.1177/21501319221102672.



Overview of Point of Care Ultrasound

- What are benefits of using POCUS in a primary care setting?
 - Enhanced Diagnostic Accuracy
 - Improved Patient Management
 - Reduced Need for Referrals and Imaging
 - Streamlined Decision-Making
 - Enhanced Patient Safety

Citation: McGowan, J. (2021). *Benefits of Point-of-Care Ultrasound in Primary Care: A Systematic Review*. *Journal of Family Practice*, 70(1), 48-56. doi:10.12788/jfp.0428.



Equipment and Setup

- POCUS Equipment
 - Types of ultrasound machines suitable for primary care
 - Probes and their uses (linear, curvilinear, phased array)
 - Portable vs. stationary systems
- Budget Considerations
 - Cost – effective options for startups
 - Leasing vs. purchasing equipment
- Additional supplies
 - Ultrasound gel
 - Cleaning supplies
 - Storage solutions

Citation: Shen-Wagner J, Deutchman M. Point-of-Care Ultrasound: A Practical Guide for Primary Care. *Fam Pract Manag.* 2020 Nov/Dec;27(6):33-40. PMID: 33169960.

Types of Machines








Types of Machines

- Qualities of POCUS Device
 - Portable, Portable, Portable.
 - Likely will be deployed in different rooms
 - Usually unplanned scenarios
 - Compatible with other technology (your phone, EHR)
 - Adjustable with the skill level
 - Contains the probes that produce the best quality scan for your intended use

Types of Probes

Transducer Type	Phased array	Curvilinear	Linear
Frequency	1-5 MHz	2-5MHz	5-10Mhz
Depth	35cm	30cm	9cm
			Used for DVT diagnosis 
Applications	Heart, lungs, pleura, abdomen	Gallbladder, kidney, liver, bladder, uterus, ovaries, aorta	Arteries, veins, skin, musculoskeletal, testicles, eyes, breast

Typical Setups





Pricing

- Machine
- Probe (s)
- Subscription
- Purchase/rent/lease



Cleaning

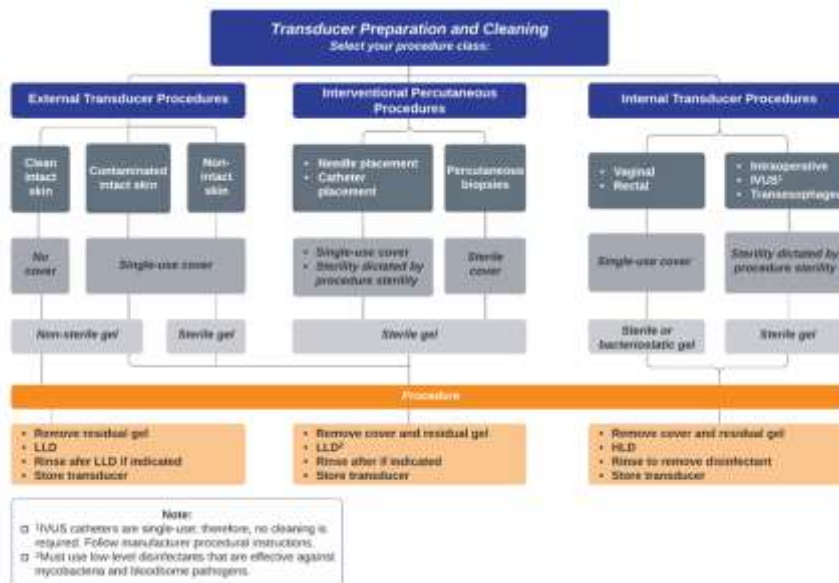
- Ultrasounds = Critical items
 - Confer a high risk for infection if they are contaminated with any microorganism.
 - Manufacturers have guidelines and products for cleaning
 - Sterile and non-sterile single use gels and covers

Cleaning



Cleaning







Education and Training Resources

- Formal Training Programs
- Online Resources
- Textbooks and Literature
- Peer Learning and Mentorship



Education and Training Resources (?Free)

- [Ultrasound at the University of South Carolina School of Medicine YouTube Channel](#). Review most ultrasound scan protocols in under 1 minute with the [One Minute Ultrasound](#) videos, also available as a free app for your smartphone.
- The full list of [SUSME modules](#) is a great resource as well.
- [SonoWorld](#) has lots of great free online lectures, but you will need to create a free account to view them.
- The [Ultrasound Podcast](#) is entertaining and informative. From the same people that brought you the Ultrasound Leadership Academy.
- [Introduction to Bedside Ultrasound](#). A free E-Book for iBooks. From the creators of Ultrasound Podcast.
- The [American Institute of Ultrasound in Medicine \(AIUM\)](#) is the largest multi-disciplinary ultrasound professional organization. They have some good online videos in the member community sections, but you will have to join or create a fee guest account to access them.

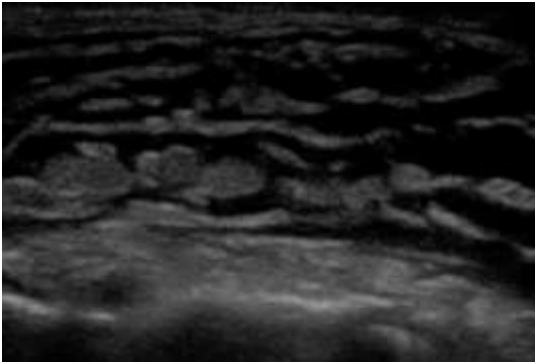
Practical Applications

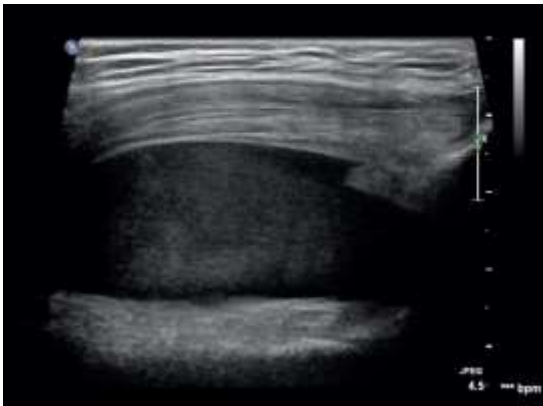
POCUS FOR BEGINNERS

The best procedures for point-of-care ultrasound (POCUS) beginners are impactful for the patient, easy to perform (require a small number of quickly obtained views), simple to interpret (limited diagnostic endpoints), and low liability for patient and physician.

Tissue/system	Learn this first	Then proceed to	Transducer type
Skin and soft tissue	Cellulitis vs. abscess	Lumps and bumps	High frequency
Musculoskeletal	Knee effusions	Needle guidance	High frequency
Pelvis and obstetrics	Bladder obstruction	Intrauterine pregnancy labor and delivery	Low frequency
Abdomen	Abdominal ascites	Hydronephrosis	Low frequency
Chest	Pleural effusion	Pulmonary edema	Low frequency

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Questions?

Demonstration