

# Point-of-Care Ultrasound Guidance

## Understanding Point-of-Care Ultrasound (POCUS)

Point-of-care ultrasound (POCUS) describes situations where physicians perform ultrasounds at the point of care. Care locations are expanding to include in-home, nursing homes, and other non-traditional locations. Within a hospital, physicians perform POCUS bedside, often in the emergency department.

**Note:** The physician is most often performing the exam in this setting. However, confirmation of the performing user is recommended to optimize workflow with Studycast.

POCUS studies provide rapid turnaround of test results and quicker treatment plans. Physicians can perform POCUS imaging on, but not limited to:

- Standard cart equipment.
- Portable units.
- Mobile ultrasound devices, like a cell phone or tablet probe.

## Performing and Approving Users

Action	User	Required Credentials
Performed by	Physician	MD or DO
Read by	Physician	MD or DO

The two recommended pathways for clinicians to become proficient in Emergency Ultrasound (EUS):

- Part of an American College for Graduate Medical Education-approved Emergency Medicine (EM) residency. This is how most EM physicians get EUS training.
- A practice-based pathway. This path is for practicing EM physicians or clinicians who did not receive training during residency.<sup>1</sup>

EUS faculty can also train advanced practice providers like nurse practitioners.

## Facility Types

The most common facilities where physicians perform POCUS studies are:

- Hospitals
- Emergency Departments
- Critical Care
- Labor and Delivery

## Studycast POC Worksheets

Like all Studycast worksheets, physicians can use POCUS worksheets on any device. Studycast POCUS worksheets accommodate interaction on tablets or other mobile devices. Findings and conclusions are below the observations to allow vertical scrolling assuming a portrait orientation of the mobile device. The worksheets use button groups instead of dropdowns for documenting observations. The worksheet content meets American College of Emergency Physicians (ACEP) guidelines about the documentation of:

- Views acquired.
- Required and recommended findings
- Interpretation summary

Each POCUS worksheet has:

- A Views section that displays as a grid on the final report.
- A Findings section that generates finding statements from the documented observations.
- An Interpretation section that generates conclusion statements from the documented observations.

The Studycast POCUS worksheets' default state includes observations that are set to normal selections for all image views and findings which are required to be documented on the given exam, per ACEP guidelines.<sup>1</sup>

### Protocol

Some POCUS studies have protocols to adjust the worksheet for different imaging techniques. Observation items change when selecting a different protocol.

### Reports

Reports meet the requirements from ACEP.

## Interface Considerations

### ADT HL7 Messages

Emergency rooms prefer encounter-based workflows over orders-based workflows. In an encounter-based workflow, ADT messages generate when admitting or registering a patient. ADT messages hold patient demographics but do not have order or appointment information. Studycast supports an encounter-based workflow.

### Modality Worklist (MWL): Encounter-based workflow

MWL entries generated from ADT messages triggered by admissions support an encounter-based workflow. This is useful in POCUS because these are time-sensitive exams without orders.

It is common to perform more than one POCUS on a patient at the same time. For example, a woman experiencing right-lower quadrant abdominal pain might get both:

- A focused pelvic ultrasound to check for an ovarian cyst
- A focused bowel ultrasound for appendicitis.

In this case, encounter-based workflow supports a MWL entry (created from the ADT) and allows the performing user to select the patient from the MWL (rather than entering patient demographic information on the modality), perform the scans (both focused pelvic and focused bowel) and the single exam is then transmitted to Studycast.

The physician can then quickly split the study into individual exams with the Split Study batch action in Studycast and document each exam. Upon approval both results are routed to the EMR.

## Quality Assurance (QA)

### QA Workflow

QA workflow lets senior or credentialed physicians review studies. Reviewers can attest to the image or interpretation quality of performing physicians. The default QA questions are ACEP-recommended. Common reasons to use the QA workflow include:

- The performing physician may not have the credentials required to be the approver of an exam.
- A credentialed performing physician is being reviewed to prove continued competency.

The QA workflow can be enabled at the client or division level. When enabled, the QA Group field shows in Study Properties. The list of available QA groups is the same as the Reading Group list, from the Studycast account. All members of a QA Group have access to complete the QA for a study.

Any study with a defined QA Group will have the QA tab enabled. This QA tab holds the QA questions that the client defined as needed for a QA review. The tab becomes inactive after completing the attestation.

### QA Admins & the QA Dashboard

Users with the QA Admin permission have access to the QA page in Studycast. The QA Admin permission, allows users to:

- Access the QA worksheet tab.
- Reset the QA tab for a worksheet allowing modifications or new attestation of the QA review.
- View the QA Dashboard.

The QA Dashboard contains:

- List of users who require QA review.
- Review questions and results.
- The ability to filter by user, QA questions, and results.

## Demo Path

**Note:** Confirm that the facility needs QA first. If the ED or POC for this facility does not need QA, omit this part of the orientation or training.

Remember when training, walk the client through the Demo Path Script first. This script provides an overview of the functionality of the POCUS product offering.

### Demo Path

For POC workflow in an ED, when admitting a patient, Studycast receives the ADT message and builds a MWL item. This means there is no need to enter patient demographics on the imaging device. Instead, select the patient from the MWL on the imaging device and begin the exam.

Then, at the bedside, get the needed images for the exams. These images are immediately available in Studycast.

On a PC, open the worksheet to document the exam. Go straight to the worksheet since you just took the images. The information needed to document the exam is visible in the worksheet.

The blue observation selections are for the observations that ACEP requires for documentation. The blue selections show observations are normal.

**Note:** If a client regularly documents other fields not included in the defaults, we can update the defaults to match the client's protocol.

If it is a normal exam, make two selections, and the approved exam routes to the EMR. The exam is now billable.

*[Show the process while explaining.]*

If the approving person is not credentialed for this study, the exam routes to the attending's queue. The attending provides the second approval and the exam routes to the EMR.

Studycast provides default ACEP-compliant questions to the users who perform QA to attest to exam quality. Users can also add custom questions.

*[Show the QA tab. Have samples to show.]*

Approving and verifying physicians can both receive a notification with the QA results.

Users responsible for tracking QA results have access to the QA dashboard. The QA Admin permission controls access to the QA dashboard. The QA dashboard has the QA results and can track the number of completed exams. Users can view or download all data from the QA dashboard as a PDF or a CSV file.

## Further Demonstration and Training

Demonstrated above is how easy it is for a user to document a normal exam. Ensure that the user understands that the default normal values are present for a normal exam. Explain that approval can happen with a couple of clicks on a normal exam. Show how to document abnormal observations. Update the Findings and Conclusions to reflect these modifications.

On the demo account, apply a Preset Favorite. Explain that Preset Favorites can document common abnormalities. Generate the Findings and Conclusions. Show how the statements update from the selections. Open the report to show the Views grid, as well as the Finding and Conclusion statements.

If demoing the QA workflow:

1. Log in as a reading physician who is part of the QA Group assigned to a study.
2. Navigate to the QA tab.
3. Show answering the QA questions and attesting to the QA.
4. Log in as a user with the QA Admin permission to view the QA Dashboard.
5. Show the columns that display, including the answers to the QA questions.
6. Show filtering by approving users.

## SWOT Analysis

Strengths	Weaknesses
<ol style="list-style-type: none"><li>1. Professional-appearing reports based on ACEP guidelines.</li><li>2. Support ADT MWL &amp; Encounter-based Workflow</li><li>3. QA Workflow Support</li><li>4. Initial feedback from KOLs in space indicate Studycast provides all workflow needs with a very user-friendly interface.</li></ol>	<ol style="list-style-type: none"><li>1. Currently no clients in this space.</li></ol>
Opportunities	Threats
<ol style="list-style-type: none"><li>1. Efficient reporting provides the ability to bill for exams performed in the ED that may currently not be generating income for the hospital.</li></ol>	<ol style="list-style-type: none"><li>1. Clients using a device that is manufactured by a vendor that also sells software might choose to use that software instead (ex: Butterfly or Clarius).</li><li>2. QPath, solutions from Philips and GE, Butterfly are more well known.</li></ol>

## References

1. American College of Emergency Physicians. (April, 2023). *Ultrasound Guidelines: Emergency, Point-of-care, and Clinical Ultrasound Guidelines in Medicine*.  
<https://www.acep.org/siteassets/new-pdfs/policy-statements/ultrasound-guidelines--emergency-point-of-care-and-clinical-ultrasound-guidelines-in-medicine.pdf>