

CLINICAL OBSTACLES TO MACHINE-LEARNING POCUS ADOPTION & SYSTEM-WIDE AI IMPLEMENTATION (The COMPASS-AI survey)



Section A: Demographics and Background

Clinical Obstacles to Machine-learning POCUS Adoption and System-wide AI Implementation (COMPASS-AI) Survey

Exploring Barriers to AI/ML Adoption in ICU POCUS

Which region do you practise in?

- ☐ Europe
- ☐ North America
- ☐ Central America
- ☐ South America
- ☐ Asia
- ☐ Middle East
- ☐ Australia/Oceania
- ☐ Other (please specify)

Other (please specify)

Which is your main specialty?

- ☐ Intensive care
- ☐ Emergency medicine
- ☐ Internal medicine
- ☐ Surgical
- ☐ Radiology
- ☐ Medical Student
- ☐ Other

Other, please specify

What type of hospital do you work in?

- ☐ University teaching hospital
- ☐ University affiliated hospital
- ☐ General hospital
- ☐ Other

Other, please specify

What is your primary role in the department?

- ☐ Attending Physician (Consultant)
- ☐ Fellow / Resident / Trainee
- ☐ Nurse
- ☐ Physician Assistant / Nurse Practitioner
- ☐ Medical Student
- ☐ Administrator / Manager
- ☐ Other, please specify

Other, please specify:

How many years have you worked in healthcare?

- ☐ Less than 1 year
- ☐ 1-5 years
- ☐ 6-10 years
- ☐ More than 10 years

How frequently do you use or interpret POCUS?

- ☐ Multiple times per day
- ☐ Several times per week
- ☐ About once per week
- ☐ Less than once per week
- ☐ Never

How familiar are you with the concept of AI/ML in your daily life?

- ☐ Very familiar (routinely use AI tools e.g. ChatGPT, GEMINI, Siri)
- ☐ Somewhat familiar (have read about it, use it occasionally or seen demonstrations)
- ☐ Slightly familiar (have heard about it, but minimal exposure)
- ☐ Not at all familiar

How familiar are you with the concept of AI/ML in healthcare (not necessarily in POCUS)?

- ☐ Very familiar (routinely use or study AI in some aspect of practice)
- ☐ Somewhat familiar (have read about it or seen demonstrations)
- ☐ Slightly familiar (have heard about it, but minimal exposure)
- ☐ Not at all familiar

Have you ever used an AI- or ML-assisted tool in any area of patient care?

- ☐ Yes
- ☐ No

Please specify the type of AI/ML tool you have used:

Section B: Perceived Utility and Clinical Integration

Please indicate your level of agreement with the following statements.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
AI/ML-assisted POCUS could improve the speed of diagnosis in the ICU.	☐	☐	☐	☐	☐
AI/ML-assisted POCUS would help improve the accuracy of my ultrasound interpretations.	☐	☐	☐	☐	☐
Integrating AI/ML into my current POCUS workflow would be relatively seamless.	☐	☐	☐	☐	☐
AI/ML-assisted POCUS could reduce inter-operator variability in ultrasound interpretation.	☐	☐	☐	☐	☐
I would feel more confident in my clinical decisions if I had access to AI/ML-assisted interpretations.	☐	☐	☐	☐	☐

Section C: Technological and Training Barriers

Please indicate your level of agreement with the following statements.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I have sufficient training to use AI/ML-assisted ultrasound tools effectively.	☐	☐	☐	☐	☐
Available training resources (e.g., workshops, online modules) are adequate to learn AI/ML-enhanced POCUS.	☐	☐	☐	☐	☐
A lack of standardized training or credentialing for AI/ML in POCUS is a significant barrier.	☐	☐	☐	☐	☐
Insufficient local expertise or technical support hinders the adoption of AI/ML-assisted POCUS.	☐	☐	☐	☐	☐

Section D: Trust, Accuracy, and Reliability Concerns

Please indicate your level of agreement with the following statements.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I trust AI/ML algorithms to provide accurate ultrasound interpretations.	☐	☐	☐	☐	☐
I am concerned that AI/ML errors could lead to incorrect diagnoses or treatments.	☐	☐	☐	☐	☐
I would want to verify every AI/ML-generated finding with my own interpretation before making a clinical decision.	☐	☐	☐	☐	☐
The "black box" nature (lack of explainability) of AI/ML outputs reduces my trust in them.	☐	☐	☐	☐	☐
Regulatory approval and strong evidence validating AI/ML tools would increase my willingness to use them	☐	☐	☐	☐	☐

Section E: Workflow and Resource Barriers

Please indicate your level of agreement with the following statements.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Implementing AI/ML in POCUS would slow down my workflow.	☐	☐	☐	☐	☐
The cost of acquiring and maintaining AI/ML-enabled ultrasound machines is prohibitive.	☐	☐	☐	☐	☐
Integration of AI/ML outputs into the health records (patient notes) is insufficient or too complex.	☐	☐	☐	☐	☐
Additional technical support or staff would be required to effectively utilize AI/ML in POCUS.	☐	☐	☐	☐	☐

Section F: Legal, Ethical, and Cultural Barriers

Please indicate your level of agreement with the following statements.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Concerns about liability if AI/ML-assisted interpretations are incorrect discourage me from using these tools.	☐	☐	☐	☐	☐
Data privacy and security concerns about patient information used to train AI systems are significant barriers	☐	☐	☐	☐	☐
A lack of clear institutional or professional guidelines on AI/ML use in POCUS makes me hesitant to adopt it.	☐	☐	☐	☐	☐
Cultural resistance to new technology among colleagues or leadership in my ICU inhibits the introduction of AI/ML tools.	☐	☐	☐	☐	☐
Official endorsements or recommendations by professional societies would make me more willing to adopt AI/ML-assisted POCUS.	☐	☐	☐	☐	☐

Section G: Overall Perceptions and Open-Ended Feedback	☐ Strongly disagree
Overall, I am enthusiastic about the potential role of AI/ML in improving POCUS practice.	☐ Disagree
	☐ Neutral
	☐ Agree
	☐ Strongly agree

In your opinion, what is the single greatest barrier to adopting AI/ML-assisted POCUS in your department?	☐ Training & Education
	☐ Clinical Validation & Evidence
	☐ Workflow Integration & Usability
	☐ Trust & Transparency
	☐ Cost & Accessibility
	☐ Peer & Institutional Support
	☐ Legal & Ethical Considerations
	☐ Other

Other (please specify)	
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Do you have any additional comments or suggestions regarding AI/ML integration into POCUS in healthcare?	
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If you would like to be kept updated on the results of the survey or be open to possible future collaborations, please leave your email here.	
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