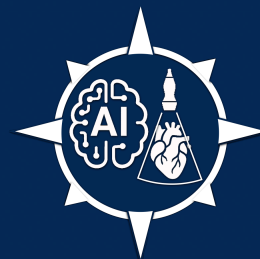


CLINICAL OBSTACLES TO MACHINE-LEARNING POCUS ADOPTION & SYSTEM-WIDE AI IMPLEMENTATION (The COMPASS-AI survey)



Which region do you practise in?		
EUROPE	380	32,9%
NORTH AMERICA	234	20,3%
SOUTH AMERICA	74	6,4%
ASIA	263	22,8%
AUSTRALIA/OCEANIA	97	8,4%
AFRICA	1	0,1%
CENTRAL AMERICA	38	3,3%
MIDDLE EAST	37	3,2%
Other	30	2,6%
Total	1154	100,0%

Which is your main specialty?		
Emergency medicine	281	24,5%
Intensive care	730	63,5%
Internal medicine	50	4,4%
Radiology	6	0,5%
Surgical	5	0,4%
Medical student	4	0,3%
Other	73	6,4%
Total	1149	100,0%

What type of hospital do you work in?	
University teaching hospital	572
General hospital	462
University affiliated hospital	61
Other	55
Total	1150

What is your primary role in the department?	Other, please specify:	
Attending Physician (Consultant)	548	48,4%
Fellow / Resident / Trainee	544	48,0%
Nurse	8	0,7%
Administrator / Manager	12	1,1%
Other, please specify	21	1,9%
Total	1133	100,0%

How many years have you worked in healthcare?		
1-5 years	193	16,9%
6-10 years	337	29,5%
More than 10 years	612	53,6%
Total	1142	100,0%

How frequently do you use or interpret POCUS?		
Never	18	1,6%
Less than once per week	43	3,7%
About once per week	39	3,4%
Several times per week	448	38,9%
Multiple times per day	603	52,4%
Total	1151	100,0%

How familiar are you with the concept of AI/ML in your daily life?		
Not at all familiar	56	4,9%
Slightly familiar (have heard about it, but minimal exposure)	159	13,8%
Somewhat familiar (have read about it, use it occasionally or seen demonstrations)	404	35,0%
Very familiar (routinely use AI tools e.g. ChatGPT, GEMINI, Siri)	535	46,4%
Total	1154	100,0%

How familiar are you with the concept of AI/ML in healthcare (not necessarily in POCUS)?		
Not at all familiar	78	6,8%
Slightly familiar (have heard about it, but minimal exposure)	265	23,0%
Somewhat familiar (have read about it or seen demonstrations)	633	54,9%
Very familiar (routinely use or study AI in some aspect of practice)	176	15,3%
	1152	100,0%

Have you ever used an AI- or ML-assisted tool in any area of patient care?		
Yes	260	22,6%
No	891	77,4%
	1151	100,0%

AI/ML-assisted POCUS could improve the speed of diagnosis in the ICU.		
Strongly disagree	6	0,6%
Disagree	20	1,9%
Neutral	254	23,6%
Agree	582	54,2%
Strongly agree	212	19,7%
	1074	100,0%

AI/ML-assisted POCUS would help improve the accuracy of my ultrasound interpretations.		
Strongly disagree	18	1,7%
Disagree	100	9,3%
Neutral	265	24,7%
Agree	495	46,0%
Strongly agree	197	18,3%
	1075	100,0%

Integrating AI/ML into my current POCUS workflow would be relatively seamless.		
Strongly disagree	17	1,6%
Disagree	134	12,5%
Neutral	271	25,2%
Agree	475	44,2%
Strongly agree	177	16,5%
	1074	100,0%

AI/ML-assisted POCUS could reduce inter-operator variability in ultrasound interpretation.		
Strongly disagree	5	0,5%
Disagree	18	1,7%
Neutral	97	9,0%
Agree	610	56,7%
Strongly agree	345	32,1%
	1075	100,0%

I would feel more confident in my clinical decisions if I had access to AI/ML-assisted interpretations.		
Strongly disagree	22	2,0%
Disagree	87	8,1%
Neutral	268	24,9%
Agree	453	42,1%
Strongly agree	245	22,8%
	1075	100,0%

I have sufficient training to use AI/ML-assisted ultrasound tools effectively.		
Strongly disagree	98	9,3%
Disagree	506	48,1%
Neutral	314	29,8%
Agree	102	9,7%
Strongly agree	33	3,1%
	1053	100,0%

I am concerned that AI/ML errors could lead to incorrect diagnoses or treatments.		
Strongly disagree	5	0,5%
Disagree	62	6,0%
Neutral	406	39,4%
Agree	457	44,4%
Strongly agree	100	9,7%
	1030	100,0%

I would want to verify every AI/ML-generated finding with my own interpretation before making a clinical decision.		
Strongly disagree	3	0,3%
Disagree	53	5,1%
Neutral	214	20,8%
Agree	511	49,6%
Strongly agree	249	24,2%
	1030	100,0%

The 'black box' nature (lack of explainability) of AI/ML outputs reduces my trust in them.		
Strongly disagree	14	1,4%
Disagree	129	12,5%
Neutral	455	44,2%
Agree	347	33,7%
Strongly agree	85	8,3%
	1030	100,0%

Regulatory approval and strong evidence validating AI/ML tools would increase my willingness to use them		
Strongly disagree	2	0,2%
Disagree	10	1,0%
Neutral	128	12,4%
Agree	473	45,9%
Strongly agree	417	40,5%
	1030	100,0%

Implementing AI/ML in POCUS would slow down my workflow.		
Strongly disagree	59	5,8%
Disagree	441	43,0%
Neutral	365	35,6%
Agree	137	13,4%
Strongly agree	23	2,2%
	1025	100,0%

The cost of acquiring and maintaining AI/ML-enabled ultrasound machines is prohibitive.		
Strongly disagree	20	2,0%
Disagree	303	29,6%
Neutral	441	43,0%
Agree	173	16,9%
Strongly agree	88	8,6%
	1025	100,0%

Integration of AI/ML outputs into the health records (patient notes) is insufficient or too complex.			
Strongly disagree	25	2,4%	
Disagree	386	37,7%	
Neutral	423	41,3%	
Agree	147	14,3%	
Strongly agree	44	4,3%	
	1025	100,0%	

Additional technical support or staff would be required to effectively utilize AI/ML in POCUS.		
Strongly disagree	34	3,3%
Disagree	256	25,0%
Neutral	368	35,9%
Agree	299	29,2%
Strongly agree	68	6,6%
	1025	100,0%

Concerns about liability if AI/ML-assisted interpretations are incorrect discourage me from using these tools.		
Strongly disagree	34	3,4%
Disagree	282	28,1%
Neutral	399	39,8%
Agree	241	24,0%
Strongly agree	47	4,7%
	1003	100,0%

Data privacy and security concerns about patient information used to train AI systems are significant barriers		
Strongly disagree	100	10,0%
Disagree	410	40,9%
Neutral	291	29,0%
Agree	154	15,4%
Strongly agree	48	4,8%
	1003	100,0%

A lack of clear institutional or professional guidelines on AI/ML use in POCUS makes me hesitant to adopt it.		
Strongly disagree	14	1,4%
Disagree	59	5,9%
Neutral	123	12,3%
Agree	369	36,8%
Strongly agree	438	43,7%
	1003	100,0%

Cultural resistance to new technology among colleagues or leadership in my ICU inhibits the introduction of AI/ML tools.		
Strongly disagree	40	4,0%
Disagree	194	17,0%
Neutral	331	33,0%
Agree	319	31,8%
Strongly agree	120	12,0%
	1004	97,7%

Official endorsements or recommendations by professional societies would make me more willing to adopt AI/ML-assisted POCUS.		
Strongly disagree	33	3,3%
Disagree	104	10,4%
Neutral	276	27,5%
Agree	375	37,4%
Strongly agree	214	21,4%
	1002	100,0%

Section G: Overall Perceptions and Open-Ended Feedback	Overall, I am enthusiastic about the potential role of AI/ML in improving POCUS practice.		
Strongly disagree		31	3,1%
Disagree		24	2,4%
Neutral		135	13,4%
Agree		542	54,0%
Strongly agree		272	27,1%
		1004	100,0%

In your opinion, what is the single greatest barrier to adopting AI/ML-assisted POCUS in your department?		
Training & Education	271	27,1%
Clinical Validation & Evidence	175	17,5%
Workflow Integration & Usability	66	6,6%
Trust & Transparency	74	7,4%
Cost & Accessibility	134	13,4%
Peer & Institutional Support	168	16,8%
Legal & Ethical Considerations	54	5,4%
Other	59	5,9%
	1001	100,0%