



ABSTRACTS IN URGENT CARE

Editor's Note: This month's Abstracts department focuses exclusively on research that examines artificial intelligence in healthcare.

AI-Assisted Professional Development

Take Home Point: When paired with skilled facilitation, professional development programs supported by artificial intelligence (AI) can enhance engagement, foster reflective practice, and promote immediate application of interactive strategies in diverse teaching settings.

Citation: Hou S-I. Enhancing interactive teaching for the next generation of nurses: generative-AI-assisted design of a full-day professional development workshop. *Informatics*. 2026;13(1):11. doi:10.3390/informatics13010011

Relevance: Engaging the next generation of clinicians (Generation X, Y, and Z) can present a challenge for educators and clinical leaders, as today's learners may have shorter attention spans, extensive mobile phone use, and under-developed communication skills.

Study Summary: This study described the design, implementation, and participant outcomes of a full-day interactive teaching workshop for nursing faculty, senior clinical nurses, and nurse leaders in Taiwan. AI was used as a planning assistant emphasizing whole-class interactivity, with frequent short, focused activities to sustain energy and attention. The workshop aimed to develop participants' ability to: recognize generational differences in learning styles; engage in and practice interactive teaching methods; and apply these strategies in their instructional settings.

AI tools such as ChatGPT-5.2 were used during workshop planning to augment instructional creativity and efficiency. AI applications included developing an emoji introduction icebreaker, generating prompts for generational discussions, designing questions for a think-pair-share activity, designing questions for Socratic questioning (open-ended

questions to stimulate critical thinking), drafting a realistic fishbowl group discussion (observe and analyze a structured group discussion), and role-play scenarios situated in clinical teaching contexts.

Participants (N=37) were predominantly female (95%) and represented multiple generations, including Generation X, Millennials (Generation Y), and Generation Z. The experiential and highly engaging strategies were perceived as particularly effective for sustaining attention, stimulating critical thinking, and fostering confidence in applying interactive teaching methods.

Editor's Comments: The single-center setting, small sample size, and nursing participants may limit the generalizability of the results to other settings. The study also lacked longitudinal follow-up data to determine whether learning from the session was retained and applied in practice. However, the findings indicate that using a variety of learning techniques and incorporating AI into the educational process may help improve engagement among the next generation of healthcare workers, potentially including urgent care clinicians. ■

Can AI Substitute the First Reader in Chest Radiograph Screening?

Take Home Point: AI could potentially assume the first-reader role in lung cancer screening with chest radiographs within a conventional double-reading workflow while maintaining diagnostic quality.

Citation: Yoshida K, Takamatsu A, Tanaka R, et al. Can AI substitute the first reader in chest radiograph screening? A retrospective non-inferiority evaluation. *Jpn J Radiol*. 2026;44:1168-1176. doi:10.1007/s11604-026-01973-z

Relevance: Chest radiography (CXR) is a simple and accessible screening and diagnostic tool for many thoracic diseases and is typically interpreted manually by clinicians.

Study Summary: This retrospective study evaluated whether AI software could substitute for the first reader within the conventional double-reading workflow used for chest radiograph-based cancer screening in a Japanese



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ting. Three AI models developed by LPIXEL Inc. (Tokyo, Japan) were assessed. Software A was trained specifically for pulmonary nodule detection, with particular emphasis on sensitivity. Software B was derived from Software A and retrained to reduce false-positive detections while preserving nodule sensitivity. Software C was trained to detect lung opacities, including nodules, interstitial changes, consolidations, atelectasis, granular opacities, and cavitary lesions. CXRs from an available database that had already been assessed by a screening physician followed by a board-certified radiologist were reviewed using the AI tools.

The study included 5,784 normal CXRs and 1,847 CXRs identified as positive for cancer. All 3 AI models demonstrated noninferior performance compared with the first readers, with all AI programs showing higher detection rates (AI, 62.5%–77.3%; first readers, 59.3%). The frequency of false-positive detections per examination was higher with AI (0.081 for Software A, 0.065 for Software B, 0.147 for Software C) compared with the screening physicians serving as first readers (0.002).

Editor's Comments: As with many current AI studies, the methodology has limitations for real-world, real-time implementation. Because some cases had already been identified as positive, the findings may not fully reflect screening performance across an entire routine-care population. In urgent care practice, validated similar AI systems could potentially support clinicians in rapidly diagnosing selected conditions, such as lung pathology and extremity fractures, thus improving clinical workflows. ■

Application of AI in Occupational Healthcare

Take Home Point: Clear, actionable guidance is needed on how to respond to AI outputs, such as predictions about future sick leave, when AI is used in occupational healthcare (OH).

Citation: Tijhuis MT, Bosma AR, van den Hoven M, et al. Attitudes, needs, and expectations regarding the application of AI in occupational healthcare: a multiple stakeholder perspective. *J Occup Environ Med.* 2026;68(5):353-360. doi:10.1097/JOM.0000000000003636

Relevance: The adoption of AI in healthcare is increasing. This study explored the current attitudes, needs, and expectations of employees, employers, and occupational healthcare practitioners (OHPs) regarding the application of AI in occupational healthcare.

Study Summary: This qualitative study used interviews to explore the perspectives of different stakeholder groups on the application of AI in occupational healthcare in the Netherlands. Participants included employees who were and were not on sick leave, human resources employees representing employers, and various OHPs. Semistructured interviews were conducted at an occupational healthcare service's office, through Microsoft Teams, or by telephone. Thematic analysis was used to analyze the collected data.

A total of 23 interviews were conducted with 8 employees (4 on sick leave and 4 not on sick leave), 7 employers, and 8 OHPs. Several themes were identified. Participants expressed skepticism about the feasibility of using AI because it lacks a human touch. Unfamiliarity with AI contributed to reserved attitudes and a perceived need for transparency and explainability, particularly regarding the use of personal data. Potential benefits included improved efficiency of OHPs and enhanced quality of care through more effective delivery of services to employees. Participants also emphasized the need for clarity about how AI-generated outcomes could be translated into actions for health-related purposes.

Editor's Comments: The study has the potential for selection bias because individuals with an interest in AI may have been more inclined to participate. The small number of participants from a single occupational healthcare service in the Netherlands may limit generalizability. The study highlights the potential use of AI in urgent care centers that serve occupational health clients, where AI tools may eventually help predict work-related illness/injury outcomes and associated impact. At present, such applications have ethical and legal implications that may need to be resolved before widespread use. ■

AI-Enhanced Auscultation for Valvular Heart Disease

Take Home Point: The AI-enhanced valvular heart disease (VHD) Detector shows promise as a screening tool for acquired VHD, potentially enabling timely referral of patients with moderate or severe VHD who warrant additional evaluation.

Citation: McDonald A, Gales M, Rana BS, et al. Development and validation of AI-enhanced auscultation for valvular heart disease screening through a multi-centre study. *NPJ Cardiovasc Health.* 2026;3:5. doi:10.1038/s44325-026-00103-y

Relevance: VHD is a common cause of heart failure but is often identified late because of delayed symptom onset, limited public awareness, and the low sensitivity of traditional stethoscope-based screening.

Study Summary: This was a prospective, single-arm, single-blinded cohort study investigating a novel AI algorithm that used electronic stethoscope recordings to detect clinically significant degenerative VHD. Participants were recruited consecutively from 3 primary care clinics in the United Kingdom and were at risk for or had known cardiovascular disease but had no prior diagnosis of VHD or known cardiac murmur. All patients underwent auscultation with an electronic stethoscope performed by a cardiologist, cardiac physiologist, or research nurse. Heart sounds were recorded at the 4 standard auscultation locations: aortic, pulmonary, tricuspid, and mitral sites. Recordings were analyzed by an AI algorithm trained using echocardiographic findings rather than conventional murmur labels. For comparison with human performance, family medicine doctors (general practitioners [GPs]) also assessed the recordings. Additionally, an independent expert panel reviewed the phonocardiogram recordings to confirm audible murmurs. For diagnosis, every participant underwent echocardiography by certified technicians.

A diverse dataset of 1,787 patients was developed combining stethoscope recordings and echocardiographic labels. The VHD Detector achieved an area under the receiver operating characteristic curve of 0.83 (95% confidence interval [CI], 0.79–0.88) for identifying clinically significant VHD. It had a sensitivity of 72% (95% CI, 65%–79%) and specificity of 82% (95% CI, 74%–89%). GPs achieved a sensitivity of 62% (95% CI, 55%–70%) and specificity of 64% (95% CI, 54%–73%). The VHD Detector significantly outperformed GP predictions in both sensitivity ($p=0.01$) and specificity ($p=0.002$), highlighting its potential as a screening tool.

Editor's Comments: The authors acknowledge that their selective dataset may limit generalizability. There was also intentional bias in the recruitment of cases to train the AI tool (selection from hospital settings, cardiology and valvular clinics). The lack of direct access to patients (use of recordings) by the GPs may also have influenced the performance comparison. This study may have several applications for urgent care clinicians. This or similar AI tools may potentially serve as rapid, noninvasive screening adjuncts and may help with timely identification of patients with moderate or severe VHD who need further evaluation. ■

Can AI Help Smokers Quit?

Take Home Point: AI chatbot responses about smoking cessation demonstrated high accuracy and moderate readability, suggesting AI may have a role as an adjunct to patient education in primary care.

Citation: Tuz C, Merder D, Unal BU, et al. Assessing AI-generated smoking cessation advice for patient education in primary care. *BMC Prim Care*. 2026;27(1):206. doi:10.1186/s12875-026-03360-z

Relevance: Clinicians can all play a role in smoking cessation education and counseling; however, clinician interventions remain underused due to inadequate education, limited resources, and time constraints during patient encounters. AI programs may help fill that gap.

Study Summary: This was a cross-sectional assessment of AI-generated responses related to smoking cessation conducted in Turkey using 10 common AI tools. The authors utilized 24 open-ended questions, which were asked in Turkish, using a standardized prompt to initiate conversations with AI search engines and chatbots. Researchers started a new session for each AI program to reduce potential bias from previous context. All 24 questions were entered into each AI system, and the responses were recorded. Responses were assessed using a rubric-based method across 4 areas: readability, reliability, accuracy, and communication abilities.

All AI programs understood and provided answers to the 24 open-ended questions. The internal consistency of the 24-question accuracy rubric was excellent (Cronbach's $\alpha=0.975$; standardized $\alpha=0.980$). Accuracy differed significantly across platforms (Friedman chi-square=155.92, $p<0.001$), with a large effect size (Kendall's $W=0.72$). All AI platforms provided at least partially correct answers to all questions.

Editor's Comments: The study was limited by the use of the Turkish language to collect responses from the AI programs, which may limit the generalizability to other languages and settings. Potential applications for urgent care clinicians include using AI tools to provide individualized smoking cessation guidance, integrating AI with other patient-centered tools to support behavior change, and providing educational support. These AI tools could be utilized during waiting periods at busy urgent care centers. ■