



Clinician of the future attitudes toward AI

November 2024

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Elsevier's Clinician of the Future Programme

2022

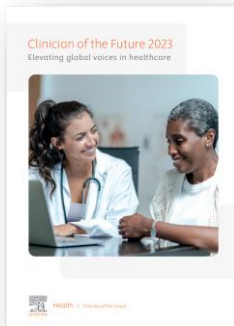


- **Online survey of 2,838** clinicians in 111 countries.
- **KOL roundtables** in China, USA & UK.

Themes:

- Impact of Covid-19
- Digital Health Technologies
- Evolving Skillsets
- Health inequity

2023



- **Online survey** completed by **2,607** clinicians in 116 markets.

Themes:

- Value-based care
- Patient empowerment
- Telehealth
- Generative AI
- Climate sustainability
- SDOH

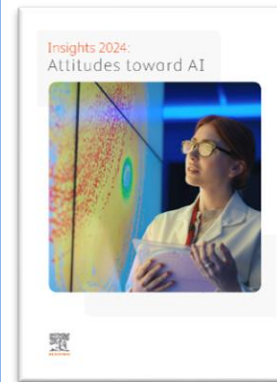


- **Online survey** with **2,212 medical & nursing students** across 91 markets.
- **Roundtables** with academic leaders in the US & UK.

Themes:

- Career outlook
- Patient expectations
- Future of healthcare
- Generative AI

2024



- Launched July 2024
- Entirely focused on AI
- 1,007 clinicians from 85 countries

AI Themes:

- Usage in clinical practice
- Perceptions & future expectations
- Current preparations & gaps in the clinical setting

Key Themes

- 1. Awareness & usage** of AI tools is low, with expectations that this will grow
 - Clinical institutions have not yet clearly conveyed their AI usage restrictions, or their preparations for increased usage of AI
- 2. Attitudes are mixed**, but more positive than negative
- 3. Use cases for AI** are well supported
- 4. Quality controls** need to be in place

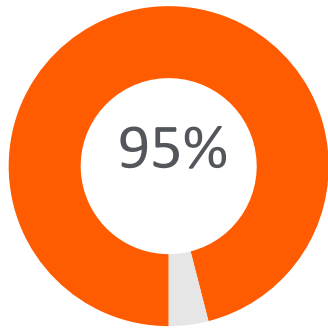
Theme 1: Awareness & usage is low, but expected to grow



**“AI is the future,
but it is also
very worrying.”
Doctor (Peru)**

There is a growing desire among **Clinicians** to use **AI tools**

NOW



are familiar with AI:

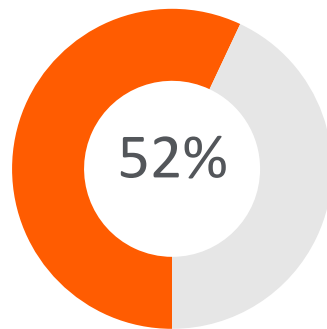
R: 97% ^c

and 8% very familiar i.e. they've used it a lot:

R: 14%

Q: To what extent are you familiar with AI?

Base: n=1,060 (includes those who are 'not at all familiar', therefore we could not ask them further questions, and those who did not finish completing the survey, for the most accurate read)



have used AI:

R: 62% ^c

including nearly a quarter(26%):

R: 37% ^c

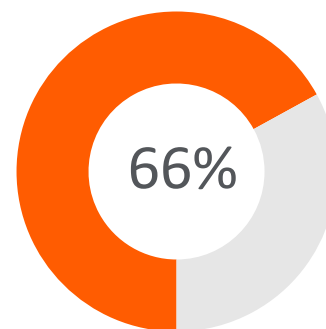
who have used it for a specific-work related purpose.

As previous plus: Q: Have you used an AI (including generative AI) product or an AI feature on a product you use regularly

Base: n=1,007 (score includes those who said 'don't know')



FUTURE

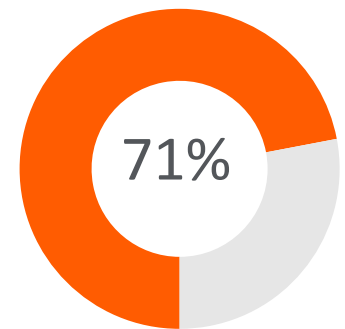


of those who haven't used AI expect to use it within 2-5 years:

R: 68%

Q: Do you expect you will choose to use AI in the near future?

Base: n=505 (those who haven't yet used AI, but have heard of it)



think AI will have significant or transformative impact on their area in the next 2-5 years:

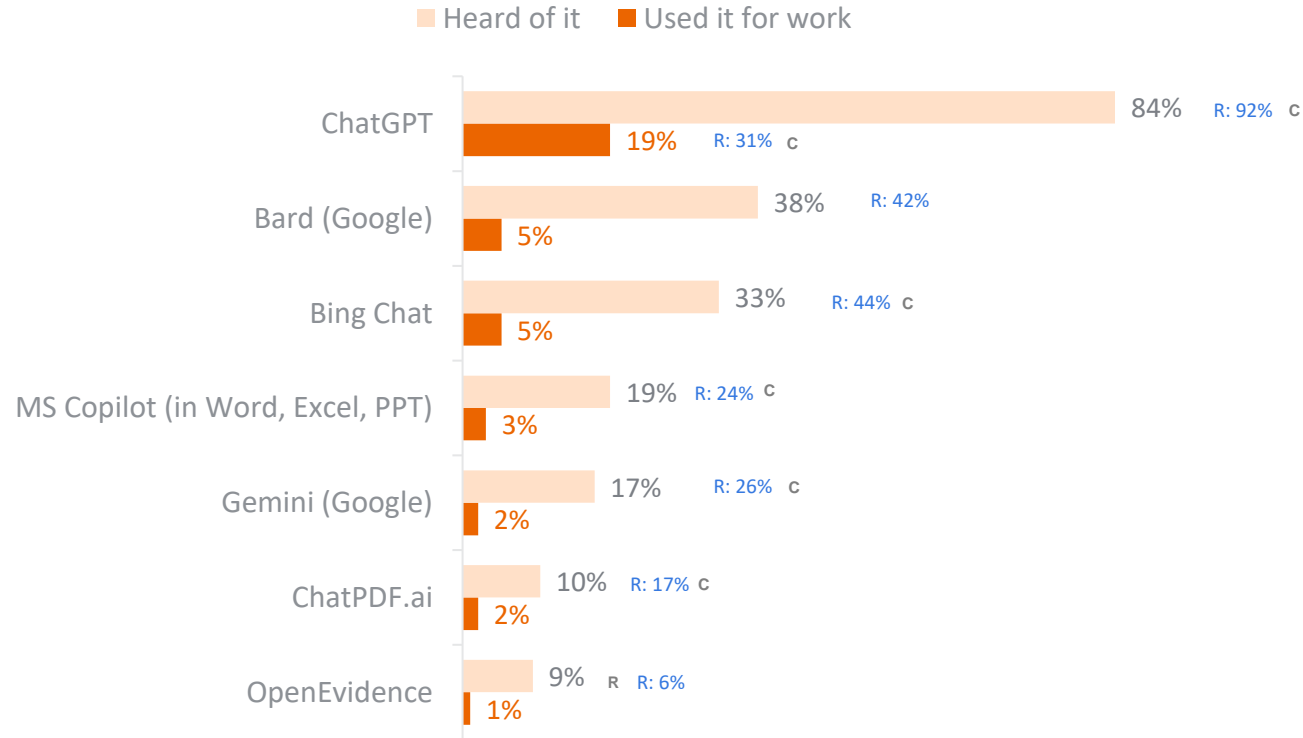
R: 74% ^c

Q: What do you think will be the level of impact of AI in your area of work/study in the near future

Base: n=1,007 (score excludes those who said 'don't know')

ChatGPT is by far the most well-known AI product

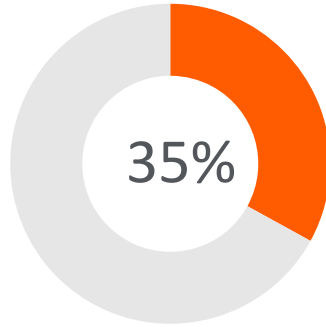
with a fifth having used it for a work purpose overall



Q: Which of these AI products, if any, have you heard of before today?
 Q: Which, if any, AI products or AI features have you used for work purposes?
 Base: n=1,007

Top 8 by awareness shown. Other AI tools prompted: Llama (MetaAI), LLM Titan (Amazon), SciSpace, Merative (IBM Watson Health), OpenAlex, Elicit, Med-PaLM, Claude (Anthropic), Article crafter, Scite.ai, Paper Digest, Hippocratic AI, Bloom One (Bloom AI), Iris ai, EvidenceHunt, Consensus, GlassHealth, Jenni, Lateral.io

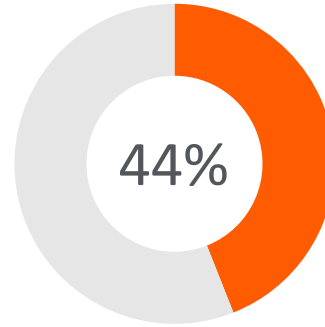
Institutions have not yet clearly conveyed their AI usage restrictions or preparations



don't know of any restrictions their institution has with regards to AI usage:

R: 31% ^c

Q: Which restrictions, if any, does your institution currently have with regards to AI usage?
Base: n=1,007



don't know of any ways their institution is currently preparing for AI usage:

R: 44%

Q: In which ways, if any, is your institution preparing for AI usage?
Base: n=1,007

A further **14%** (taking this to 58%) say their institution is making no preparations –

perhaps an indication of how **nascent** AI tools are, or indicating that AI readiness is an opportunity area where the institutions we serve **need support**

Nearly a quarter of Clinicians (23%) cite '**lack of relevant expertise within organizations**' as a top disadvantage of AI

Q: You mentioned that you had concerns, what do you think are the top 3 disadvantages of AI?
Base: n=861 (those who had concerns)

Theme 2: Attitudes are mixed, but are more positive than negative



“Although there would be **many benefits**, it would also **wreak havoc if false information is spread.**”
Nurse (Mexico)

Clinicians recognise the opportunities AI presents...



96% R: 94%



Think that AI will accelerate knowledge discovery at least to some extent in the next 2-5 years

92% R: 92%



Think that AI will provide cost savings to institutions and businesses

88% R: 86%



Think that AI will increase work quality

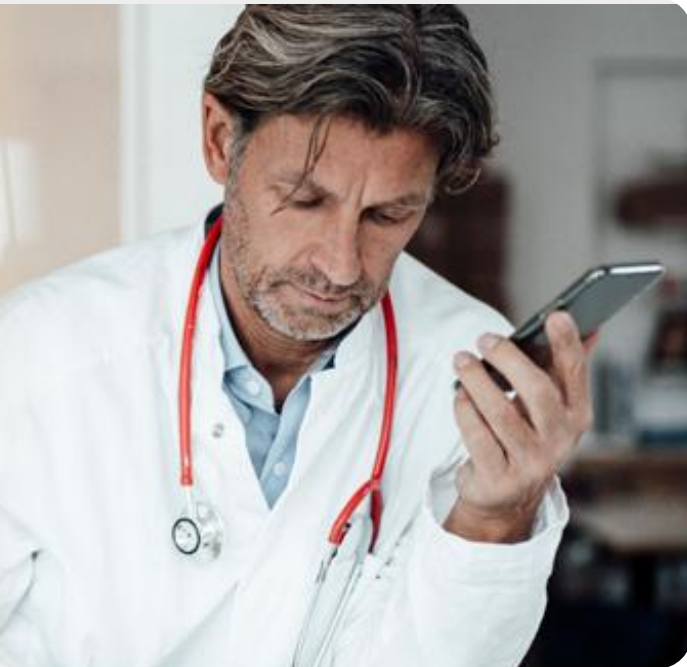
85% R: 85%



Think that AI frees up time for higher value work



...but they also have concerns about AI



93% R: 95% ^c



Believe AI will be used for misinformation

85% R: 86%



Have concerns that AI will cause critical errors or mishaps (e.g. accidents)

81% R: 81%



Think that AI will erode human critical thinking

79% R: 80%



Think that AI will cause disruption to society (e.g. unemployment for large number of people)



Q: Thinking about the impact AI (including generative AI) will have on society and your work, to what extent do you think over the next 2 to 5 years it will...?

Base: n=1,007 (excluding 'don't know/not sure' answers)

Scale: A great extent, some extent, not at all, don't know/not sure (top 2 box)

Theme 3: AI can help is across broad use cases









“I think the medical field will benefit and allow me to practice at the top of my license instead of doing menial tasks on the computer.”

Doctor (USA)

Clinicians see benefits to integrating AI across their workload

selected by clinicians as a top-three task that would benefit from AI in each general activity area

	General Activity Areas (ordered by most benefit)	Most selected - top-three task	Second most selected - top-three task
1 	Publishing <small>Only shown to clinicians involved in publishing</small>	Formatting your manuscript	Finding a journal to submit to
2 	Doing research <small>Only shown to clinicians involved in research</small>	Writing code (incl. improving/reviewing code)	Checking data against prior research
3 	Using scientific content	Searching the research literature for information on specific topics	Reviewing and summarizing the latest clinical evidence to establish/update guidelines
4 	Teaching <small>Only shown to clinicians involved in teaching</small>	Looking for real-world examples	Preparing teaching material
5 	Clinical activities	Reviewing a patient's history across multiple datapoints	To help me identify the correct treatment approach
6 	Funding activities <small>Only shown to clinicians involved in funding</small>	Identifying potential collaborators	Writing a funding proposal

Question: Thinking about the various tasks within "general activity area", which do you believe would benefit you most from the application of AI?

Asked: to those who see 'at least some' benefit of AI in each general activity area % Selected in their top 3

**the number of tasks shown for each general area is different, % per task tends to be higher the fewer the tasks shown*

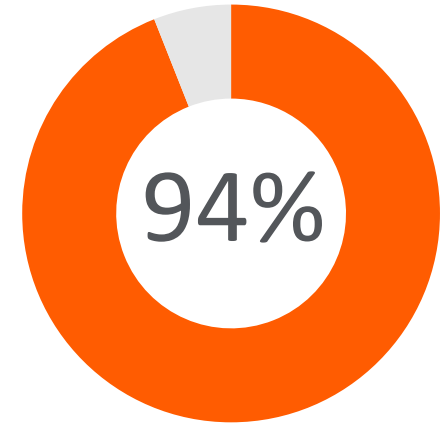
Also gave the option of 'don't know' and 'none of the above'

Likelihood to use a trusted AI assistant in clinical practice high



For **Clinicians**, utilising AI can help with **diagnoses, clinical imaging, education and EHR*** tasks amongst other things.

Likely to use it to...



Assess symptoms and identify possibility of a disease/condition
(provides confidence levels for diagnosis and recommends any confirmatory tests)

Clinicians make it clear use of AI must be responsible, ethical and transparent

Q: If you had a reliable and secure AI assistant to help you preparing your paper, how likely would you be to use it to... (top 3 ex excluding 'don't know / not applicable' answers)

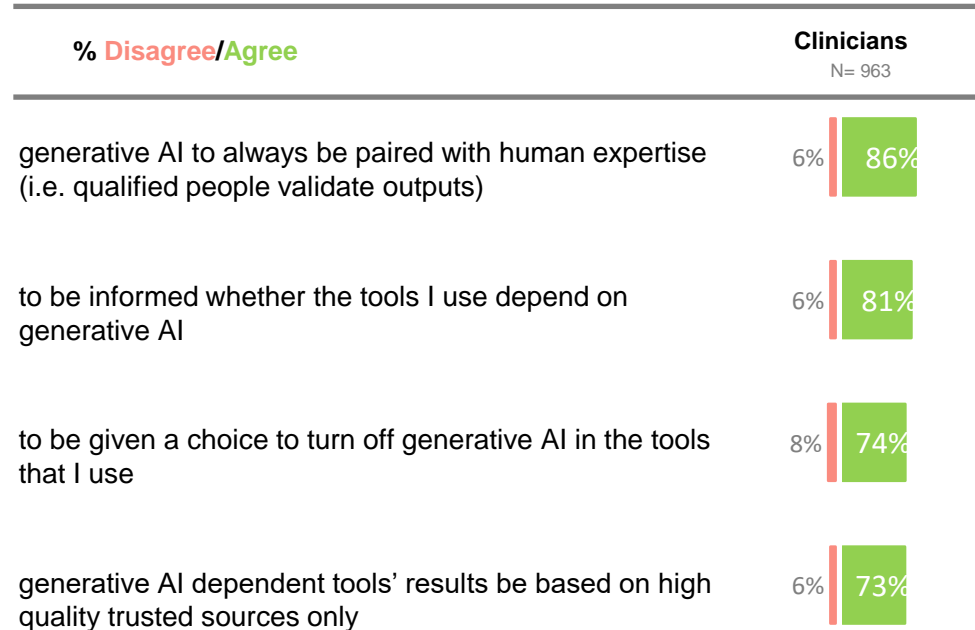
Base: n= 687

Theme 4: Clinicians require high quality ethical based AI tools



“We must adapt to the changes, but in medicine the patient medical relationship cannot be lost. It must have quality and ethical tools...
Doctor (Costa Rica)”

Most clinicians expect generative AI to always be paired with human expertise and to be informed if a tool they used depends on AI



Questions: Thinking about the use of generative AI in your area of work, how much do you agree or disagree with the following either presently or in the near future?

Scale: Strongly agree, somewhat agree, neither agree nor disagree, somewhat disagree, strongly disagree, don't know/hot applicable (bottom 2 box and top 2 box, excl. don't know)



Thank you