

Policy Briefing "Communication & Trust"

Trustworthy use of artificial intelligence in the healthcare sector

A fundamental prerequisite for the use of artificial intelligence (AI) is trust in digital innovation. This is also emphasized by the European Commission in its proposal for a regulation laying down harmonised rules on Artificial Intelligence (EU AI ACT). It proclaims that "Europe should become the global hub for trustworthy artificial intelligence".¹ Legislative proposals based on this, such as the revised EU Product Liability Directive of September 28, 2022, also underline that **AI technologies can only flourish in the EU if people trust digital innovations.**

Trust plays a particularly important role in the healthcare sector, as AI requires large amounts of data for its „training“, and health data is particularly sensitive according to the GDPR, therefore requiring utmost protection. The **EU AI ACT also reflects the special importance of trust in AI in healthcare.**²

The previous policy briefings of the German Israeli Health Forum for Artificial Intelligence (GIHF-AI) dealt with technical, security-related, and regulatory aspects regarding the use of health data for AI in Germany and Israel. The focus in the following lies on trust in artificial intelligence in both countries. In doing so, **not only is the relationship of trust to the technology itself considered, but also the relationship to and between the relevant actors.** The **doctor-patient relationship (DPR) is given special attention** in this paper. In addition, the **influence of evidence on trust** is examined in particular.³

Trust and Artificial Intelligence: (Also) A Question of Definition

In the context of this paper, the following definition of trust is adopted: **"Trust denotes a specific relationship quality between a trust giver and a trust object (communication). In the case of generalized trust, it is about the generalized willingness to trust a person, in the case of interpersonal trust, trust refers to a specific person, and in the case of system trust, it refers to organizations or institutions."**⁴ The **doctor-patient relationship can be understood as inter-personal trust, the user-developer relationship or health insurance company-doctor relationship as well as evidence-based trust as system-trust.**

Even though artificial intelligence by definition **"imitates human cognitive abilities by recognizing and sorting information from input data."**⁵, it is not considered a person, but a system. Thus, when one speaks of **trust in AI, they mean system-trust.** AI cannot be "trust-worthy" in a sense that a human being can be. But people can have confidence that the AI system in question has been tested, is subject to regulation, and is therefore safe.⁶ Another definition that is particularly appropriate in the context of trust regarding AI is that of the sociologist and philosopher Georg Simmel. It describes "the mechanism of trust as a **state between knowing and not knowing, in which the available information**

is exaggerated or overinterpreted.¹⁷ In the context of AI, this approach seems particularly appropriate because AI systems are complex systems that work with algorithms. Their exact functioning is difficult for many people to comprehend due to their complexity, which is why one has to rely on the **reduction of complexity**. In this respect, **trust that reduces complexity** seems to be a sensible approach.

A good doctor-patient relationship as the key to trust in AI

93 percent of respondents to a Bitkom study would prefer a diagnosis by a human being and only 31 percent of respondents would regularly seek a second opinion from an artificial intelligence in the future. In turn, 61 percent of respondents said that doctors would have more time for their patients if AI relieved them of simple tasks. So, on the one hand, there is still a lack of trust in AI applications in medicine, and on the other hand, one of their greatest benefits is recognized: The workload reduction it provides to healthcare professionals so that they can treat their patients even better.⁸ It should be noted that the study was conducted in 2019. Therefore, it would be useful to examine how the relationship between patients and AI has developed in the meantime.

At the same time, according to a **study by the German Association of Statutory Health Insurance Physicians (Kassenärztliche Bundesvereinigung) from 2021, the doctor-patient trust ratio is at 90 percent and thus at a very high level.**⁹ In conclusion, patients also have great trust in their practitioners when it comes to questions about digitalization and AI use.

Measurable evidence for more trust in AI

At the same time, **doctors must have a trusting relationship with AI systems** in order to be able to work with them confidently and to convey security to their patients. To this end, **evidence-based projects such as the "Responsibility Gaps in Human-Machine Interactions: The Ambivalence of Trust in AI"** of the Ingolstadt University of Technology (THI) and

the Catholic University of Eichstätt-Ingolstadt (KU) or the **joint project FRAIM** of the Federal Ministry of Education and Research are particularly useful in Germany. FRAIM aims to provide an ethically and legally sound as well as empirically validated evaluation framework for AI procedures. *"In sub-projects, detailed ethical, legal and empirical analyses are carried out to determine the acceptance of AI-based procedures, especially in neuromedicine. The researchers are among others investigating the following questions: What is relevant for patients and doctors to assess the trustworthiness and usefulness of AI technology? How does the use of AI for diagnosis and decision-making affect the doctor-patient relationship? How can weaknesses in current law be addressed and viable legal solutions developed?"*¹⁰ The THI and KU project will also explore how best to present algorithmic results and uncertainties to doctors in order to properly weigh and use the trust in the advice of AI systems.¹¹

Israel is already several steps ahead on this point. **To ensure that clinicians are involved in the early design phase of AI-based projects, many Israeli hospitals have their own innovation hubs.** There, doctors are brought together with startups, scientists, or specialized analytics providers to work together on solutions. The hospitals provide data while clinical expertise and the industry partner brings along the technical skills. This builds a **collectively beneficial relationship** that leads to **mutual trust and understanding**. Also, working closely with the Ministry of Health and the Ministry of Justice in areas such as patient data confidentiality and secondary use of medical data paves the way for faster legislation and greater trust."¹²

Stakeholders and patient representatives

Evidence-based trust on the part of users does not only arise in the context of medical consultations. **Positive experiences with AI-based applications, i.e. practical evidence, can also strengthen trust in innovations.** There are many examples: For people who speak with a substitute voice due to a missing larynx, new technologies can improve communication and thus also participation in society. Onco-

logical patients who are treated with the help of a medical AI assistance system can have significantly better chances of survival or recovery thanks to the improved flow of information between the doctors treating them. **AI systems help in preventive care as well as in diagnosis and therapy up to aftercare**, because they check existing findings on the basis of countless comparative data and make a recommendation.¹³

Patient advocacy groups also emphasize the great benefits of AI systems for those affected in terms of diagnosis, treatment, and safety. AI health apps or care robots that assist in taking medication through reminders or monitor health status create trust in treatment and medical staff as well as AI. At the same time, they point out that self-learning AI systems must justify their recommendations, ethical rules must be discussed and programmed, and risks such as data misuse and cybercrime must be seen and prevented at all costs. Moreover, AI systems should not want to replace doctors, but support them in their work. **In order to create trust among patients, it is also essential to involve them transparently in all processes.**¹⁴

“
Patients should be transparently involved in the processes. Transparency creates not only trust, it can also be ensured that the respective technologies be applied.
”

Federal Association of Laryngectomy Patients e.V.¹³

Leading the way in trust through an ethos of innovation: AI development in Israel

The **ethos of innovation is deeply rooted in Israeli culture**. It is based on Israel's ability to act flexibly and react quickly to unexpected circumstances in order to sustain itself. This also explains the **rapid growth of Israel's high-tech industry**. Moreover, Israel is now one of the leading countries in AI development. Since the small country has few natural resources and its economic strength depends heavily on the high-tech industry, **AI contributes greatly to economic growth and to improving the health**

system.¹⁵ Innovations such as AI may therefore have a confidence advantage compared to Germany, especially when used in the health sector.

Nevertheless, in particular the use of health data for research into Covid vaccines by a pharmaceutical company recently led to calls among the Israeli population for more transparency and a say in the use of sensitive health data.¹⁶ Experts have since stepped up calls for legislation to clearly regulate when patient data can and cannot be used, and for people to be informed when their data is being used for a particular project. **The Israeli government has understood that a confidence advantage does not mean that it is infinite. Therefore, it is currently working on a new regulation for health data use.** This illustrates the influence of politics and the legislature on the public's trust.¹⁷ In terms of legislation, the Israeli Ministry of Health, for example, is also guided by European legislation such as the EU AI ACT.

Summary and outlook

Evidence creates trust in AI, both in the context of evaluation of AI and in the sense of practice-related evidence. This refers both to the trust of doctors and of patients in AI. At the same time, people's trust in their doctors is very high in Germany. It can be concluded from this that **both personalized trust in the context of the doctor-patient relationship and trust in evidence-based information led to greater trust in AI**. In addition to functionality and the **added value created for prevention, diagnostics, treatment and aftercare**, data security also plays a major role here. Therefore, the influence of all relevant stakeholders such as political actors, scientists and the health industry must always be considered. **Trustworthy regulation and transparent communication** by policymakers, thoroughly researched and developed AI by the scien-

tific community, and transparent application by the healthcare industry will create **sustainable trust**.

This becomes particularly clear when one looks at Israel. **Doctors, startups, businesses, and politics are working together in hospital innovation hubs to establish trustworthy AI applications.** The Israeli government's look to Europe for regulation underscores the need for an ethically and legally trustworthy framework. Years of experience with tech innovation and the resulting system-trust also benefit the Startup Nation. Through numerous AI-

based applications from which patients already benefit, there is also a high level of practice-related evidence. This again promotes trust.

Close **cooperation between Germany and Israel** on trust in AI therefore makes sense both in terms of **establishing trust-promoting development and regulation of AI in the health sector.** Based on the results, Germany should develop a **communication campaign for the population** for a better understanding of AI use and processing of health data.

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GIHF^{AI}

German Israeli
Health Forum for
Artificial Intelligence

**ELNET
Deutschland e.V.**

Albrechtstraße 22
10117 Berlin
deutschland@elnetwork.eu



elnet-deutschland.de



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Author: Lea Ledwon
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GIHF-AI

German Israeli
Health Forum for
Artificial Intelligence

Albrechtstraße 22
10117 Berlin
info@gihf-ai.eu



gihf-ai.eu



[@GIHFAI](https://www.linkedin.com/company/GIHFAI)

CONTACT

Carsten Ovens
Executive Director
ELNET Deutschland

Lea Ledwon
Program Manager GIHF-AI
ELNET Deutschland