

# How Does AI Handle End-of-Life Care Decisions?

Rasit Dinc

*Rasit Dinc Digital Health & AI Research*

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## Abstract

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# How Does AI Handle End-of-Life Care Decisions?

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## Introduction

The integration of artificial intelligence (AI) into healthcare is transforming many aspects of medicine, and its application in end-of-life care is an area of growing interest and complexity. As chronic illnesses become more prevalent and the focus on patient-centered care intensifies, the need for timely and effective end-of-life conversations has never been more critical. This article explores how AI is being used to support decisions in this sensitive domain, the significant ethical challenges that arise, and the steps needed for its responsible implementation.

## The Promise of AI in Supporting Clinical Decisions

AI-powered decision support tools, often referred to as “nudges,” are at the forefront of this new frontier. These systems are not designed to make autonomous decisions but to augment clinical judgment by providing timely and relevant information. By analyzing vast datasets from electronic health records (EHRs), machine learning algorithms can identify complex patterns to predict short-term mortality risk with increasing accuracy [1]. For instance, these tools can provide clinicians with weekly, confidential notifications identifying patients who may be at high risk, thereby prompting a consideration for palliative care consultation or a goals-of-care discussion [1].

The main advantage of these tools is their ability to facilitate earlier and more frequent “serious illness conversations.” Prognostic uncertainty and inherent optimism bias among clinicians can lead to these crucial discussions being delayed. An AI nudge can act as a catalyst, helping to ensure that

conversations about a patient's values, goals, and preferences occur in a timely manner. Research indicates that such interventions can significantly increase the rate of palliative care consultations and improve the overall quality of end-of-life care by ensuring it is better aligned with patient wishes [1, 2].

## **Navigating the Ethical Minefield**

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Despite their promise, the deployment of AI tools in end-of-life care presents significant ethical challenges with real-world implications for patient well-being, equity, and the very nature of compassionate care. These are not abstract concerns but practical hurdles that must be overcome.

A major concern is **algorithmic bias and equity**. Most current AI models have been developed and validated using data from specific, often homogeneous, populations and healthcare systems, primarily within the United States [1]. This raises serious questions about their generalizability and performance when applied to more diverse populations with different demographics, comorbidities, and social determinants of health. An algorithm trained on a narrow dataset risks perpetuating and even amplifying existing health disparities, potentially leading to inequitable access to palliative care for underrepresented groups [2].

Furthermore, the use of AI introduces risks of **dehumanization and diminished patient autonomy**. There is a valid concern that an over-reliance on algorithmic predictions could erode the humanistic core of the patient-clinician relationship. The nuanced, empathetic communication that defines high-quality end-of-life care cannot be replicated by a machine. AI should be positioned as a tool to support, not supplant, human judgment and interpersonal connection [2].

Finally, the principles of **transparency and accountability** are paramount. Many sophisticated machine learning models operate as “black boxes,” making it difficult to understand the precise factors driving a particular prediction. This lack of transparency poses a significant challenge: who is accountable if an algorithm's prediction is inaccurate and leads to a negative outcome? Establishing clear policies for governance and ensuring that AI tools are explainable are essential steps to building trust and ensuring ethical implementation [2].

## **The Path Forward: A Call for Responsible Implementation**

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AI can be a valuable ally for clinicians in the challenging landscape of end-of-life care, but its integration must be deliberate, cautious, and firmly grounded in ethical principles. The goal is not to automate decision-making but to augment the capabilities of healthcare professionals to provide more timely, informed, and compassionate care.

A responsible path forward requires a multi-pronged approach. First, there must be a concerted effort to address bias through the development and **external validation of algorithms on diverse, representative datasets** [1]. Second, **robust policies and regulatory frameworks** are needed to govern the use of these tools, ensuring patient privacy, data security, and

clear lines of accountability [2]. Finally, the development and deployment of AI in this space must be a **participatory process**, actively involving patients, families, clinicians, and bioethicists to ensure that the technology aligns with human values and enhances the dignity of end-of-life care [2].

## Conclusion

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AI is not a panacea for the complexities of end-of-life care decisions. It is a powerful tool with the potential to provide significant support, but it is one that carries substantial ethical weight. By helping to identify at-risk patients earlier, AI can help initiate crucial conversations that honor patient preferences and improve quality of life. However, to realize this promise, we must proceed with a steadfast commitment to ethical integrity, patient-centeredness, and the preservation of the human connection that lies at the heart of medicine. The future of AI in end-of-life care depends not on the sophistication of the technology itself, but on the wisdom with which we choose to wield it.

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