

# AI Governance and Strategy Alignment:

## Empowering Effective Decision Making

A Governance Institute Strategy Toolkit • Spring 2024





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# Table of Contents

## **1 Introduction**

- 1 Importance of AI Governance and Strategy Alignment
- 1 Overview of the Toolbook's Objectives and Structure

## **3 Strategic Implications of AI for the Organization**

- 3 Opportunities and Risks
- 7 Examples of Successful Applications: AI-Driven Administrative Gains
- 8 Near-Term and Long-Term Impacts
- 9 Potential Scenarios and Considerations for Strategic Planning

## **10 Developing an Integrated AI Strategy**

- 10 Collaboration with Senior Management
- 13 Financial and Development Planning

## **15 Board Member Responsibilities in AI Governance**

- 15 Understanding Board Member Roles
- 16 Risk Oversight and Compliance

## **18 Empowering Board Members for Effective Decision Making**

- 18 Practical Tools and Resources
- 19 Evaluating Proposed AI Solutions
- 23 Examples of Successful Applications:  
AI-Driven Decision Making and Information-Sharing Gains

## **27 Conclusion**

## **28 References**

- 28 AI Frameworks
- 28 AI Risk Assessment Tools
- 29 Ethical Decision Making
- 29 Others

# Introduction

**A**rtificial Intelligence (AI) has emerged as a revolutionary force in healthcare, offering unprecedented opportunities to improve patient experience and outcomes, enhance operational efficiency, and drive innovation. However, alongside these opportunities come significant challenges, particularly in ensuring responsible and ethical AI deployment and significant risks in adoption, compliance, privacy, and security. As healthcare organizations embrace AI technologies, robust governance frameworks become paramount to navigate the complexities and risks associated with AI implementation effectively.

## Importance of AI Governance and Strategy Alignment

AI governance refers to the people, policies, processes, and controls an organization puts in place to ensure they acquire, develop, deploy, and manage AI technologies in a safe, responsible, ethical, compliant, and accountable manner (referred to as “Trustworthy AI”). In the healthcare sector, where AI has the potential to revolutionize diagnosis, treatment, and patient care, effective governance is essential to safeguard patient privacy, mitigate risks, and maintain trust among stakeholders.

Moreover, aligning AI strategy with the broader organizational strategic plan is crucial for maximizing the value of AI investments and ensuring that AI initiatives contribute to achieving the organization’s mission and vision. By integrating AI strategy with existing business goals and priorities, healthcare organizations can effectively leverage AI to address operational challenges, improve patient engagement and outcomes, and drive sustainable growth.

## Overview of the Toolbook’s Objectives and Structure

This toolbook aims to provide board-level individuals within healthcare organizations with actionable insights and guidance to oversee the development of an integrated AI strategy aligned with their organization’s business strategy. Specifically, the toolbook aims to achieve the following objectives:

1. **More profound clarity on the strategic implications of AI:** By exploring the opportunities and risks associated with AI adoption in healthcare, board members will gain a deeper understanding of AI’s strategic implications for their organization in the short, medium, and long term.
2. **Guidance on developing an integrated AI strategy:** The toolbook will provide practical advice on collaborating with senior management to develop an AI strategy that aligns with the organization’s mission, vision, and strategic priorities. It will cover critical aspects such as financial planning, resource allocation, and stakeholder engagement.
3. **Understanding board member responsibilities in AI governance:** Board members will learn about their role in overseeing AI initiatives, asking relevant questions, and holding management accountable for effectively implementing the AI strategy. The toolbook will also address risk oversight, compliance, and the establishment of effective governance mechanisms.

4. **Empowering board members for effective decision making:** Practical tools, resources, and case studies to empower board members to make informed decisions about AI governance and strategy development. These insights will equip board members to drive AI initiatives that align with organizational goals and values.

In terms of structure, the toolkit is divided into sections, each focusing on specific aspects of AI governance and strategy development. It includes discussions, case examples, and practical tools to facilitate understanding and application. Overall, the toolkit is designed to be a comprehensive resource for board-level individuals seeking to navigate the complexities of AI governance and integration in healthcare organizations.



# Strategic Implications of AI for the Organization

Organizations developing and adopting AI have the potential to forever change healthcare by unlocking new opportunities for improved patient engagement and care, operational efficiency and effectiveness, and innovation. However, alongside these opportunities come significant risks and challenges that board members must carefully manage. In this section, we will delve into the strategic implications of AI for healthcare organizations, exploring both the opportunities and risks associated with predictive and generative AI technologies and their near-term and long-term impacts.

## Opportunities and Risks

Predictive and generative AI technologies offer many opportunities for healthcare organizations to enhance their operations and services. Predictive AI, powered by machine learning algorithms, enables organizations to analyze large amounts of data to make accurate predictions and optimize decision-making processes. For example, organizations can use predictive analytics to predict patient admission rates, identify high-risk individuals for proactive interventions, optimize hospital resource allocation, and even analyze scans and images.

Generative AI, on the other hand, goes beyond prediction to create new data or content. Large language models (LLMs) are a prominent example of generative AI that can generate human-like text, enabling applications such as natural language processing, virtual health assistants, and medical literature summarization. By harnessing generative AI, healthcare organizations can automate repetitive tasks, enhance patient communication, and accelerate medical research and development.

The following are areas of opportunity for using AI and potential risks to an organization that seeks the benefits of adopting AI.

### Opportunities:

- **Operations optimization:** AI technologies can enable healthcare organizations to streamline operations, reduce inefficiencies, and optimize resource allocation. Predictive analytics and automation tools help improve workflow management, minimize wait times, and enhance operational efficiency.
- **Improved patient/customer engagement:** AI-powered chatbots and virtual assistants can enhance patient/customer service by providing personalized support, answering queries, and scheduling appointments. Natural language processing (NLP) algorithms enable efficient communication and support, improving patient satisfaction and engagement.

- **Enhanced business and patient monitoring:** AI-driven monitoring systems can enable real-time business and patient metrics tracking, facilitating proactive intervention and decision making. Remote patient monitoring, wearable devices, and health sensors embedded with AI allow for continuous monitoring of patient health parameters, leading to early detection and diagnosis of health issues and improved patient outcomes.
- **Faster product development:** AI can accelerate product development cycles by automating processes such as drug discovery, clinical trials, and medical device design. Pharmaceutical companies use machine learning algorithms to analyze big data to identify potential drug candidates, predict patient responses, and optimize treatment protocols, leading to faster innovation and time-to-market.
- **Higher quality and innovation:** AI can enhance the quality of healthcare delivery by providing personalized, evidence-based care and facilitating clinical decision making. Advanced imaging and diagnostic algorithms can improve accuracy and precision in disease diagnosis and treatment planning, leading to better patient outcomes. Additionally, AI fosters innovation by enabling novel approaches to healthcare delivery and personalized medicine.
- **Improved patient outcomes:** AI-driven interventions and decision support systems can improve patient outcomes by providing clinicians with timely insights, personalized treatment recommendations, and predictive risk assessments. By leveraging AI technologies, healthcare providers can optimize treatment plans, reduce medical errors, and enhance patient safety, leading to better clinical outcomes and higher quality of care.

#### **Risks:**

- **Employee and patient trust:** Adopting AI technologies may erode employee and patient trust if not implemented transparently and ethically. Lack of trust in AI systems may lead to resistance to adoption, decreased engagement, and potential backlash from stakeholders even when the systems are accurate and effective.
- **Errors:** AI systems are susceptible to errors and biases, leading to incorrect diagnoses, treatment recommendations, or operational decisions. Poorly trained algorithms, biased datasets, and algorithmic drift may result in adverse outcomes for patients and organizational performance.
- **Unethical or unintended practices:** AI algorithms may inadvertently perpetuate or amplify existing biases, leading to unfair treatment or discrimination against specific patient populations. Unethical practices such as data manipulation, algorithmic manipulation, or misuse of patient data pose ethical risks and may damage organizational reputation.



- **Erosion of employee skills:** The widespread adoption of AI technologies may lead to the erosion of traditional job roles and skills, particularly in areas where automation replaces human labor. To remain relevant in an AI-driven healthcare landscape, healthcare professionals must adapt to new roles, acquire new skills, and embrace lifelong learning. If there is a need to “roll-back” to human decision making, the skills and experience needed to make those decisions may no longer exist.
- **Privacy and security:** AI applications may require access to sensitive patient, employee, and business data, raising concerns about privacy and security. Breaches of the confidentiality, integrity, and availability of sensitive data pose significant risks to patient and employee confidentiality, regulatory compliance, and organizational reputation. A breach of an application used for patient care delivery may also threaten patient safety.
- **Compliance:** Healthcare organizations must comply with regulatory requirements and ethical standards when implementing AI technologies. Failure to adhere to HIPAA (Health Insurance Portability and Accountability Act) or GDPR (General Data Protection Regulation) may result in legal consequences, fines, and reputational damage.
- **AI project failures:** AI project failure can stem from various factors, including inadequate data quality or quantity, lack of alignment between AI goals and business objectives, insufficient resources, and insufficient understanding of AI limitations and capabilities. Poorly defined project scopes and unrealistic expectations regarding AI capabilities can also contribute to failure.

Navigating the benefits and risks of AI integration in healthcare requires careful consideration of business, ethical, legal, and social implications. By addressing these challenges proactively, healthcare organizations can maximize the benefits of AI while mitigating potential risks and ensuring responsible and ethical AI deployment.

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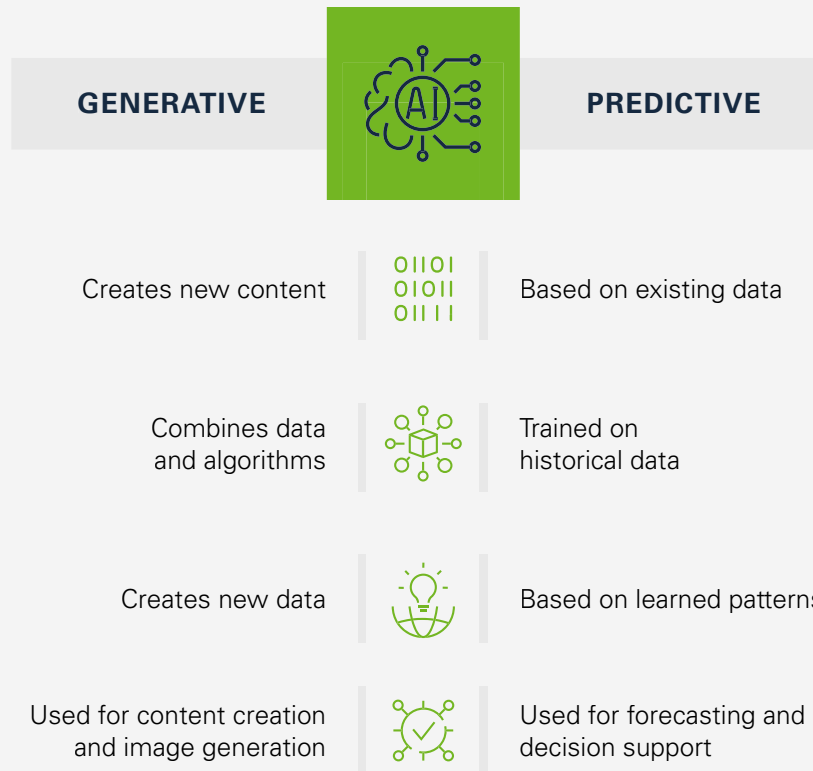
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## Predictive vs. Generative AI

Predictive AI uses historical data to predict outcomes, aiding decision making. It is trained on large datasets to recognize patterns. Healthcare applications include predicting patient readmissions and aiding in disease diagnosis and treatment planning.

Generative AI goes beyond prediction to create new data based on learned patterns. It can generate images, texts, or other content. Healthcare uses include generating synthetic medical images and personalized treatment plans.

Understanding these differences is crucial for effectively using AI in healthcare. Predictive AI informs decision making, while generative AI fosters innovation and creativity.



## Examples of Successful Applications: AI-Driven Administrative Gains

### Example 1: Patient Progression Hub at Children's Mercy in Kansas City

A recent story in the *Kansas City Beacon*<sup>1</sup> describes a “NASA-like operations center” at Children's Mercy Hospital in Kansas City that relies on AI and predictive analytics to reduce the time spent on paperwork. The hospital's Patient Progression Hub helps anticipate bed capacity, speeds up patient discharges, and monitors many aspects of patient care and hospital operations.

Jennifer Watts, who oversees the hospital hub, states in the story that referrals of children from other hospitals improved dramatically with AI help.

“It was a pen-and-paper game and multiple people were involved,” Watts is quoted as saying. “We had to tell our referral, ‘Let's see if we have something available, and we'll let you know as soon as we can.’ There were multiple phone calls in the background.... Nine times out of 10 we were still able to say yes. But the workload on our end was pretty big...Now we can say yes faster.”

Children's Mercy's hub has also reduced the wait time for patients ready to be discharged. Once a doctor has signed off on a patient going home, it used to take hours or even days to complete the process. But now, Watts said, most areas of the hospital have cut that to well under two hours, largely because the AI-driven system can pinpoint where the holdups are and nudge staff to clear the path.

And by removing some of the administrative burdens from doctors' and nurses' to-do lists, Watts says she's noticing fewer symptoms of burnout.

### Example 2: Holistic Hospital Optimization at Hartford HealthCare

As reported by *CT Insider* recently,<sup>2</sup> Hartford HealthCare is launching a new center dedicated to using artificial intelligence in healthcare, which officials state in the story is the first in New England and one of a few in the United States.

The Center for AI Innovation in Healthcare comes from a nearly decade-long, ongoing international collaboration between Hartford HealthCare, the Massachusetts Institute of Technology, and the University of Oxford.

Through the collaborations, Hartford HealthCare Innovation developed Holistic Hospital Optimization, nicknamed H2O, which uses AI to help make hospital operations more efficient, including scheduling staff and operating rooms, as well as predicting how long a patient will stay, officials said.

Audrey Silver, Nurse Manager for the Hartford HealthCare emergency department, said the new AI system has helped streamline scheduling nurses.

1 Suzanne King, [“Artificial intelligence already plays a part in Kansas City health care, without much regulation,”](#) *Kansas City Beacon*, February 22, 2024.

2 Cris Villalonga-Vivoni, [“Hartford HealthCare launches new center to use artificial intelligence in hospitals,”](#) *CT Insider*, February 16, 2024.

Traditionally, the nurses are just assigned to shifts regardless of “the time of year or the patient volumes,” which often fluctuates, Silver said. With this manual system, she estimated it would take her team about 88 hours to schedule a six-week block.

Silver said they’ve been using AI to schedule the nurses since last summer. The AI analyzes data collected over several weeks on patient trends and nurses’ individualized scheduling preferences to create the schedule.

Now, she estimates they take about 10 hours to finalize the six-week staff blocks since AI generates the schedule “with the click of a button.”

Similarly, AI is currently being used to predict a patient’s length of stay at the hospital, said Daniel Kombert, Hartford HealthCare Transfer Center Medical Director. When patients stay too long at a hospital, the risk and cost increases while safety decreases, he said.

Over the last four years, Kombert, who is also associate vice president of medical affairs at Hartford Hospital, said they met weekly with an AI team to develop a framework that analyzes 172 data points for each patient every day at Hartford HealthCare to predict how long they would stay at the hospital.

Kombert states in the story that lengths of stay have decreased 7 percent since implementing the system.

### **Near-Term and Long-Term Impacts**

Analysts expect the healthcare industry’s adoption of AI to have both near-term and long-term impacts on business operations, patient care, and competitive positioning. In the near term, AI technologies can drive immediate improvements in efficiency, accuracy, and patient outcomes. For example, AI-powered diagnostic tools can expedite the interpretation of medical images, leading to faster diagnoses and treatment decisions.

In the medium to long term, AI may transform healthcare by enabling personalized medicine, preventive interventions, and population health management. AI-driven predictive analytics can identify individuals at risk of developing chronic conditions, allowing for targeted interventions to prevent disease progression and improve health outcomes. Capabilities that support a value-based care model. Moreover, AI-powered virtual health assistants and telemedicine platforms can extend access to care and support remote patient monitoring, reducing the burden on healthcare systems and improving patient convenience.

However, achieving these long-term benefits requires careful strategic planning and investment in AI infrastructure, talent acquisition, and stakeholder engagement. Healthcare organizations must consider data governance, regulatory compliance, and ethical considerations to ensure the deployment of trustworthy AI technologies.

## Potential Scenarios and Considerations for Strategic Planning

- **Scenario 1: Integration of AI in clinical workflows:** Healthcare organizations must consider how AI technologies will integrate into clinical workflows and practices. Strategic planning should involve stakeholder engagement, training programs for healthcare staff, and continuous evaluation of AI performance and impact on patient care.
- **Scenario 2: Regulatory compliance and ethical considerations:** Healthcare organizations must navigate complex regulatory frameworks and ethical considerations when deploying AI technologies. Strategic planning should involve collaboration with regulatory agencies, legal experts, and ethicists to ensure compliance with data privacy regulations and ethical guidelines.

In summary, the strategic implications of AI for healthcare organizations are vast and multifaceted, encompassing both opportunities and risks. By understanding the potential impacts of predictive and generative AI technologies and planning for both the near-term and long-term implications, healthcare organizations can harness the transformative power of AI to drive innovation, improve patient outcomes, and achieve sustainable growth.

# Developing an Integrated AI Strategy

**D**eveloping an integrated AI strategy is essential for healthcare organizations to leverage AI effectively and align it with their broader organizational goals. This section provides guidance on collaborating with senior management to develop such a strategy, emphasizing the importance of cross-functional collaboration and stakeholder engagement. Additionally, financial and development planning strategies for AI initiatives are outlined, covering resource allocation, budgeting, ROI evaluation, and sustainability considerations.

## Collaboration with Senior Management

Collaborating effectively with senior management is paramount to the success of AI initiatives within healthcare organizations. Senior leaders possess the authority, influence, and strategic vision to drive organizational change and align AI strategy with overarching business objectives. Here, we delve deeper into critical considerations for fostering collaboration with senior management:

- **Strategic alignment:** Ensure the AI strategy aligns closely with the organization's goals and mission. Engage senior leaders in discussions about how AI can address specific challenges, capitalize on opportunities, and drive value across various facets of the organization.
- **Change leadership:** Recognize that implementing AI initiatives often requires organizational change and transformation. Work closely with senior leaders to cultivate a culture of innovation, agility, and continuous improvement. Encourage them to champion AI initiatives, communicate their strategic importance, and support employees through the change process.
- **Risk management:** Acknowledge and address AI adoption's potential risks and uncertainties. Collaborate with senior management to identify and mitigate risks related to trust, errors, ethics, employees, data privacy, security, regulatory compliance, and third parties. Develop robust governance mechanisms and risk management protocols to safeguard against potential pitfalls.
- **Resource allocation:** Work with senior leaders to secure financial, human, and technological resources to support AI initiatives. Advocate for adequate budgetary allocations, talent acquisition and training programs, and infrastructure investments to ensure successful implementation and scalability of AI projects.
- **Metrics and accountability:** Define clear metrics and key performance indicators (KPIs) to measure progress and, ultimately, the success of AI initiatives. Collaborate with senior management to establish accountability mechanisms and governance structures for monitoring progress, evaluating outcomes, and making data-driven decisions. Require regular reporting on AI performance and outcomes to senior leadership and the board to demonstrate ROI and drive continuous improvement.

- **Stakeholder engagement:** Foster stakeholder engagement and collaboration by involving key stakeholders, including clinicians, administrators, IT professionals, and patients, in the AI strategy development process. Encourage senior leaders to actively solicit feedback, address concerns, and empower stakeholders to contribute to designing, implementing, and evaluating AI initiatives.
- **Strategic partnerships:** Explore opportunities for strategic partnerships and collaborations with external organizations, including technology vendors, research institutions, and industry consortia. Engage senior management in discussions about potential partnerships to enhance the organization’s AI capabilities, accelerate innovation, and drive value creation.

Healthcare boards can leverage senior leaders’ expertise, resources, and influence to develop and execute a cohesive and impactful AI strategy by fostering collaborative relationships with senior management. Through open communication, strategic alignment, and shared accountability, organizations unlock the potential of AI to drive innovation, improve patient outcomes, and achieve sustainable growth.





## Human Involvement in AI Decision Making and the Risk Matrix<sup>3</sup>

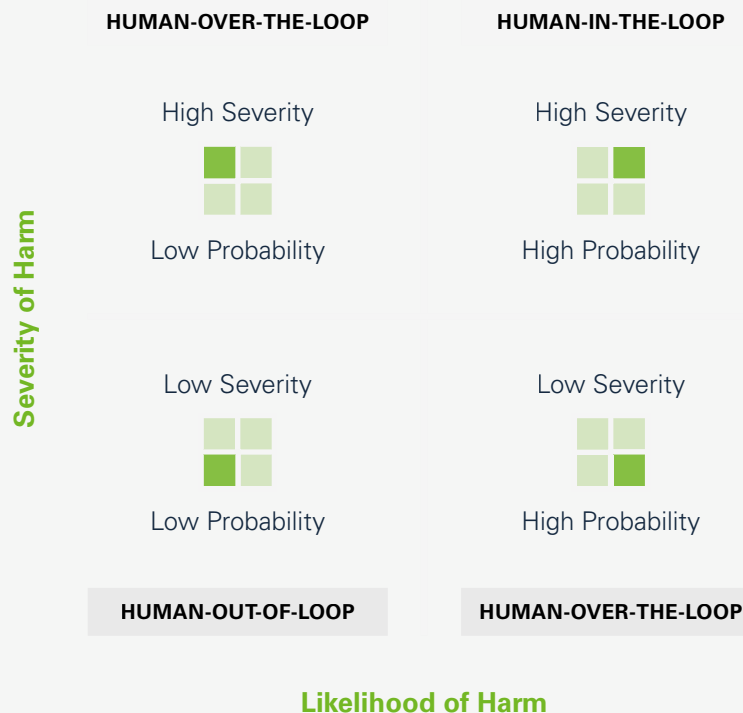
Singapore’s Model AI Governance Framework identifies three broad categories of human involvement in AI decision making. These include:

- **Human-in-the-loop.** AI provides recommendations, and humans choose whether to accept the recommendation or not.
- **Human-out-of-the-loop.** An AI system has full control without the option of human override.
- **Human-over-the-loop.** Human oversight can take over control if AI encounters unexpected or undesirable events.

The authors also define a risk matrix with increasing risk impact on the Y-axis and increasing risk likelihood on the X-axis.



Board members may use the matrix (level of risk) as an element when considering (not the only consideration) what level of human involvement might be appropriate in a system.



3 Personal Data Protection Commission Singapore, *Model AI Governance Framework*, 2019.

## Financial and Development Planning

A robust financial and development plan is essential for implementing and sustaining AI initiatives within healthcare organizations. Developing the plan involves careful consideration of resource allocation, budgeting, ROI evaluation, and sustainability considerations. Here, we delve deeper into the key strategies and considerations for effective financial and development planning that board members should expect to see when evaluating AI financial and development plans:

- **Comprehensive resource assessment:** Conduct a thorough assessment of the resources required for AI initiatives, including financial resources, human capital, infrastructure, and technology. Collaborate with organizational stakeholders to identify resource needs and prioritize investments based on strategic priorities and potential impact.
- **Budgeting and resource allocation:** Develop a comprehensive budget for AI initiatives that covers various aspects, including technology acquisition, data acquisition and management, talent acquisition and training, and ongoing maintenance and support. Work with senior management to allocate resources strategically, balancing short-term needs with long-term goals and ensuring alignment with the organization's financial objectives.
- **ROI Evaluation Framework:** Establish a robust framework for evaluating AI initiatives' return on investment (ROI). Consider quantitative metrics, such as cost savings, revenue generation, and operational efficiencies, and qualitative factors, such as improved patient outcomes, enhanced patient experience, and increased employee satisfaction. Use ROI evaluation to inform decision making, prioritize investments, and demonstrate the value of AI initiatives.
- **Risk management and contingency planning:** Anticipate potential risks and challenges associated with AI implementation, such as limited expertise, data complexity and availability, data privacy and security concerns, regulatory compliance issues, and ethical considerations. Develop risk management strategies and plans to manage risks, address challenges, and ensure the successful execution of AI initiatives. Allocate resources and budgetary provisions for risk mitigation measures and contingency planning to minimize disruptions and maximize outcomes.
- **Scalability and sustainability:** Consider AI initiatives' long-term scalability and sustainability when planning and budgeting. Evaluate the scalability of AI solutions to accommodate future growth and expansion, ensuring that they can adapt to evolving needs and requirements. Develop strategies for maintaining and updating AI solutions over time, including ongoing monitoring, evaluation, and optimization. Allocate resources for continuous improvement and innovation to ensure the long-term viability and effectiveness of AI initiatives.

- **External funding and collaboration:** Explore external funding and collaboration opportunities to support AI initiatives. Seek grants, funding opportunities, and partnerships with government agencies, research institutions, and industry partners to supplement internal resources and expand the scope and impact of AI projects. Collaborate with external stakeholders to leverage expertise, access additional resources, and accelerate AI research and development innovation.

By incorporating these strategies and considerations into the financial and development planning process, healthcare organization board members can effectively oversee the allocation of resources, evaluate ROI, manage risks, and ensure the scalability and sustainability of AI initiatives. Through careful planning and strategic investment, organizations can harness the potential of AI to drive innovation, improve patient engagement and outcomes, and achieve sustainable growth in healthcare delivery and management.

# Board Member Responsibilities in AI Governance

**B**oard members are crucial in overseeing AI initiatives within healthcare organizations, ensuring initiatives align with strategic goals, deliver value, and comply with regulatory requirements while managing risks effectively. This section will provide insights into the responsibilities of board members in AI governance, including understanding their roles, asking relevant questions, defining leadership responsibilities, overseeing risks, and ensuring compliance with regulations.

## Understanding Board Member Roles

Board members have a fiduciary duty to act in the organization's and its stakeholders' best interests, including patients, employees, investors, and the community. Board members serve as stewards of the organization. They provide strategic direction, oversight, and accountability for AI initiatives. Board members must deeply understand their roles and responsibilities in AI governance to fulfill their duties effectively. Below is a more detailed exploration of board member roles:

- **Strategic vision:** Board members set the strategic vision and direction for the organization, including its approach to AI adoption and governance. They should actively participate in discussions about AI strategy, investment priorities, and risk management strategies to ensure alignment with the organization's mission, vision, and values.
- **Trustworthy AI systems:** Board members should mandate safety, security, and resilience measures in AI systems' design and selection, prioritizing transparent and interpretable decision-making processes to ensure the implementation of trustworthy AI solutions. They should enforce privacy-enhancing practices, fairness and bias management strategies, and accountability and transparency standards. By championing privacy protection, fairness, and accountability while prioritizing validation and reliability in AI solutions, the board can uphold trust in the technology's integrity and effectiveness within healthcare organizations.
- **Risk management:** Board members oversee the management of AI-related risks and ensure appropriate risk management strategies are in place. They should ensure the organization conducts risk assessments and establishes mechanisms to treat, mitigate, and monitor risks effectively. Board members should prioritize risks based on their potential likelihood and impact on individuals, the organization, and the larger ecosystem.
- **Financial oversight:** Board members oversee the financial aspects of AI initiatives, including budgeting, resource allocation, and ROI evaluation. They should review and approve budgets for AI projects, ensure the organization allocates resources efficiently, and monitor AI investments' financial performance and outcomes. Board members should evaluate ROI metrics and outcomes to assess the effectiveness and value of AI initiatives.

- **Ethical and legal compliance:** Board members must ensure that AI initiatives comply with ethical standards, legal requirements, and regulatory guidelines. They should stay informed about relevant laws, regulations, and industry standards governing AI technologies, data privacy, and cybersecurity. Board members should establish policies and procedures to ensure the deployment of trustworthy AI and oversee compliance with regulatory requirements.
- **Stakeholder engagement:** Board members should engage with key stakeholders, including management, employees, patients, regulators, and the community, to understand their perspectives and concerns regarding AI initiatives. They should communicate transparently and effectively with stakeholders, solicit feedback, and address concerns to build trust and support for AI governance efforts.
- **Educational awareness:** Board members should stay informed about emerging trends, best practices, AI technologies, and governance innovations. They should seek opportunities for education and training to enhance their understanding of AI and its implications for healthcare organizations. Board members should leverage their knowledge and expertise to guide management and stakeholders in navigating the complexities of AI governance.

By effectively understanding and fulfilling their roles, board members can provide strategic leadership, oversight, and accountability for AI initiatives within healthcare organizations. Through active engagement, risk management, financial oversight, ethical compliance, stakeholder engagement, and educational awareness, board members can contribute to the responsible and ethical deployment of trustworthy AI technologies to drive innovation, improve patient outcomes, and advance organizational goals.

### Risk Oversight and Compliance

In an era where AI technologies are rapidly evolving, healthcare organizations face many risks related to employee and patient trust, errors, unethical or unintended practices, erosion of employee skills, privacy, security, and compliance. Board members play a critical role in overseeing the effective management of these risks and ensuring that appropriate controls are in place to manage them effectively. Here is a deeper dive into risk oversight and compliance:

- **Comprehensive risk management:** Board members should require a comprehensive risk management process to identify, prioritize, and treat AI-related risks within the organization. Board members should ensure that risk management processes are thorough, objective, and regularly updated to address emerging AI technologies, threats, and vulnerabilities.

Board members should collaborate with management to develop and implement risk management strategies tailored to the organization's AI initiatives and risk profile. The plan may include implementing technical safeguards to protect data privacy and security, enhancing transparency and accountability in AI decision-making processes, and implementing fairness and bias detection mechanisms to mitigate algorithmic biases. Board members should ensure that risk mitigation strategies are proactive, holistic, and aligned with organizational objectives and values.

- **Establishment of governance mechanisms:** Board members are responsible for establishing robust governance mechanisms to oversee AI initiatives and manage associated risks effectively. Mechanisms may include ensuring an up-to-date inventory of AI-enabled applications, developing AI governance policies, procedures, and controls, appointing a dedicated AI oversight committee, and implementing AI governance and risk management frameworks and monitoring processes. Board members should ensure that governance mechanisms align with industry best practices, regulatory requirements, and organizational goals.
- **Compliance monitoring and assurance:** Board members should monitor compliance with regulatory requirements and ethical guidelines related to AI deployment. They should stay informed about relevant laws, regulations, and industry standards governing AI technologies, data privacy, and cybersecurity. Board members should ensure that AI initiatives comply with legal and regulatory requirements and that reasonable and appropriate safeguards are in place to manage the risk to the confidentiality, integrity, and availability of sensitive data. They should establish processes for regular compliance audits and assurance reviews to assess and validate adherence to regulatory standards and organizational policies.
- **Stakeholder engagement and transparency:** Board members should engage with key stakeholders, including regulators, industry experts, patients, and the community, to enhance transparency and accountability in AI governance. They should communicate openly and transparently about AI-related risks and compliance efforts, solicit feedback, and address concerns to build trust and confidence among stakeholders. Board members should establish stakeholder engagement and communication channels to facilitate dialogue and collaboration on AI governance matters.
- **Continuous improvement and adaptation:** Board members should foster a constant improvement and adaptation culture in AI governance, recognizing that the risk landscape is constantly evolving. They should encourage innovation, learning, and knowledge sharing to stay abreast of emerging trends, best practices, and regulatory developments in AI governance. Board members should allocate resources and support initiatives to enhance AI governance capabilities, build organizational resilience, and drive sustainable risk management practices.

By implementing these strategies and best practices, board members can effectively oversee AI-related risks and ensure compliance with regulatory requirements within healthcare organizations. Through proactive risk management, compliance monitoring, stakeholder engagement, and continuous improvement efforts, board members can mitigate risks, enhance organizational resilience, and promote responsible and ethical AI deployment to drive innovation and improve patient outcomes in healthcare.

# Empowering Board Members for Effective Decision Making

In the rapidly evolving landscape of AI governance, board members play a crucial role in making informed decisions that drive organizational success. This section, together with the reference section of this toolkit, aim to empower board members with practical tools and resources to enhance their understanding of AI integration and governance and enable them to make effective decisions. Guidance on evaluating proposed AI solutions also is provided.

## Practical Tools and Resources

Board members can leverage various practical tools, templates, and resources to enhance decision-making processes and ensure effective AI governance within healthcare organizations. Here are some essential tools and resources:

- **AI governance frameworks:** Provide board members access to established AI governance frameworks and best practices developed by industry organizations such as the National Institute of Standards and Technology (NIST),<sup>4</sup> regulatory bodies, and academic institutions. These frameworks can serve as valuable guides for structuring AI governance processes, identifying key responsibilities, and establishing adequate controls and oversight mechanisms.
- **Risk assessment tools:** Offer board members access to risk assessment tools<sup>5</sup> and templates specifically designed for evaluating AI-related risks within healthcare organizations. These tools can help board members systematically identify, prioritize, and mitigate risks associated with data privacy, security, algorithmic bias, regulatory compliance, and ethical considerations.
- **Ethical decision-making guides:** Equip board members with ethical decision-making guides<sup>6</sup> and resources to navigate complex moral dilemmas and ensure responsible AI deployment. These guides can provide frameworks, principles, and case studies to help board members evaluate the ethical implications of AI initiatives and make informed decisions that align with organizational values and stakeholder expectations.
- **ROI evaluation frameworks:** Provide board members with ROI evaluation frameworks<sup>7</sup> and methodologies for assessing AI initiatives' financial and strategic impact. These frameworks can help board members quantify the return on investment, measure the value generated by AI projects, and prioritize investments based on their potential to deliver tangible benefits to the organization.

4 See [www.nist.gov/itl/ai-risk-management-framework](https://www.nist.gov/itl/ai-risk-management-framework).

5 See "First Annual Generative AI Study: Business Rewards vs. Security Risks: Research Report," *AI Today*, January 31, 2024.

6 See "A Framework for Ethical Decision Making," Markkula Center for Applied Ethics.

7 See Anand Rao, "Solving AI's ROI problem. It's not that easy," PwC, July 20, 2021.



- **Training and education programs:** Offer board members access to training and education programs focused on AI governance, ethics, and best practices. These programs can help board members better understand AI technologies, regulatory requirements, and industry trends, enabling them to make more informed decisions and provide effective oversight of AI initiatives.
- **Case studies and examples:** Present board members with examples of successful AI integration and governance initiatives within healthcare organizations. These case studies can highlight real-world challenges, best practices, and lessons learned from organizations that have successfully implemented AI projects, providing board members with valuable insights and practical guidance for decision making.

### **NIST Characteristics of Trustworthy AI<sup>8</sup>**

The NIST AI Risk Management Framework identifies the following characteristics of trustworthy AI systems:

- **Valid and reliable:** Provides accurate consistent results.
- **Safe:** Should not lead to endangerment of human life, health, property, environment.
- **Secure and resilient:** Protects against adverse events and able to respond if one occurs.
- **Accountable and transparent:** Enables visibility into how the system works and when it doesn't work, including an understanding of responsibilities associated with unintended or bad outcomes.
- **Explainable and interpretable:** Provides clarity on how the system works and the meaning of the outcome.
- **Privacy-enhanced:** Considers the controls needed to safeguard human autonomy, identity, and dignity.
- **Fair with harmful bias managed:** Ensures that concerns around equality and equity are addressed.

### **Evaluating Proposed AI Solutions**

Evaluating AI solutions in healthcare, particularly when the organization will use that solution in patient care, requires careful consideration to ensure they meet the standards of trustworthy AI. The following framework provides a comprehensive guide for board members to systematically evaluate proposed AI solutions, safeguarding patient well-being and upholding the principles of responsible AI adoption.

8 National Institute of Standards and Technology, U.S. Department of Commerce, [Artificial Intelligence Risk Management Framework \(AI RMF 1.0\)](#), 2023.

- **Human agency and oversight:** Evaluate the extent to which the AI solution respects human decision making and incorporates mechanisms for human oversight and accountability.
- **Safe for people and property:** Ensure that the use of the solution will not lead to endangerment of life, health, property, or environment. Ask the solution sponsor to provide documentation including evidence of testing, validation studies, or real-world results demonstrating the safety of the solution across a range of scenarios and conditions.
- **Transparency and explainability:** Ensure the AI solution is transparent and explains its decisions and recommendations clearly. Ask the solution sponsor to provide evidence or documentation demonstrating how the AI model works, what data it's trained on, and how it generates its outputs.
- **Data quality and bias mitigation:** Evaluate the quality and representativeness of the data used to train the AI model. Assess whether the data is diverse and inclusive to avoid biases that result in unfair or inaccurate outcomes. Request information on how the AI solution addresses bias mitigation techniques and whether it undergoes regular audits for fairness.
- **Robustness and reliability:** Assess the robustness and reliability of the AI solution under different conditions and scenarios. Inquire about the performance metrics, such as accuracy, precision, recall, and F1 score<sup>9</sup> and if and who validated the AI solution through rigorous testing and validation studies.
- **Privacy, security, and resilience:** Ensure the AI solution implements privacy and security standards to protect patient data and confidentiality. Verify that the AI solution complies with relevant regulations, such as HIPAA, and follows best data encryption, access controls, and anonymization practices. Ensure that the solution is resilient to disruptions, errors, attacks, or unexpected conditions.
- **Ethical and legal compliance:** Evaluate whether the AI solution complies with ethical guidelines and legal regulations governing healthcare and healthcare AI, such as those outlined in the AMA Code of Medical Ethics and HIPAA. Ensure the AI solution respects patient autonomy, informed consent, and professional integrity.
- **Clinical validation and evidenced-based medicine:** If relevant, require solution sponsors to provide clinical evidence and validation studies supporting the efficacy and safety of the proposed AI solution. Look for peer-reviewed publications, clinical trials, or real-world evidence demonstrating the impact of the AI solution on patient outcomes, healthcare costs, and clinical workflows.
- **Accountability:** Assess the accountability mechanisms implemented by the AI solution, including auditability, minimization and reporting of negative impacts, and mechanisms for redress.

9 The F1 score is a metric used to evaluate performance of classification models, particularly in binary classification tasks. It considers both the precision and recall of the model to provide a single score ranging from 0–1 with 1 being the best possible score.

- **Cost-effectiveness and return on investment:** Evaluate the cost-effectiveness and ROI of adopting the AI solution compared to existing standard-of-care practices. Consider factors such as implementation costs, training requirements, scalability, potential savings in time and resources, and patient outcomes.

If the board identifies concerns or reservations about a proposed AI solution, they should proceed by:

- Requesting additional information, evidence, or documentation to address their concerns.
- Engaging in open and constructive dialogue with solution sponsors to understand their rationale and perspectives.
- Seeking input from independent experts, ethicists, or regulatory authorities to validate or challenge the proposed AI solution.
- Conducting pilot studies or trials to evaluate the AI solution in a controlled environment before widespread implementation.
- Setting clear criteria and benchmarks for evaluating AI solutions and making informed decisions based on objective assessments of their alignment with trustworthy AI principles.

Ultimately, the board's role is to ensure that AI adoption in healthcare aligns with the organization's mission, values, and commitment to patient safety, quality of care, and ethical standards. By applying a rigorous evaluation framework and fostering collaboration between care providers, technologists, and stakeholders, the board can navigate the complexities of AI adoption while safeguarding the interests of patients and the broader healthcare community.

## Using AI to Enhance Board Effectiveness

It is more than just the organization that can benefit from using AI. The integration of AI presents an opportunity for boards to augment their oversight, decision making, and administrative processes as well, fostering innovation and optimizing operational efficiency. The following are some examples of how corporate boards can leverage AI to enhance their effectiveness overseeing healthcare organizations:

- **Data-driven decision making:** AI empowers corporate boards to make informed decisions by harnessing the power of data analytics. Boards can utilize AI to analyze complex datasets, identify trends, and extract actionable insights relevant to strategic planning and risk assessment. By leveraging AI-driven analytics tools, boards can enhance their ability to assess performance metrics, evaluate strategic initiatives, and anticipate emerging challenges within the healthcare landscape.
- **Scenario planning and forecasting:** AI-driven predictive modeling enables corporate boards to conduct scenario planning and forecasting with a high degree of accuracy. By leveraging AI algorithms, boards can simulate various hypothetical scenarios, assess their potential impact on organizational performance, and develop contingency plans accordingly. This proactive approach to scenario planning equips boards with the foresight needed to navigate uncertainties and capitalize on emerging opportunities in the healthcare industry.
- **Risk management and compliance monitoring:** AI technologies offer corporate boards advanced risk management and compliance monitoring capabilities. AI-powered risk assessment tools can analyze vast amounts of data to identify potential compliance breaches, cybersecurity threats, and operational risks. By leveraging AI-driven risk management solutions, boards can proactively mitigate risks, ensure regulatory compliance, and safeguard the organization's reputation and financial stability.
- **Enhanced boardroom efficiency:** AI-driven tools can streamline boardroom processes and improve operational efficiency. Boards can leverage AI-powered platforms for scheduling, agenda management, document analysis, and decision support, facilitating more productive board meetings and informed decision making. By embracing AI technologies, boards can optimize their workflows, allocate resources effectively, and focus on strategic priorities that drive organizational success.

In summary, AI presents numerous opportunities for boards in healthcare organizations to enhance their effectiveness and drive strategic value. By leveraging AI for data-driven decision making, scenario planning, risk management, and boardroom efficiency, boards can confidently navigate the complexities of the healthcare landscape and steer their organizations toward sustainable growth and innovation. Embracing AI technologies enables hospital and health system boards to fulfill their governance responsibilities more effectively and adapt to the evolving demands of today's business environment.

## Examples of Successful Applications: AI-Driven Decision Making and Information-Sharing Gains

### Example 1: Accelerating Breast Cancer Diagnosis at Boca Raton Hospital

The CBS affiliate in West Palm Beach, FL reported recently<sup>10</sup> that Boca Raton Regional Hospital is using AI to help its doctors battle breast cancer.

Dr. Louise E. Morrell, Medical Director of the hospital's Eugene M. & Christine E. Lynn Cancer Institute, says the hospital is using a commercial AI technology that scans mammogram images for any possible cancer spots. If it comes across a problem area it will circle it and give it a number on a scale for the likelihood of cancer. After the program looks at the scans, the radiologist will examine the image and consider the patient's age and risk factors to determine if the area needs to be looked at further.

Their findings required no extra biopsies or imaging. The technology is incorporated into every mammogram reading and the hospital reports that it is finding cancer sooner.

According to Dr. Morrell, AI can find things as small as a tiny seed up to two years sooner than without AI.

### Example 2: Stanford Uses AI to Navigate Health Information Sharing With Teens and Families

As covered in a recent *Healthcare IT News* story,<sup>11</sup> Dr. Natalie Pageler, Chief Health Information Officer and Division Chief, Clinical Informatics at Stanford Medicine Children's Health, and her staff saw a significant opportunity to leverage AI technology to help navigate the nuances of health information sharing with teens and their families and to increase efficiency of provider note writing, messaging, and manual monitoring programs.

"The first step in achieving these aims was to use natural language processing to set up a dual monitoring system," Dr. Pageler explained in the story. "This system was aimed at ensuring the privacy and autonomy of teenage patients while also maintaining the necessary level of guardian involvement in their healthcare.

Second, a natural language algorithm was created to monitor messages within teen patient portal accounts. The system was designed to detect any inappropriate use of the account by the guardian, such as attempts to access sensitive information.

The journey with this technology has yielded some truly transformative results, Pageler reported.

"First, our patient message algorithm uncovered a startling reality—more than 50 percent of our teen portal accounts were being inappropriately accessed by guardians,"

10 Amber Raub, "[Boca Raton hospital says artificial intelligence can detect breast cancer earlier,](#)" *CBS 12 News*, February 23, 2024.

11 Bill Siwicki, "[Stanford uses AI to navigate health information sharing with teens and their families,](#)" *Healthcare IT News*, January 30, 2024.

she said. “This was a wake-up call, highlighting a significant breach of adolescent privacy.

“But it also presented an opportunity for change,” she added. “We took immediate action, conducting further research to understand and address the issue. Our efforts culminated in the development of a custom guardrail intervention that significantly reduced inappropriate account activation errors. This solution was so effective that our vendor partner, Epic, incorporated a similar guardrail into its foundation system, extending the impact of our work to teens worldwide.”

Second, the NLP algorithm for provider notes revealed more than 20 percent of notes contained inappropriate confidential content. The automated review process powered by the algorithm was up to six times more efficient than manual review, a significant gain in productivity. But more important, it helped staff identify opportunities to improve provider note templates, making it easier for providers to document appropriately and respect adolescent confidentiality.

By providing board members with practical tools, resources, and real-world examples, healthcare organizations can empower them to make informed decisions and effectively oversee AI integration and governance efforts. Through continuous learning, collaboration, and ethical leadership, board members can drive organizational success and ensure that AI initiatives contribute positively to patient care, operational efficiency, and strategic goals.

## **Quick Guide to Developing an AI Use Policy for Your Organization**

Developing an AI use policy for healthcare organizations is crucial to ensure that AI technologies are deployed ethically, responsibly, and effectively while safeguarding patient privacy, safety, and trust. Following is a quick guide outlining key components to include in such a policy:

### **1. Introduction and purpose:**

Define the purpose and scope of the AI use policy, emphasizing the importance of ethical AI adoption in healthcare, including both clinical and non-clinical applications, and the organization’s commitment to responsible AI use to mitigate risks across all areas of operation.

### **2. Principles and values:**

Establish guiding principles aligned with organization values and Trustworthy AI, emphasizing patient-centricity, fairness, transparency, accountability, privacy, and safety across all AI applications, whether clinical or non-clinical.

### **3. Roles and responsibilities:**

Clearly define the roles and responsibilities of stakeholders involved in AI development, deployment, and governance, emphasizing the importance of human oversight and accountability in mitigating risks and ensuring the ethical and responsible use of AI technology across all organizational functions.

#### **4. Data governance and privacy:**

Outline policies and procedures for data governance and privacy protection, ensuring compliance with regulations like HIPAA and state laws, and prioritizing patient consent, data security, encryption, de-identification, and anonymization in all data-related activities, including operational and administrative processes.

#### **5. Ethical and regulatory compliance:**

Ensure compliance with ethical guidelines, professional standards, and regulatory requirements across all AI applications, addressing issues such as informed consent, non-discrimination, bias mitigation, and ethical review and oversight to protect patient interests and organizational integrity in both clinical and non-clinical contexts.

#### **6. Algorithm development and validation:**

Define standards and best practices for AI algorithm development, validation, and testing, emphasizing transparency, explainability, and rigorous validation studies to ensure the efficacy, safety, and accuracy of AI models in both clinical and non-clinical applications.

#### **7. Integration and decision support:**

Specify guidelines for integrating AI technologies into operational workflows, decision-making processes, and business operations, emphasizing human oversight and collaboration between AI developers, stakeholders, and domain experts to ensure the ethical and effective use of AI solutions across all areas of the organization.

#### **8. Engagement and communication:**

Promote transparency and open communication with stakeholders regarding the use of AI technology, educating them about the benefits, risks, and limitations of AI applications, and soliciting their input and feedback to ensure the ethical and responsible deployment of AI across all organizational functions.

#### **9. Continuous monitoring and evaluation:**

Establish mechanisms for ongoing monitoring, evaluation, and improvement of AI applications, including tracking performance metrics, outcomes, and feedback from users, and conducting regular audits and assessments to ensure compliance, quality, and safety in both clinical and non-clinical contexts.

#### **10. Training and education:**

Provide comprehensive training and education programs for staff, professionals, and stakeholders on AI literacy, ethics, and best practices, fostering a culture of continuous learning, innovation, and responsible AI use across all areas of the organization.

#### **11. Enforcement and accountability:**

Define clear procedures for enforcing the AI use policy, addressing violations or breaches, and holding individuals and entities accountable for their actions and decisions related to AI use, including implementing sanctions, disciplinary measures, or corrective actions as necessary to uphold ethical standards and mitigate risks across all organizational functions.



## **12. Review and revision:**

Commit to regularly reviewing and updating the AI use policy to reflect evolving technologies, regulations, and ethical considerations, soliciting feedback from stakeholders, experts, and the broader community to ensure its effectiveness, relevance, and alignment with Trustworthy AI principles in both clinical and non-clinical contexts.

By following this quick guide, healthcare organizations can develop a comprehensive AI Use Policy that promotes ethical AI adoption, protects patient interests, and fosters trust in AI technologies within the healthcare ecosystem.

# Conclusion

In navigating the complex landscape of AI governance within healthcare organizations, board engagement and leadership are pivotal in driving successful outcomes. This toolkit has provided board members with valuable insights, practical tools, and resources to enhance their understanding of AI integration and governance and empower them to make informed decisions.

Key insights and recommendations from the toolkit include:

- Understanding the strategic implications of AI for the organization, including opportunities, risks, and near-term and long-term impacts.
- Collaborating effectively with senior management to develop an integrated AI strategy aligned with organizational goals and values.
- Overseeing AI-related risks and ensuring compliance with regulatory requirements through robust governance mechanisms and monitoring processes.
- Empowering board members with practical tools, templates, and resources to enhance decision making and ensure effective AI governance within the organization.

In conclusion, board engagement and leadership are essential for driving AI strategy and governance initiatives forward. By actively participating in discussions, asking relevant questions, and defining leadership responsibilities, board members can provide strategic oversight, accountability, and guidance for AI initiatives. Through their commitment to ethical decision making, risk management, and stakeholder engagement, board members can ensure that AI technologies are deployed responsibly, ethically, and in alignment with organizational goals. Ultimately, board engagement and leadership are integral to unlocking the transformative potential of AI to drive innovation, improve patient outcomes, and advance healthcare delivery and management.

# References

## AI Frameworks

***Empowering AI Leadership: An Oversight Toolkit for Boards of Directors*** provides a structured approach to governing AI technologies, focusing on ethics, transparency, accountability, and regulatory compliance. It offers practical guidance for corporate boards overseeing AI initiatives and ensuring alignment with organizational goals.

Citation: World Economic Forum. [Empowering AI Leadership: An Oversight Toolkit for Boards of Directors](#). [Online].

## IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems

provides guidance on ethical considerations and principles for designing and deploying autonomous and intelligent systems, including AI technologies. It offers insights for corporate boards on transparency, accountability, fairness, and human-centricity in AI governance.

Citation: IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems. (n.d.). [Ethically Aligned Design: A Vision for Prioritizing Human Well-being with Autonomous and Intelligent Systems, Version 3](#). [Online].

***Model AI Governance Framework from Singapore*** offers practical guidance for governing AI technologies while ensuring the responsible use of personal data. It provides clear principles and best practices for data governance, transparency, fairness, and accountability. It offers valuable insights for corporate boards on managing AI-related risks and compliance with data protection regulations.

Citation: Personal Data Protection Commission Singapore. (2019). [Model AI Governance Framework](#). [Online].

## AI Risk Assessment Tools

***Artificial Intelligence Risk Management Framework (AI RMF 1.0)*** equips organizations and individuals with approaches that increase the trustworthiness of AI systems and help foster the responsible design, development, deployment, and use of AI systems over time.

Citation: National Institute of Standards and Technology, U.S. Department of Commerce. (2023). [Artificial Intelligence Risk Management Framework \(AI RMF 1.0\)](#). [Online].

***AI RMF Playbook*** is a companion resource for the AI RMF that includes suggested actions, references, and documentation guidance to achieve outcomes for the four AI RMF functions.

Citation: National Institutes of Standards and Technology, U.S. Department of Commerce. (2023). [AI RMF Playbook](#). [Online].

### **“Common Guideposts to Promote Interoperability in AI Risk Management”**

analyzes the commonalities of AI risk management frameworks. It demonstrates that, while some elements may sometimes differ, all the risk management frameworks analyzed follow a similar and sometimes functionally equivalent risk management process.

Citation: OECD (2023), [“Common guideposts to promote interoperability in AI risk management,”](#) *OECD Artificial Intelligence Papers*, No. 5, OECD Publishing, Paris.

### **Ethical Decision Making**

**AI Ethics Guidelines by the European Commission** offer AI stakeholders guidance on fostering and securing ethical and robust AI. These Guidelines seek to go beyond a list of moral principles by advising on how organizations can operationalize such principles in socio-technical systems.

Citation: European Commission. (2019). [Ethics guidelines for trustworthy AI.](#)

### **Others**

Anderson, B. and E. Sutherland (2024), [“Collective action for responsible AI in health,”](#) *OECD Artificial Intelligence Papers*, No. 10, OECD Publishing, Paris.

Google AI. (n.d.). [Responsible AI Practices.](#)

Microsoft AI. (n.d.). [Responsible AI.](#)