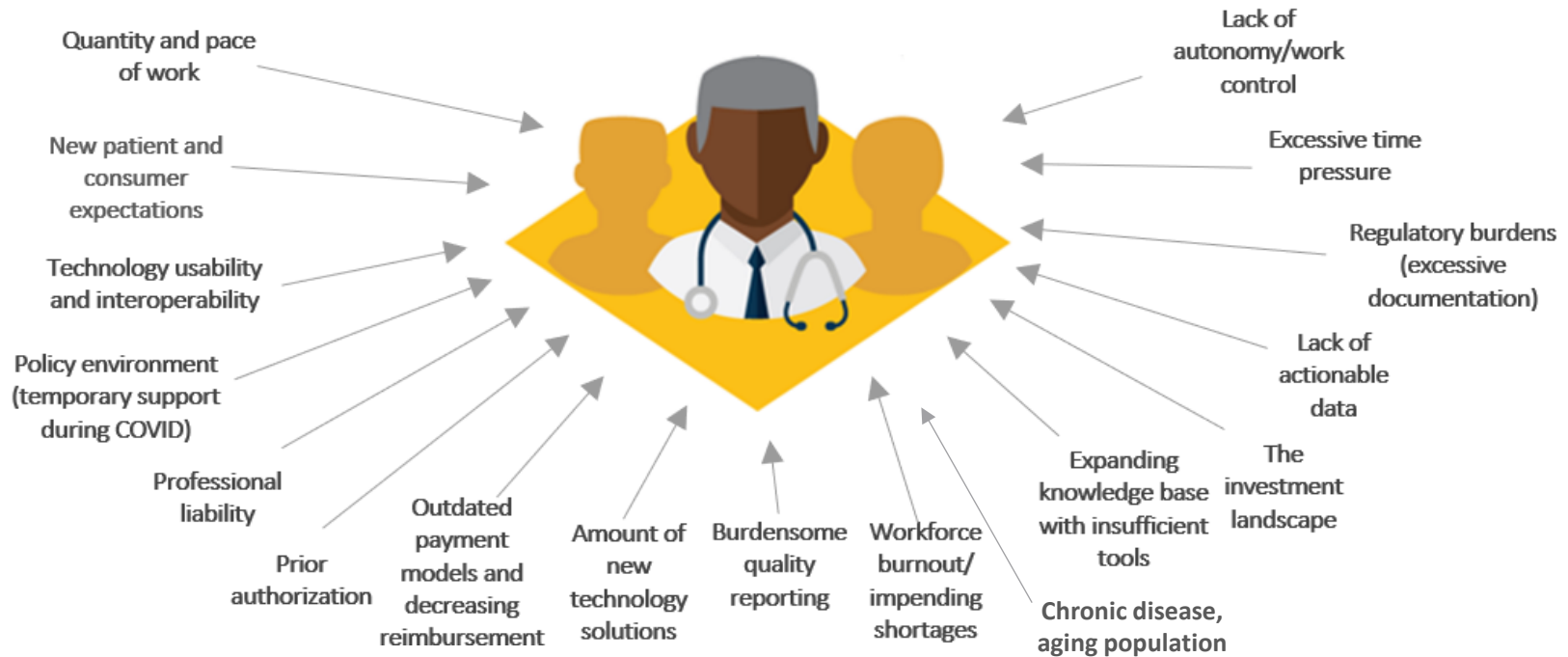




# Integrating AI into Clinical Practice

**Presenter:**  
**Dr. Margaret Lozovsky**  
**Vice President of Digital Health Innovations**  
**AMA**

# Forces impacting the future of health (and driving the use of healthcare technology in care delivery)



Empower physicians to optimize the use of existing and emerging health care technologies.

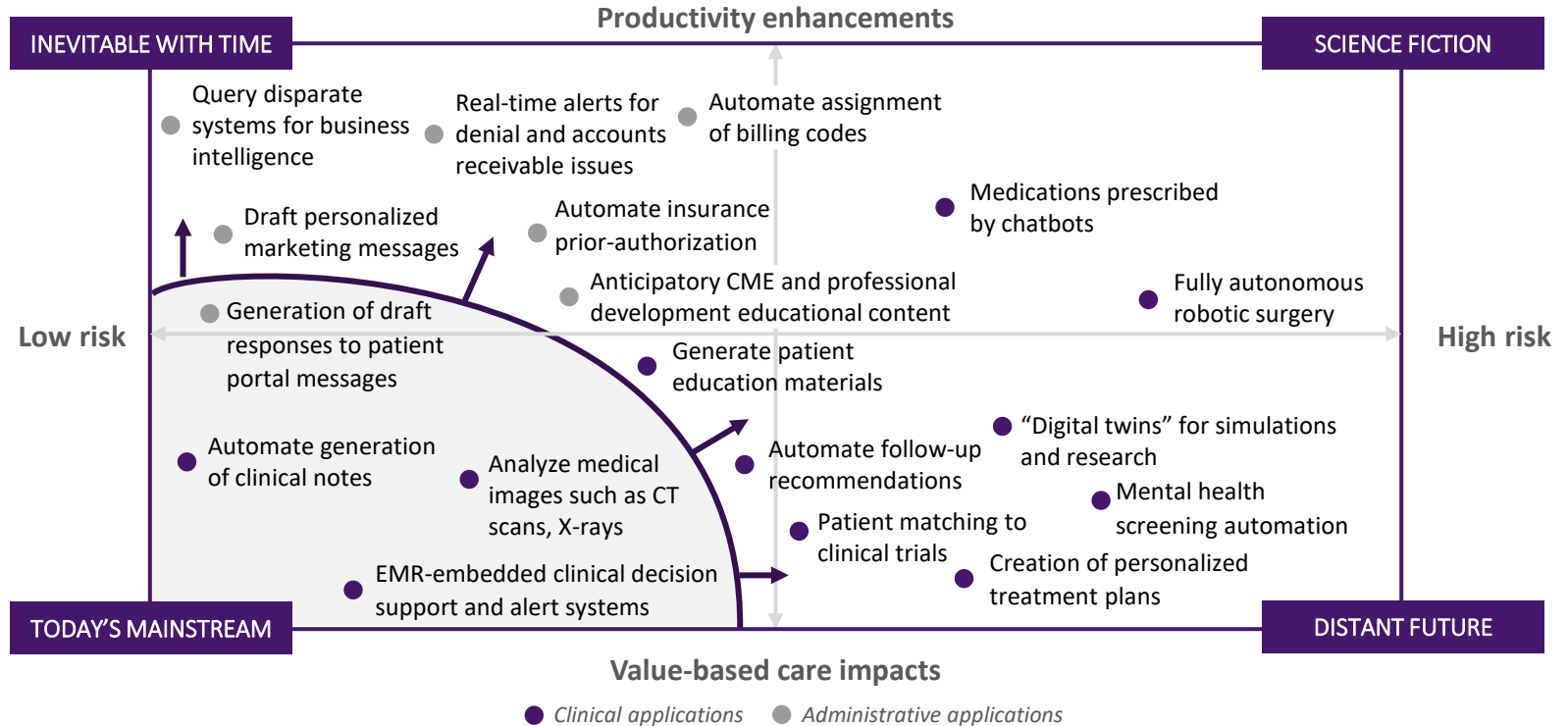
Help ensure technology enables care delivery that supports the needs of physicians, care teams, and patients.

Facilitate physician leadership in the selection, implementation, and adoption of clinical technology.

# Where AI is at and where it's going

## An AI application landscape

NOT EXHAUSTIVE



# AI Trends in Health Care



# The AI backdrop is palpable



“A.I. is not all hype. It's the 'fourth industrial revolution playing out,' says Wedbush's Dan Ives”

*June 2023 - CNBC*

“Generative AI Reaches the Peak of Inflated Expectations”

*August 2023 - Gartner*

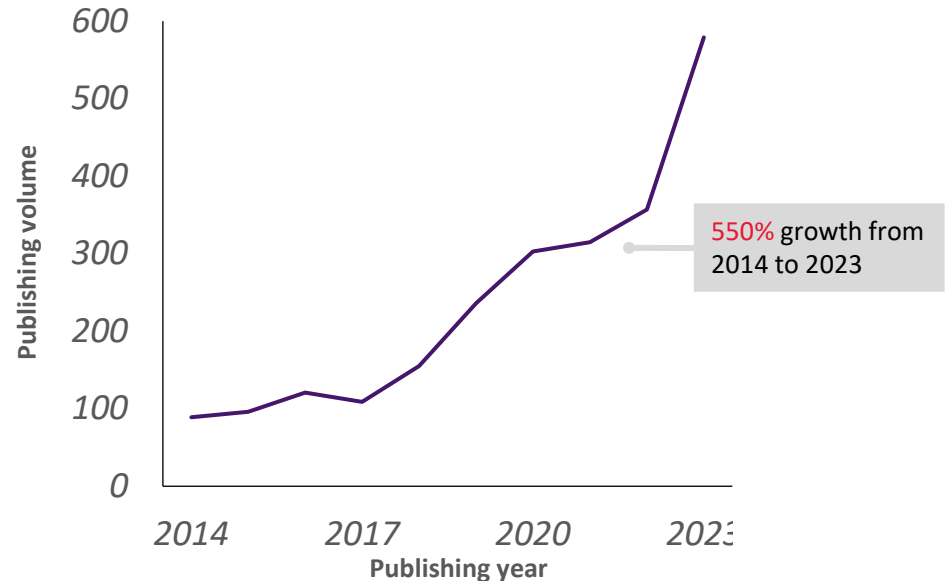
“Nation's first degree combining medicine, AI comes to San Antonio”

*September 2023 - Axios*

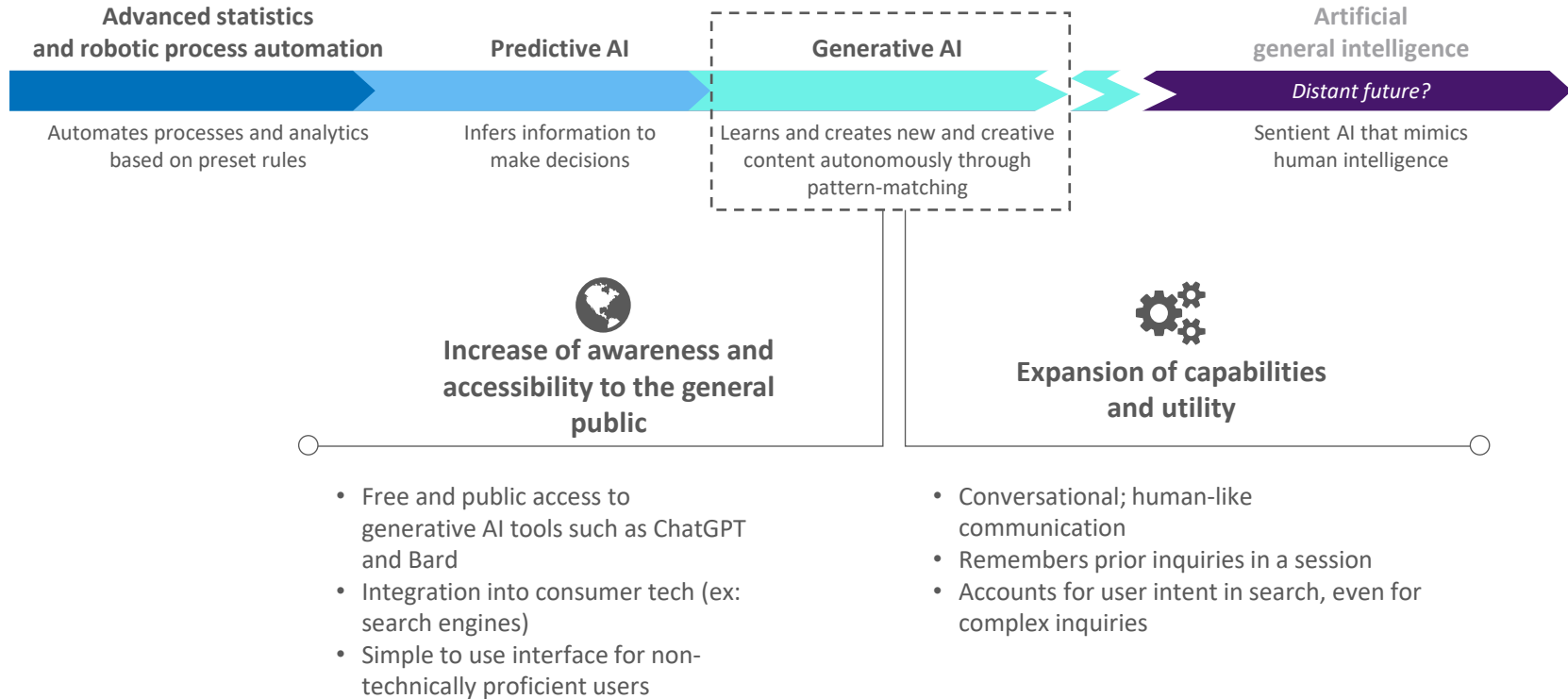


## Number of papers published in JAMA on AI

Search keywords: “AI”, “Artificial Intelligence”, “Augmented Intelligence”



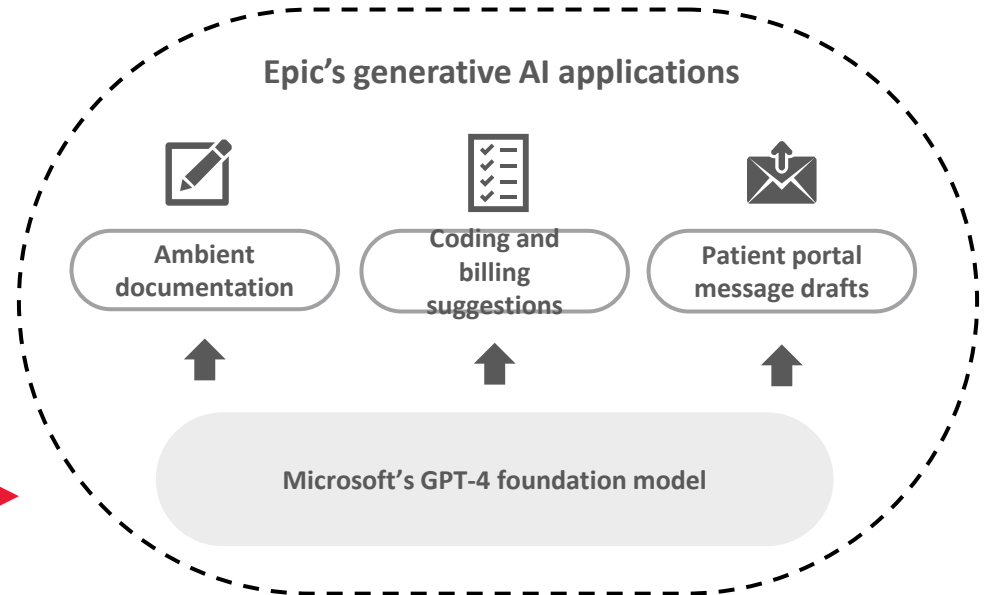
# Why this time is different



# Epic integrates three generative AI functionalities into its EMR

## Epic picking winners and losers through its third-party partner programs











- **“Showroom”**: Perceived by Epic as market-leaders (ex: Nuance, Press Ganey) or early-stage companies Epic believes are promising (ex: Abridge, Talkdesk)
- **“Cornerstone Partners”**: Companies providing solutions that are foundational to Epic’s technology (ex: Microsoft, InterSystems)



Epic chooses Microsoft as a cornerstone partner to develop generative AI applications

# Cloud providers race to create AI ecosystems

## Actions taken by major healthcare cloud providers

				
<b>Investments in generative AI companies</b>	<ul style="list-style-type: none"> <li>Primary: OpenAI (\$10B)</li> <li>Additional: Adept, Inflection AI, Inworld AI, Typeface</li> </ul>	<ul style="list-style-type: none"> <li>Primary: \$2B in Anthropic</li> <li>Additional: Runway, Cohere, Hugging Face, AI21 Labs, Synthesia, Typeface</li> </ul>	<ul style="list-style-type: none"> <li>Primary: Anthropic</li> <li>Additional: Hugging Face, OpenAI</li> </ul>	<ul style="list-style-type: none"> <li>Primary: Cohere</li> </ul>
<b>Close integrations with medical record companies</b>			<p>N/A</p>	
<b>Native integration of ambient documentation capabilities</b>				<p>Oracle Clinical Digital Assistant</p>
<b>Platforms for developers to integrate foundation models into their applications</b>	<p>Azure OpenAI</p>	<p>Vertex AI</p>	<p>Amazon Bedrock</p>	<p>Oracle Cloud Infrastructure Generative AI Services</p>



# Big tech's 2023 AI-powered healthcare product announcements

Microsoft	Google	Amazon	Oracle
<ul style="list-style-type: none"> <li>• <b>Nuance's DAX Copilot</b> automatically drafts summaries of patient conversations</li> <li>• <b>Azure AI Health Bot</b> aids staff with internal queries and patients with symptom clarification and medical term queries</li> <li>• <b>Fabric</b>, a data and analytics platform, unifies data from various sources such as EHRs, labs, claims and medical devices</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Vertex AI Search</b> can conduct searches across public websites, documents and other databases</li> <li>• <b>Smart Care Facility Platform</b> provides clinical and operational teams with real-time ambient data, such as patient condition, room status, protocol and process adherence</li> <li>• <b>Med-PaLM 2</b> answers questions and summarizes insights from a variety of dense medical texts</li> </ul>	<ul style="list-style-type: none"> <li>• <b>HealthScribe</b> automatically generates clinical notes from patient-clinician conversations</li> <li>• <b>HealthOmics</b> assists in storing, querying, and analyzing omics data (ex: genomics, proteomics) to generate insights for health improvement and scientific discoveries</li> <li>• <b>HealthLake</b> safely stores, processes, transacts, and analyzes healthcare data in a matter of minutes</li> <li>• <b>Bedrock</b> becomes open to public to support development of generative AI applications utilizing Anthropic's AI assistant, Claude</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Digital Assistant</b> enables EMR search through voice commands and patient self-service functionalities such as appointment scheduling, bill pay, health education, and appointment reminders</li> <li>• <b>Workforce Scheduling and Labor Optimization</b> to create dynamic schedules based on real-time business and patient data</li> <li>• <b>Fusion Cloud Supply Chain &amp; Manufacturing</b> updates to predict demand and direct supplies where and when needed</li> </ul>
<p>← <i>Leading</i></p>		<p><i>Chasing</i> →</p>	

# Physician sentiments on AI



There is enthusiasm around AI with 65% of physicians seeing an advantage to it.



The most common AI tools physicians are using in practice today or plan to soon focus on addressing administrative burden.

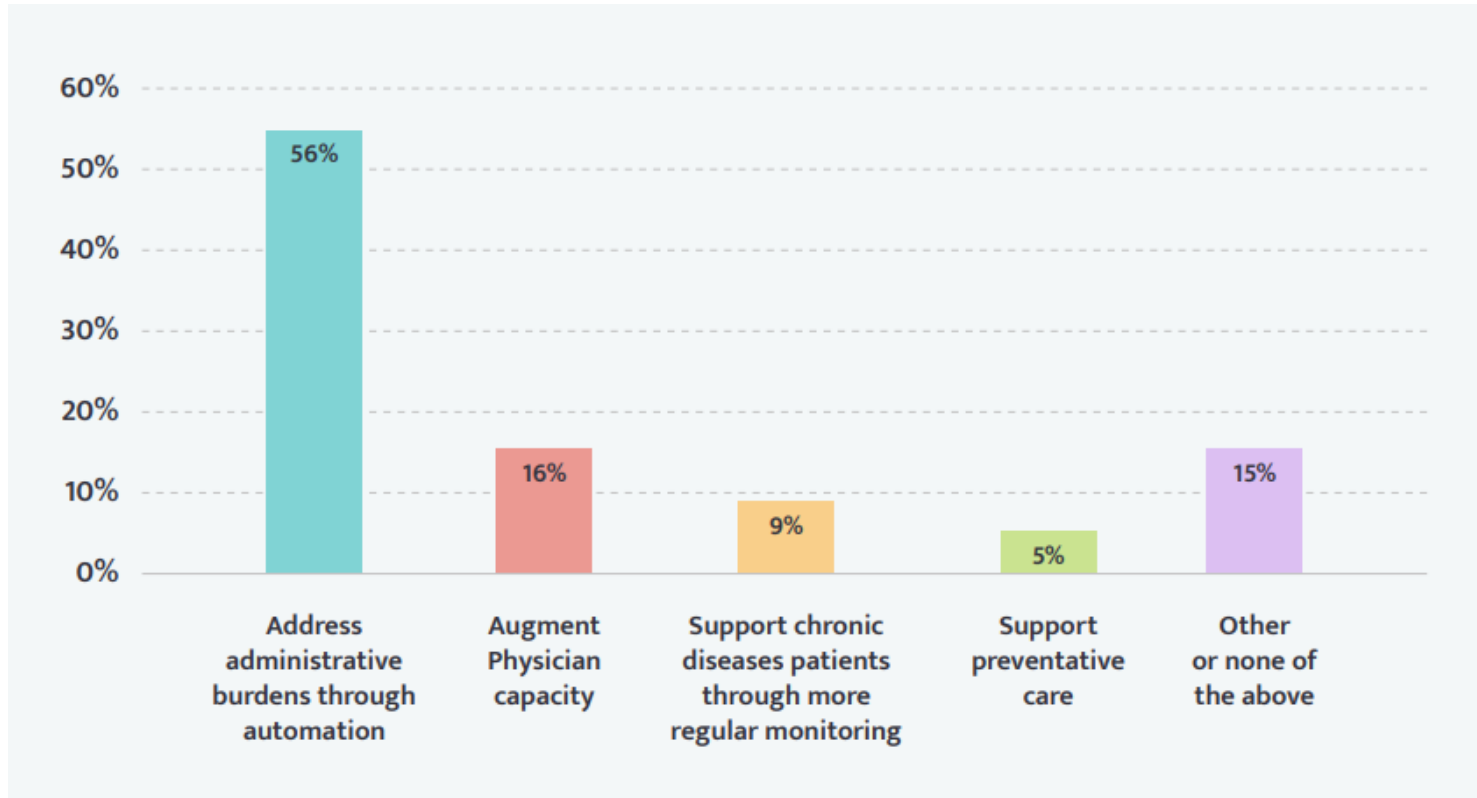


41% of physicians are both excited and concerned about the potential for AI in healthcare.



Resources and support will be crucial for physician adoption of AI.

# Key opportunities for AI in health care



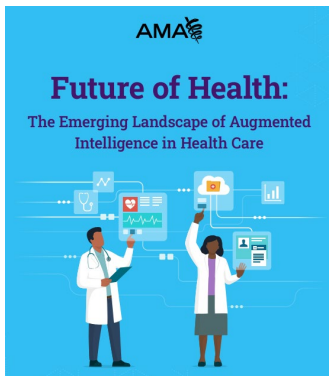
# What's the AMA doing to ensure the physician voice is leading the design, development, and implementation of AI?



# AI efforts across the AMA



Research



Convening



Resources

Phase I Identify the challenge and use cases	Phase II Evaluate AI tools	Phase III Implement AI tools	Phase IV Manage AI tools
<p><b>Problem identification</b></p> <ul style="list-style-type: none"> <li>What problem are you trying to solve with AI in your practice (e.g., increase the number of health care professionals in a workforce)?</li> <li>How would AI solve issues in your practice?</li> </ul> <p><b>Use case identification</b></p> <ul style="list-style-type: none"> <li>Do you know what address the problem?</li> <li>Are available tools good and/or are you looking for new tools?</li> <li>Who needs to be involved in identifying solutions?</li> </ul> <p><b>Resource of risks</b></p> <ul style="list-style-type: none"> <li>What are the risks for your practice?</li> <li>What are the risks for your patients?</li> <li>What are the risks for your staff?</li> <li>What are the risks for your community?</li> </ul> <p><b>Liability</b></p> <ul style="list-style-type: none"> <li>What are the risks and liabilities associated with AI in your practice?</li> </ul>	<p><b>Take one or two steps</b></p> <ul style="list-style-type: none"> <li>What data are you using to evaluate the performance of the tool?</li> <li>What data are provided to the tool?</li> <li>What data are provided to the tool?</li> </ul> <p><b>Infrastructure requirements</b></p> <ul style="list-style-type: none"> <li>What technology is needed to support the tool?</li> <li>What are the requirements for the tool to be used in your practice?</li> <li>What are the requirements for the tool to be used in your practice?</li> </ul> <p><b>Approval/evaluation</b></p> <ul style="list-style-type: none"> <li>What is the approval status of the tool?</li> <li>What are the requirements for the tool to be used in your practice?</li> </ul> <p><b>Financial implications</b></p> <ul style="list-style-type: none"> <li>What are the financial implications of using the tool?</li> <li>What are the financial implications of using the tool?</li> </ul>	<p><b>Training</b></p> <ul style="list-style-type: none"> <li>How will you train the tool?</li> <li>How will you train the tool?</li> </ul> <p><b>Implementation</b></p> <ul style="list-style-type: none"> <li>How will you train the tool?</li> <li>How will you train the tool?</li> </ul> <p><b>Workflow</b></p> <ul style="list-style-type: none"> <li>How will the tool be used in your practice?</li> <li>How will the tool be used in your practice?</li> </ul> <p><b>Infrastructure requirements</b></p> <ul style="list-style-type: none"> <li>What technology is needed to support the tool?</li> <li>What are the requirements for the tool to be used in your practice?</li> </ul> <p><b>Approval/evaluation</b></p> <ul style="list-style-type: none"> <li>What is the approval status of the tool?</li> <li>What are the requirements for the tool to be used in your practice?</li> </ul> <p><b>Financial implications</b></p> <ul style="list-style-type: none"> <li>What are the financial implications of using the tool?</li> <li>What are the financial implications of using the tool?</li> </ul>	<p><b>Maintenance</b></p> <ul style="list-style-type: none"> <li>How will you maintain the tool?</li> <li>How will you maintain the tool?</li> </ul> <p><b>Monitoring</b></p> <ul style="list-style-type: none"> <li>How will you monitor the tool?</li> <li>How will you monitor the tool?</li> </ul> <p><b>Update/upgrade</b></p> <ul style="list-style-type: none"> <li>How will you update the tool?</li> <li>How will you update the tool?</li> </ul>



Advocacy



## Principles for Augmented Intelligence Development, Deployment, and Use

Approved by AMA Board of Trustees on November 14, 2023

As the number of Augmented Intelligence (AI)-enabled health care tools and systems continue to grow these technologies must be designed, developed, and deployed in a manner that is ethical, equitable, responsible, and transparent. With a laudable effort towards adoption of national governance policies...

# Addressing the fundamentals

**APPENDIX A.1. IDENTIFYING A NEED**

## Idea Intake Form

Use this form to identify and document ideas for digital health technology.

**APPENDIX A.2. IDENTIFYING A NEED**

## Idea Prioritization Worksheet

If you are considering multiple opportunities to improve, it's important to review and prioritize them based on your organization's strategic priorities.

Use this resource to help you prioritize and select what area of opportunity you'll address using digital health technology.

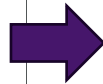
What are the current areas of opportunity at your practice? List all areas of opportunity below.

Now prioritize your areas of opportunity based on pain points and your organization's strategic priorities.

Select one area of opportunity that aligns with your organization's strategic priorities.

How might you address this opportunity area if given the resources to do so?

What are you hoping to achieve? What will success look like?

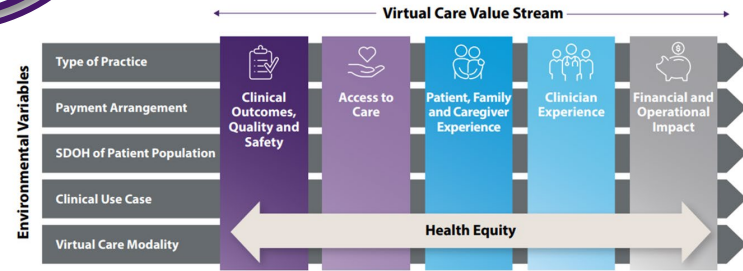
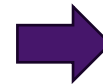
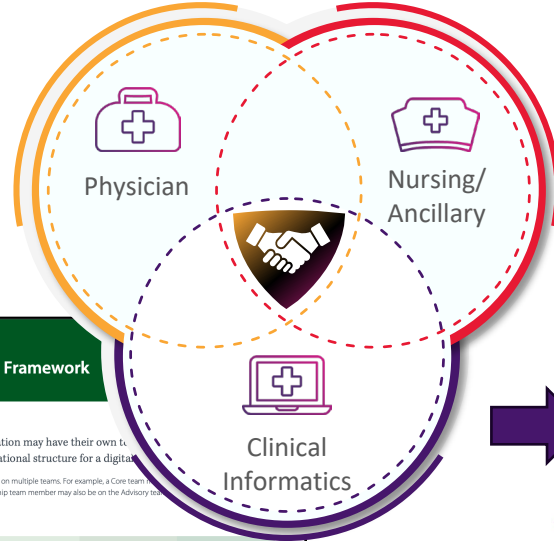


**APPENDIX B.1. FORMING THE TEAM**

## Team Structure Framework

Although every organization may have their own suggested team organizational structure for a digital health technology implementation, it's possible that one person may sit on multiple teams. For example, a Core team member may also be on the Advisory team, or a Leadership team member may also be on the Implementation team.

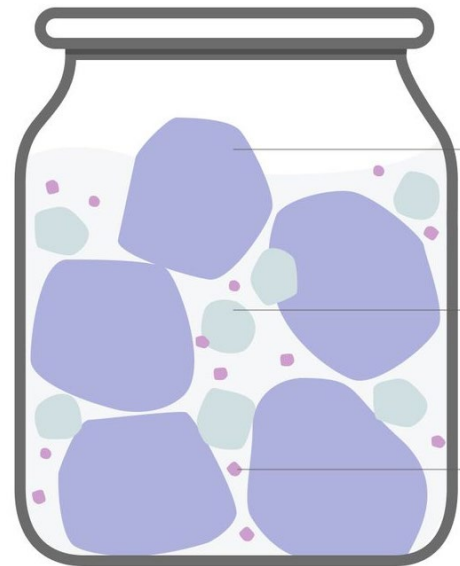
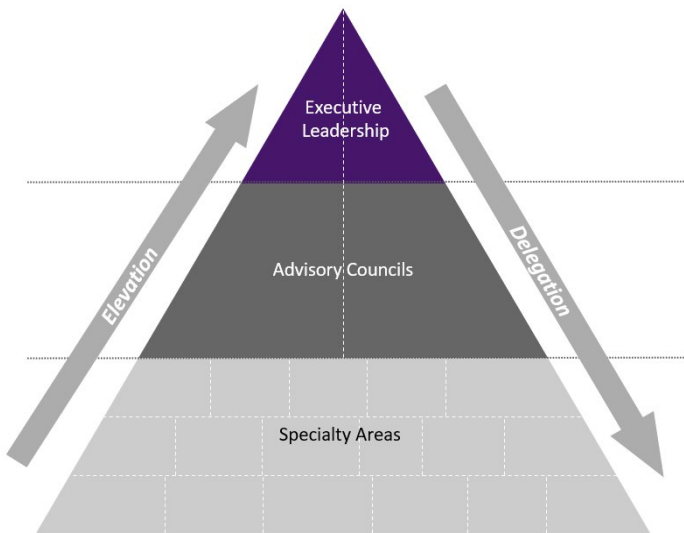
CORE TEAM	LEADERSHIP TEAM	ADVISORY TEAM	IMPLEMENTATION TEAM
<p>The team that is responsible and accountable for putting together the plan and driving the project forward day to day.</p> <ul style="list-style-type: none"> <li>Clinical Representative(s) (physician, nurse, etc.)</li> <li>Administration Representative(s) (practice manager, administrator)</li> <li>Information Technology or Information Security Representative(s)</li> <li>Project Manager(s)</li> <li>Priority Department Representative(s)</li> </ul>	<p>High-level decision-makers who authorize key decisions, provide budgetary approval, and whose alignment is important for wide-scale success.</p> <ul style="list-style-type: none"> <li>Board of Directors</li> <li>C-suite Executives</li> <li>Practice Owners/Partners</li> </ul>	<p>A group of advisors for the Core team to consult for perspective and guidance and ensure the team's decisions and leadership proposal are strategically sound.</p> <p><b>End Users:</b></p> <ul style="list-style-type: none"> <li>Practicing care team members</li> <li>Patient Advisory Board/Patient/Caregivers</li> </ul> <p><b>Organizational Navigation:</b></p> <ul style="list-style-type: none"> <li>A program sponsor</li> <li>Retired Leadership team members</li> <li>Beneficiaries</li> </ul>	<p>Close-to-the-ground teams in impacted departments who will be informed of the plans and ultimately carry out the day-to-day process of implementation.</p> <ul style="list-style-type: none"> <li>Nurse Manager</li> <li>Additional Priority Department Representatives</li> <li>Supervisor to provide on-the-ground technical support</li> <li>Information Technology or Information Security Representative(s)</li> </ul>



# The role of clinical informatics



# Establishing AI governance





# AMA AI Resources

- **AMA AI Physician Sentiments Survey:** <https://www.ama-assn.org/system/files/physician-ai-sentiment-report.pdf>
- **Future of Health: The Emerging Landscape of Augmented Intelligence in Health Care:** <https://www.ama-assn.org/system/files/future-health-augmented-intelligence-health-care.pdf>
- **Artificial Intelligence Learning Series:** <https://edhub.ama-assn.org/change-med-ed/interactive/18827029>
- **Framework for Health Care AI:** <https://www.ama-assn.org/practice-management/digital/advancing-health-care-ai-through-ethics-evidence-and-equity>
- **Principles for AI Development, Deployment, and Use:** <https://www.ama-assn.org/system/files/ama-ai-principles.pdf>



**Physicians' powerful ally in patient care**