BUILDING AI EXCELLENCE IN PRIMARY CARE

The Family Medicine AI Playbook

STFM
SOCIETY OF TEACHERS OF FAMILY MEDICINE

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This AI Playbook was developed by the Society of Teachers of Family Medicine Artificial Intelligence (AI) Task Force. The Task Force brought together family medicine leaders, educators, clinicians, researchers, informatics experts, and implementation partners to examine how artificial intelligence is emerging across the discipline and to translate those findings into a practical resource for the field.

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Contributing Organizations

The authors are deeply grateful to the family medicine organizations that participated in the environmental scan. Their willingness to share current practices, challenges, aspirations, and emerging lessons made this Playbook possible. Their contributions demonstrate the breadth of national engagement around AI in family medicine and helped ensure that the building blocks described here reflect a range of organizational contexts, geographies, populations served, and stages of AI maturity.

Environmental scan participating organizations:

Boston Medical Center
Care New England / The Warren Alpert Medical School of Brown University
Duke University School of Medicine
Full Circle Health — Caldwell Clinic (Caldwell, Idaho)
Indiana University School of Medicine
Intermountain Health
Medical College of Wisconsin
Mercy Hospital St. Louis — Family Medicine
Oregon Health & Science University
Stanford Medicine
SUNY Downstate Health Sciences University
Touro University California College of Osteopathic Medicine
Tufts University School of Medicine
The University of Alabama at Birmingham
The University of North Carolina at Chapel Hill (UNC School of Medicine)
The University of Texas Health Science Center at San Antonio (UT Health San Antonio)
University of California, Irvine
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University of Illinois College of Medicine
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University of Michigan
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University of Washington
University of Wisconsin — Madison
UPMC Williamsport
Weill Cornell Medicine
Wake Forest University School of Medicine — Academic Core of Advocate Health

Executive Summary

Family medicine is at an inflection point. AI tools are moving rapidly into the clinical, educational, operational, and research environments where family medicine organizations work every day. The question is no longer whether AI will affect family medicine, but whether family medicine will have the structures, skills, partnerships, and voice needed to shape that change responsibly.

This Playbook identifies the emerging building blocks of AI excellence in family medicine. It is grounded in a nationwide environmental scan of family medicine organizations and reflects both what organizations are doing now and what leaders believe will be needed to use AI safely, effectively, equitably, and sustainably.

A central purpose of this work is to raise all boats. At present, a small number of large, well-resourced institutions are floating high, with strong AI capacity, technical expertise, infrastructure, and early implementation experience. Many other organizations are sitting lower in the water, with less access to AI knowledge, fewer resources, and less visibility into what responsible AI capability can look like. This Playbook aims to help lift all boats, large and small, by making emerging knowledge more visible, practical, and accessible.

The building blocks are organized around six domains of AI excellence:

- ***Research, Innovation, & External Collaboration***
- ***Responsible AI Use***
- ***Education & Workforce Development***
- ***Community & Patient Engagement***
- ***AI Governance & Ethics***
- ***Data, Infrastructure, & Security***

Across these domains, the Playbook describes how capability can develop over time, from early and informal activity to more coordinated, sustainable, and field-shaping practice. Each domain includes a summary of what the environmental scan revealed, a developmental maturity pathway, practical case studies, and reflection questions to help organizations identify local strengths, gaps, and next steps.

This Playbook is intentionally developmental. It does not assume that every organization begins with a dedicated AI center, mature governance structure, robust technical infrastructure, or formal AI curriculum. Many organizations will begin with motivated individuals, early pilots, partial structures, and practical questions. Those starting points matter, and are the first step toward durable capability.

Ultimately, AI excellence in family medicine should support better care, stronger relationships, more equitable outcomes, sustainable work, meaningful learning, and greater trust. This Playbook is intended to help organizations move toward that future together.

Introduction

Why AI excellence in family medicine matters and this Playbook exists

Artificial intelligence is already entering the everyday work of family medicine. It is changing how clinicians document care, how patients communicate with care teams, how learners are trained, how research is conducted, how data is used, and how organizations approach quality, access, equity, and workforce sustainability. These changes are moving quickly, often faster than the structures, policies, training programs, and governance models needed to guide them.

Family medicine has an essential role to play in this moment. As a discipline grounded in whole-person care, longitudinal relationships, community partnership, prevention, population health, and trust, family medicine brings a perspective that AI development and implementation urgently need. AI tools that are technically impressive may still fall short if they do not fit the realities of primary care, support meaningful relationships, protect patients and communities, reduce rather than shift burden, and advance equity rather than widen existing gaps.

Responsible AI cannot be achieved through organization-level decisions alone. Local capability matters. Family medicine organizations need practical ways to participate in AI governance, support safe implementation, train learners and faculty, evaluate tools in real-world settings, protect patients and data, engage communities, and advocate for the resources and safeguards needed to use AI well.

This Playbook exists to support that work. It describes the emerging building blocks of AI excellence in family medicine and offers practical guidance for organizations at different stages of maturity. The goal is not to prescribe one model for excellence, but to help organizations see where they are, where they might go next, and how AI can be shaped in ways that support care quality, equity, workforce development, learning health systems, and community trust.

How this Playbook was developed

This Playbook was developed by the Society of Teachers of Family Medicine Artificial Intelligence Task Force and is grounded in a nationwide environmental scan designed to understand how family medicine organizations are currently approaching AI and what leaders believe will be needed to use AI responsibly in the future.

The scan included 25 academic and teaching family medicine organizations selected to reflect diversity in geography, populations served, organizational type, and level of AI engagement. An additional eight volunteer sites were included to broaden participation and capture emerging work from organizations that wanted to contribute. Across these sites, the team gathered perspectives spanning clinical care, education, research, operations, governance, infrastructure, responsible use, workforce development, and patient and community engagement.

Because the dataset was large, including dozens of interviews and hundreds of pages of transcripts, the team used a structured qualitative approach to balance scalability with analytic rigor. The goal was to identify recurring capabilities, gaps, tensions, and aspirations that could inform a practical framework for AI excellence in family medicine.

How this Playbook was developed *(cont.)*

Framework development and coder calibration

The analysis began with a sample of completed interview transcripts used to test and refine the draft Family Medicine AI Centers of Excellence framework. This process resulted in six domains that became the organizing structure for the Playbook:

- Research, Innovation, & External Collaboration
- Responsible AI Use
- Education & Workforce Development
- Community & Patient Engagement
- AI Governance & Ethics
- Data, Infrastructure, & Security

Hybrid analysis and coded evidence base

The team used a hybrid deductive-inductive thematic analysis process. A large language model supported excerpt identification and preliminary coding through iteratively refined prompts and standardized rules. The single best-fitting code was assigned, and current-state experiences were distinguished from ideal-state aspirations. Human coders reviewed and adjudicated every excerpt and code, retaining complete, final interpretive control over the analysis.

Approximately 1,000 excerpts were coded by domain. For each excerpt, the coding structure captured:

- The applicable domain
- The best-fitting code within that domain
- Whether the excerpt described a current state or an ideal state

This structure allowed the team to identify recurring practices, enabling conditions, barriers, and gaps between current and desired AI capability.

Translating findings into the Playbook

The coded excerpts were synthesized into the six domains and building blocks presented in this Playbook.

The case studies included in the domain chapters are anonymized composites drawn from patterns observed in the environmental scan. They are not intended to describe any single organization exactly. Rather, they reflect real-world examples, tensions, emerging practices, and aspirations for what responsible AI capability in family medicine could become.

The framework was further refined through Task Force review and discussion and translated into this practical resource for family medicine organizations at different stages of AI maturity.

How to use this Playbook

This Playbook is intended as an implementation-oriented field resource for family medicine organizations. It can be used by department and organizational leaders, clinicians, educators, residency and clerkship leaders, researchers, informatics and data partners, operational leaders, quality and implementation teams, community partners, and others involved in shaping responsible AI use.

Organizations can use this Playbook to:

- Orient leaders and teams to the major domains of AI excellence in family medicine
- Build shared language for discussing responsible AI capability
- Guide internal strategic planning and priority-setting
- Identify local strengths, gaps, and next steps
- Support resource requests for governance, training, infrastructure, implementation, and evaluation
- Inform conversations with institutional partners, including IT, informatics, compliance, legal, education, research, and clinical operations
- Benchmark emerging practices across the field
- Spark local discussion about how AI can support care quality, equity, workforce sustainability, learning, and trust

Each framework domain chapter explains why the domain matters, what the environmental scan revealed, how capability can develop over time, and how case studies bring those patterns to life. The case studies are anonymized composites that reflect real-world examples, tensions, emerging practices, and aspirations shared by participating organizations and leaders. Reflection questions at the end of each chapter are intended to help organizations move from discussion to action.

The Playbook is intentionally developmental. Some organizations may already have formal governance structures, AI education programs, secure infrastructure, and mature implementation processes. Others may be beginning with motivated individuals, early pilots, informal practices, or partial structures. Both starting points are valid and relevant to this Playbook. The purpose of the Playbook is to help organizations identify practical next steps from wherever they are today.

Introduction to the Family Medicine AI excellence framework

The environmental scan identified six domains that together describe the emerging building blocks of AI excellence in family medicine. These domains reflect the capabilities organizations need to develop, implement, evaluate, govern, teach, and sustain AI in ways that are responsible, equitable, practical, and aligned with the values of family medicine.

The six domains are:

1. ***Research, Innovation & External Collaboration***
   How organizations coordinate AI-related work, evaluate tools in practice, translate between research and care delivery, engage external partners responsibly, and share lessons with the broader field.

2. ***Responsible AI Use***
   How organizations implement, monitor, support, and improve AI tools once they enter day-to-day clinical, educational, and operational work.

3. ***Education & Workforce Development***
   How organizations prepare learners, faculty, clinicians, staff, and leaders to understand, use, teach, evaluate, and adapt to AI responsibly.

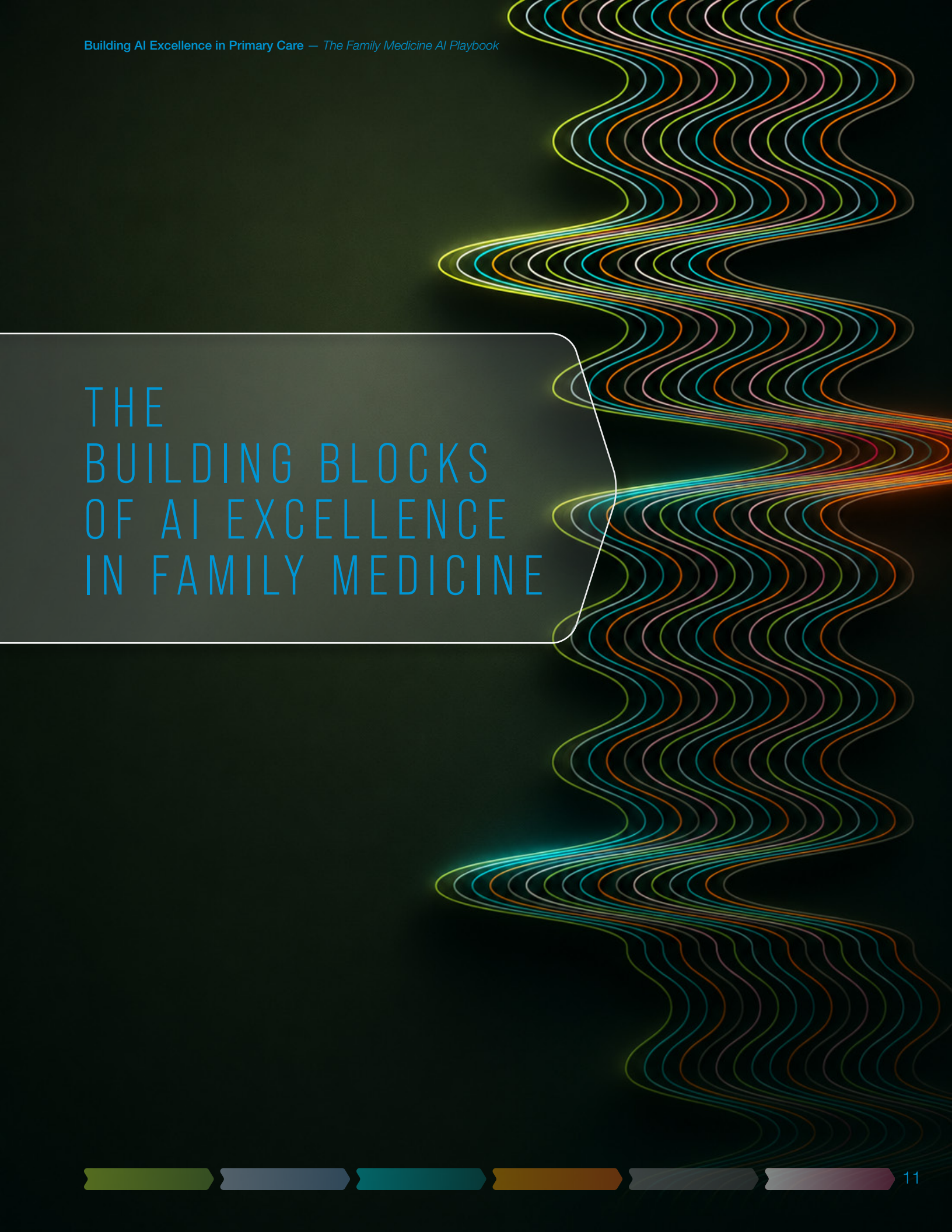
4. ***Community & Patient Engagement***
   How organizations involve patients, families, communities, and equity perspectives in AI selection, design, implementation, evaluation, and improvement.

5. ***AI Governance & Ethics***
   How organizations make decisions about AI tools, priorities, risks, safeguards, transparency, and accountability, and how family medicine perspectives are represented in those decisions.

6. ***Data, Infrastructure & Security***
   How organizations build the technical foundations, data pathways, IT partnerships, privacy protections, and security safeguards needed to support responsible AI work.

Within each domain, the Playbook identifies specific building blocks that emerged from the environmental scan. These building blocks are not meant to imply that every organization must develop in the same way or at the same pace. Rather, they provide a practical framework for understanding what AI capability can look like as organizations move from early activity toward more coordinated, sustainable, and field-shaping practice.

The domain chapters that follow describe each area in greater detail. Together, they offer a shared language for family medicine organizations working to shape AI in ways that support patients, communities, clinicians, learners, and the future of primary care.



THE BUILDING BLOCKS OF AI EXCELLENCE IN FAMILY MEDICINE

RESEARCH, INNOVATION & EXTERNAL COLLABORATION

Research, Innovation & External Collaboration

Domain purpose

Family medicine organizations have an important role to play in shaping how AI is developed, evaluated, implemented, and improved over time. This domain focuses on the people, structures, partnerships, and translation pathways that help organizations move AI work from isolated ideas or one-off projects toward coordinated, responsible, and useful capability.

This matters because AI in family medicine needs to be connected to the realities of primary care, including whole-person care, longitudinal relationships, population health, team-based workflows, education, and community trust. Organizations need ways to identify practical AI opportunities, connect research and evaluation with real care delivery needs, engage external collaborators responsibly, and share lessons learned with the broader field.

By strengthening this domain, organizations can better coordinate AI-related work, reduce duplication, support responsible innovation, and advocate for the resources and partnerships needed to ensure AI-enabled efforts reflect the needs of patients, clinicians, learners, staff, and communities.

What the environmental scan revealed

The environmental scan suggested that this domain functions as a critical translation layer for AI in family medicine. Across the scan, organizations and leaders emphasized that AI excellence is not only about identifying promising tools. It requires the ability to evaluate AI in real-world settings, determine whether tools are useful and safe, connect findings to implementation decisions, and share lessons so others can learn faster.

Several building blocks emerged as especially important:

Formally identified AI roles emerged as a central enabler. Leaders consistently pointed to the need for identifiable people, ideally with protected time, holding responsibility for coordinating AI work, connecting stakeholders, and helping family medicine organizations move beyond informal enthusiasm or isolated project activity.

A clear centralized leadership and coordinated support function emerged as an important aspiration for many organizations. While some organizations described early coordination structures, many described a more formal family medicine AI "hub" or central support function as something they wanted but had not yet fully built. This suggests a practical opportunity for organizations to create clear pathways for AI related engagement, rapid evaluation support, and connection to the right expertise.

Bidirectional translation between research and clinical operations was one of the strongest themes. Organizations need standing ways for practice needs to shape AI research and evaluation, and for evaluation findings to inform decisions about implementation, scaling, or discontinuation. This was closely tied to the need for credible, practice-based evaluation.

Responsible external partnership practices were noted as important, because many AI opportunities involve collaboration with commercial entities, academic partners, health systems, or other organizations. The scan highlighted the need for clear expectations around roles, communication, safeguards, value exchange, and shared learning as family medicine enters into external AI partnerships.

Intentional dissemination and knowledge sharing appeared less frequently than other themes, but when it emerged, it reflected an important field-shaping function: packaging and sharing lessons so that family medicine organizations do not have to solve the same problems in isolation.

Taken together, these findings suggest that AI excellence in this domain depends on the ability to coordinate people, evaluate tools in practice, translate between research and operations, engage partners responsibly, and share what is learned with the broader field.

How capability develops over time

Foundational Capability

At the foundational stage, organizations are beginning to identify individuals and pathways for AI work in family medicine. They may not yet have a fully developed AI center or formal support structure, but they are taking intentional steps to coordinate emerging work and connect it to practical care needs.

Organizations at this stage often begin by:

- Identifying one or more individuals with responsibility for helping build and coordinate primary-care AI capability.
- Defining a pathway for practice needs to connect with and inform ongoing AI research, development, and evaluation efforts.

Integrated Capability

At the integrated stage, organizations are moving toward coordinated and sustainable support for AI work. They have more clearly defined roles, stronger routing mechanisms, and more intentional ways to connect AI research, operations, education, clinical implementation, and external collaboration.

Organizations at this stage often strengthen capability by:

- Designating named, resourced roles with protected time or equivalent to lead and support primary-care AI across clinical, operational, and research needs.
- Maintaining centralized AI leadership and coordinated support function that creates visibility, routes requests to the right expertise, offers rapid evaluation support, and reduces duplication across research, education, and clinical efforts.
- Maintaining a bidirectional process that connects AI research and clinical operations so practice needs inform pilots or evaluations and findings inform implementation decisions.
- Using a defined approach for engaging external collaborators, including commercial entities, with basic expectations for roles, communication, safeguards, and shared goals.
- Maintaining an intentional dissemination pathway for AI-enabled work, including internal share-outs and external venues when appropriate.

Field-Shaping Capability

At the field-shaping stage, organizations have mature translational and partnership models that influence AI practice beyond their local setting. They are not only implementing or evaluating AI tools; they are helping define how responsible AI should be developed, partnered, scaled, and shared in family medicine.

Organizations at this stage often demonstrate broader leadership by:

- Maintaining a mature translational model, supported by leadership and aligned with broader organizational priorities, that moves AI innovations from evaluation into implementation, scaling, and standard work.
- Applying a mature, responsible partnership model for external collaborations, including clear value exchange, project cadence, safeguards, and expectations for shared learning and/or dissemination when appropriate.
- Sharing AI-enabled work, lessons learned, and practical guidance nationally and internationally.

Practical case studies

The case studies in this section are anonymized composites drawn from patterns observed in the environmental scan. They are not intended to describe any single organization exactly. Rather, they reflect real-world examples, tensions, emerging practices, and aspirations shared by participating family medicine organizations and leaders.

Case Study 1: Creating a visible family medicine AI coordination role

Maturity reflected: *Foundational capability*

At a family medicine department where there is no formal AI center, several people organically begin to play clear coordination roles as opportunities emerge. A faculty member with informatics expertise, an operational leader, and a research-oriented faculty member help colleagues navigate AI-related questions, identify promising use cases, connect with institutional resources, and bring primary care needs into broader technology conversations.

The work is still early and not fully resourced, but the organization has moved beyond scattered individual interest. AI questions no longer live only with whoever happens to be enthusiastic. There are identifiable people who help make sense of opportunities, connect the right partners, and keep family medicine needs visible as institutional AI activity increases.

This is an early but important form of capability that often emerges organically, and is an important step towards making AI coordination visible before a formal center or mature support structure exists.

This case study shows how early capability can begin through:

- Identified AI roles
- Bidirectional translation between research and operations
- Early movement toward a clear, centralized AI leadership and coordinated support function

Case Study 2: Using research infrastructure to evaluate an AI tool before scaling

Maturity reflected: *Integrated capability*

At a family medicine department with research and evaluation capacity, an ambient AI documentation pilot becomes a bridge between research discipline and operational decision-making. Department leadership provides modest support for a research team, which helps design the evaluation, identify measures, support review needs, collect clinician feedback, and analyze outcomes over time.

The evaluation includes multiple checkpoints, survey data, operational measures, and structured feedback from participating clinicians. Because clinical operations is closely involved, the findings are not treated as a side research product. They inform whether the tool should continue, scale, be modified, or reconsidered.

This reflects a more integrated approach, where research and evaluation are not separate from implementation but directly inform decisions about whether a tool should continue, scale, be modified, or be reconsidered.

This case study shows how organizations can build capability through:

- Bidirectional translation between research and operations
- Practice-based evaluation and implementation science
- Identified AI roles with protected time
- Intentional dissemination and knowledge sharing, when findings are shared beyond the pilot team

Case Study 3: Building a coordinated AI support function from existing infrastructure

Maturity reflected: *Integrated capability*

In a larger family medicine organization with several AI-related efforts already underway, leaders begin to see the need for a more coordinated support function. Rather than creating an entirely new center at the outset, the organization begins pulling together existing structures, including informatics leaders, research faculty, clinical operations partners, evaluation support, and departmental leadership.

Over time, this becomes an emerging support structure for AI work. The group meets regularly and helps maintain visibility into active projects, identify where evaluation is needed, connect teams to data or informatics support, and reduce duplication across efforts. The model is not yet a fully mature AI hub, but it creates a clearer centralized leadership structure for AI ideas and a more reliable way to move projects from interest to evaluation to implementation decision-making.

This shows integrated capability because the organization is creating a practical way to connect people, requests, expertise, and implementation decisions across AI-related work.

This case study shows how organizations can build capability through:

- Clear, centralized AI leadership and coordinated support
- Resourced AI roles with protected time
- Bidirectional translation between research and operations

Case Study 4: Partnering with an external company to improve a tool in practice

Maturity reflected: *Integrated moving toward field-shaping capability*

In an external collaboration focused on clinical chart summarization, a family medicine organization partners with an AI company to test and refine the product in real primary care workflows. Clinicians provide repeated feedback on how the tool performs in day-to-day practice, including whether summaries surface the right information, preserve important clinical context, and avoid misleading omissions. The company uses that feedback to refine the product, while the organization gains early experience with the tool and helps shape it toward practical use in family medicine.

The partnership also includes a lightweight value exchange. Faculty time is supported by funding from the vendor for modest stipends or protected effort for structured feedback sessions, and the organization receives early access to the product at a discounted rate during the evaluation period, acknowledging the value of clinical expertise and real-world testing while keeping the collaboration practical and feasible.

This reflects integrated capability when the organization has clear, value-driven expectations, feedback loops, safeguards, and shared goals for working with an external partner. It begins to move toward field-shaping capability when lessons from the partnership are packaged for broader learning.

This case study shows how organizations can build capability through:

- Responsible external partnership practices
- Bidirectional translation between research and operations
- Intentional dissemination and knowledge sharing, when lessons are packaged for others

Questions for local reflection

Organizations can use the following questions to consider their own strengths, gaps, and next steps in this domain:

1. Who currently helps coordinate AI-related work in our organization, and is that responsibility visible to others?
2. Where do AI ideas, requests, pilots, or partnership opportunities go today?
3. How do practical care delivery needs inform AI research, evaluation, or implementation decisions?
4. How are external AI collaborations selected, structured, and managed responsibly?
5. What lessons from AI-related work are being shared internally or externally?
6. What is one practical step we could take in the next 3–6 months to strengthen coordination, translation, partnership, or dissemination in this domain?

2 RESPONSIBLE AI USE

Responsible AI Use

Domain purpose

Responsible AI use focuses on how organizations implement, monitor, support, and improve AI tools once they begin entering day-to-day work. This domain is about moving beyond simply making AI tools available. It asks whether organizations have practical ways to guide safe use, support adoption, gather feedback, monitor impact, and adjust over time as tools are used in real clinical, educational, operational, and administrative settings.

This matters because many of the earliest and most visible AI use cases in family medicine are already affecting everyday work: ambient documentation, in-basket message drafting, chart summarization, population health tools, clinical decision support, operational workflows, and administrative support. These tools may reduce burden, improve access, and help clinicians spend more time focused on patients, but they also introduce questions about accuracy, privacy, overreliance, workflow fit, equity, training, and trust.

By strengthening this domain, organizations can create the conditions for AI tools to be used safely and meaningfully. Responsible AI use requires clear guidance, practical implementation methods, ongoing learning loops, and support for the people expected to use these tools in real practice.

What the environmental scan revealed

The environmental scan suggested that responsible AI use is where AI becomes most tangible for clinicians, learners, staff, and patients. Across many organizations, ambient documentation emerged as the most common and mature example of AI use in family medicine. Participants described these tools as helping reduce cognitive load, note burden, "pajama time," and screen-focused interactions during visits. At the same time, leaders emphasized that these tools still require thoughtful implementation, training, monitoring, and adjustment.

Several building blocks emerged as especially important:

Ongoing AI oversight and shared learning emerged as a core need because AI tools often perform differently across users, settings, workflows, and patient populations. Some organizations described strong clinician enthusiasm for particular tools, while others found those same tools poorly aligned with existing workflows. Several also reported changing vendors, discontinuing tools that did not perform as expected, or seeking dashboards capable of showing how tools were being used and whether they were producing meaningful value. This reinforced the need for feedback loops, reporting, and mechanisms to learn from real-world use.

Consistent framework-guided implementation was important because AI tools cannot simply be turned on and expected to work smoothly. Participants described pilots, phased rollouts, 'request-for-proposal' processes, vendor changes, user feedback, workflow adjustments, and the need to study tools in practice. The strongest examples treated AI implementation as a disciplined process of designing, testing, learning, adapting, and deciding whether to continue, scale, modify, or stop.

A transparent inventory of AI in use emerged as an important coordination need. Several organizations described many AI efforts happening across clinical care, education, operations, research, and institutional initiatives, sometimes with limited awareness across groups. As AI tools become embedded in EHR platforms and administrative workflows, organizations need visibility into what tools are in use, who is using them, and what they are intended to do.

Privacy-safe, HIPAA-aligned AI use practices appeared as a foundational concern. Participants saw value in AI tools but also expressed caution about patient confidentiality and privacy, appropriate data use, patient-facing communication, and whether tools were approved for particular uses. Responsible use depends on clear guidance about what tools may be used, what data may be entered, and how AI-generated outputs should be reviewed.

Training and adoption support for approved AI tools was a recurring theme. Even when tools were available, adoption varied. Some clinicians became champions after seeing the benefit; others remained hesitant, disliked the workflow, lacked access because of device constraints, or needed clearer education. Organizations demonstrating stronger capability did not assume that access alone would lead to rapid adoption and responsible use. They provided formal guidance, dedicated organizational support, and just-in-time learning opportunities.

Taken together, these findings suggest that responsible AI use depends on an organization's ability to make AI tools visible, implement them thoughtfully, support users, protect patients and data, and learn continuously from real-world experience.

How capability develops over time

Foundational Capability

At the foundational stage, organizations are beginning to establish basic practices that allow AI tools to be used safely and intentionally. They may have early feedback processes, basic guidance for approved tools, an initial inventory of AI use, and emerging support for clinicians, learners, or staff using AI in day-to-day work.

Organizations at this stage often begin by:

- Defining a process to gather and review user feedback on AI tools in use and make basic adjustments when problems or opportunities are identified.
- Using a repeatable approach to design, test, and improve AI-enabled workflows rather than relying on ad hoc implementation.
- Maintaining a basic inventory of AI tools in use and pilots underway and updating it periodically for internal visibility.
- Maintaining privacy-safe, HIPAA-aligned AI use practices, with clear guidance on approved tools, permissible data, and handling of prompts and outputs.
- Offering basic guidance and support for approved AI tools, including how to access basic help for day-to-day use.

Integrated Capability

At the integrated stage, organizations are moving from basic responsible use practices toward coordinated, repeatable, and actively managed AI implementation. They have clearer ownership, defined cadences for review, structured training, and more transparent ways to track AI tools, pilots, and projects across family medicine.

Organizations at this stage often strengthen capability by:

- Using a structured oversight-and-learning loop with clear ownership and cadence to assess whether AI tools meet end-user needs and guide ongoing improvements in workflow and user experience.
- Identifying and consistently using established implementation frameworks or methods to guide how AI workflows are designed, tested, evaluated, and improved over time.
- Maintaining internally and externally facing inventories of AI tools used in family medicine, refreshed on a defined cadence and used to coordinate support.
- Providing structured training and adoption support for approved AI tools, including just-in-time training and clear guidance for safe day-to-day use.

Field-Shaping Capability

At the field-shaping stage, organizations have mature learning systems that help guide responsible AI use across tools, settings, and user groups. They are not only supporting local adoption; they are generating broader lessons about how AI tools can be implemented, monitored, refined, and spread responsibly in family medicine.

Organizations at this stage often demonstrate broader leadership by:

- Maintaining a leadership-supported learning system that synthesizes feedback and evaluation across AI tools in clinical, education, and research settings to strengthen responsible use, guide broader implementation decisions, and scale effective practices over time.
- Maintaining a mature training and adoption support model for approved AI tools that is actively used, regularly refined, and integrated into efforts to promote responsible use and spread effective practice.

Practical case studies

The case studies in this section are anonymized composites drawn from patterns observed in the environmental scan. They are not intended to describe any single organization exactly. Rather, they reflect real-world examples, tensions, emerging practices, and aspirations shared by participating family medicine organizations and leaders.

Case study 1: Establishing safe-use expectations for AI-generated patient communication

Maturity reflected: *Foundational capability*

As AI tools begin supporting patient-facing communication, a family medicine organization develops practical expectations for how draft portal-message responses and translated patient instructions should be reviewed and used. Clinicians see practical value in these tools because they can help generate timely, clear, and patient-friendly language. At the same time, leaders recognize that patient-facing outputs require careful review, especially when translation, clinical advice, or personal health information is involved.

The organization decides to outline practical day-to-day rules for safe use. Clinicians are expected to use approved tools, review and edit AI-generated outputs before sending them, avoid entering sensitive information into unapproved systems, and follow local expectations for translated materials and clinical communication.

This is a foundational form of responsible AI use wherein the organization has translated broad privacy and safety principles into practical guidance clinicians can follow in daily work.

Building blocks illustrated:

- Privacy-safe, HIPAA-aligned AI use practices
- Training and adoption support for approved AI tools
- Ongoing AI oversight and shared learning

Case study 2: Creating a feedback loop for ambient documentation

Maturity reflected: *Foundational moving toward integrated capability*

During an ambient documentation rollout in primary care, leaders quickly learn that responsible use requires more than making the tool available. Early users describe meaningful benefits, including less screen-focused work, reduced after-hours charting, and lower cognitive load, but the tool does not fit every clinician, visit type, or workflow equally well.

The organization creates a basic learning loop around the tool. Clinicians provide feedback on what works, where the tool fits or does not fit their workflow, and what support they need to use it safely. Leaders use this feedback to identify adoption barriers, training needs, and workflow adjustments.

This is foundational because the organization has a way to hear from users, review what is being learned, and make basic adjustments. It moves toward integrated capability when that feedback is reviewed on a defined cadence, connected to clear ownership, and used to guide broader implementation decisions.

Building blocks illustrated:

- Ongoing AI oversight and shared learning
- Training and adoption support for approved AI tools
- Consistent framework-guided implementation

Case study 3: Using structured testing to decide whether to stop or redesign an AI tool

Maturity reflected: *Integrated capability*

In an effort to reduce patient message burden, a family medicine organization pilots an AI-enabled in-basket draft response tool. The use case is highly relevant to primary care, but during testing, users find that the tool does not reliably generate responses that fit clinical needs or workflow expectations.

Informatics partners attempt to improve the prompt and workflow, users provide feedback, and the organization pauses broader spread until the tool can better meet clinical and workflow expectations.

This shows integrated capability because the organization has enough implementation discipline to test the tool in practice, assess fit, involve the right expertise, and make a go/no-go decision.

Building blocks illustrated:

- Consistent framework-guided implementation
- Ongoing AI oversight and shared learning
- Maintained and transparent inventory of AI tools and pilots

Case study 4: Maintaining visibility across multiple AI tools and pilots

Maturity reflected: *Foundational moving toward integrated capability*

In a larger organization, AI tools begin emerging across clinical care, education, and research faster than leaders can easily track, coordinate, and support. These include ambient documentation, chart summarization, message drafting, coding support, population health tools, AI-supported learning and assessment tools, and generative AI tools supporting literature review and data analysis.

In response to this challenge, the organization creates a more transparent view of AI activity, including which tools are approved, which pilots are active, who is using them, what use cases they support, and where governance, privacy, implementation, evaluation, or training support may be needed. This helps leaders coordinate support, reduce duplication, and identify where additional oversight or education is needed.

At a foundational level, this kind of inventory creates needed visibility. It becomes more integrated when the inventory is updated regularly and used to coordinate support, reduce duplication, identify training needs, and inform governance or implementation decisions.

Building blocks illustrated:

- Maintained and transparent inventory of AI in use
- Ongoing AI oversight and shared learning
- Training and adoption support for approved AI tools

Case study 5: Building analytics to understand whether AI tools are being used and helping

Maturity reflected: *Integrated capability*

As AI tools become more widely available, leaders in a family medicine organization begin asking for reporting similar to existing clinical performance dashboards. They want to know not only whether a tool has been made available, but whether clinicians are using it, whether use varies across settings, and whether it is associated with meaningful improvement to relevant outcomes.

Rather than relying only on anecdotal feedback, the organization begins connecting usage data, user experience surveys, workflow measures, and outcomes. Mixed-methods reporting helps leaders identify barriers and facilitators to adoption, where a tool is not delivering value, and where effective practices could be spread.

This reflects integrated capability when reporting is used to guide local implementation and improvement. It begins to approach field-shaping capability when the organization synthesizes what it is learning and shares practical guidance with others.

Building blocks illustrated:

- Ongoing AI oversight and shared learning
- Maintained and transparent inventory of AI in use
- Training and adoption support for approved AI tools

Questions for local reflection

Organizations can use the following questions to consider their own strengths, gaps, and next steps in this domain:

1. What AI tools are currently being used in our organization, and do we have visibility into who is using them, for what purpose, and with what support?
2. How do we gather feedback from clinicians, learners, staff, or patients about whether AI tools are useful, safe, accurate, and workable in real practice?
3. What process do we use to design, test, evaluate, improve, scale, or stop AI-enabled workflows?
4. What guidance do users have about approved tools, permissible data, output review, and privacy-safe AI use?
5. How are users trained and supported when approved AI tools are introduced or changed?
6. What is one practical step we could take in the next 3–6 months to strengthen responsible AI use across our organization?

3 EDUCATION & WORKFORCE DEVELOPMENT

Education & Workforce Development

Domain purpose

Education and workforce development focuses on how organizations prepare learners, faculty, clinicians, staff, and leaders to understand, use, teach, evaluate, and adapt to AI responsibly. This domain is about more than adding a lecture on AI. It asks whether organizations are building the knowledge, skills, supports, and guardrails needed for people to participate meaningfully in an AI-enabled future of family medicine.

This matters because AI is already changing how clinicians document, communicate, search for information, prepare educational materials, support learners, manage administrative work, and make sense of clinical data. At the same time, many people are still learning what AI is, what it can and cannot do, which tools are safe to use, and how to avoid overreliance. Faculty may be expected to teach and supervise AI use before they feel fully prepared themselves.

By strengthening this domain, organizations can build shared AI literacy, support faculty and learner development, create fair access to approved tools, and preserve core clinical and educational skills as AI becomes more embedded in everyday work.

What the environmental scan revealed

The environmental scan suggested that workforce capability is one of the clearest and most immediate needs for family medicine. Across many organizations, leaders described learners and faculty already using AI tools, but often through individual experimentation, peer-to-peer sharing, or ad hoc local efforts rather than a coordinated education strategy. Many participants emphasized that AI education needs to be ongoing because the technology is changing quickly and the skills required will continue to evolve.

Several building blocks emerged as especially important:

AI education strategy across learner groups emerged as a major need. Organizations described efforts to integrate AI into undergraduate, graduate, and continuing medical education, as well as faculty development, and staff education, but maturity varied widely. Some had single lectures, retreats, or elective experiences, while others were beginning to build more formal curricula. Leaders emphasized that students and residents will increasingly expect AI to be part of training, and that organizations need to teach not only how to use tools, but how to think critically about them.

Faculty development and career growth in AI was a recurring theme. Many organizations had enthusiastic early adopters, but fewer had systematic structures to help practicing faculty develop AI literacy or deeper AI capability over time. Participants described faculty retreats, workshops, mentorship, institutional seminars, and informal peer coaching. They also noted that faculty need time, incentives, and support to develop these skills, especially when clinical and academic work is already demanding.

Fair access to approved AI tools emerged as both a practical and equity issue. Several organizations described variation in who had access to tools such as ambient documentation, chart summarization, or other approved systems. Access could differ by role, site, learner status, device type, health system affiliation, or institutional licensing. Participants emphasized that if learners and faculty do not have access to approved tools in a controlled environment, they may use unapproved tools on their own.

Guardrails against AI overreliance in training appeared as both a current concern and an aspirational requirement. Leaders raised questions about when learners should be allowed to use AI scribes, clinical reasoning tools, or generative AI in assignments and assessment. Several emphasized the need to preserve core skills, including clinical reasoning, source appraisal, communication, and independent judgment. The goal was not to prohibit AI, but to introduce it at the right time and with the right safeguards.

Taken together, these findings suggest that AI education in family medicine needs to be practical, developmental, and role-specific. Organizations need to help people build literacy, access approved tools safely, learn through supported practice, and maintain the human and clinical competencies that AI is meant to augment rather than replace.

How capability develops over time

Foundational Capability

At the foundational stage, organizations can begin by creating entry points for AI education. They may have early literacy sessions, introductory faculty development, basic access standards, or emerging conversations about when AI should and should not be used in training.

Organizations at this stage often begin by:

- Identifying an approach to AI education for at least one learner or workforce group.
- Offering introductory opportunities in AI literacy development and career development for practicing faculty in AI.
- Establishing a clear approach for determining who may access approved AI tools and under what conditions.

Integrated Capability

At the integrated stage, organizations move from isolated educational activities toward structured, role-specific, and sustained workforce development. They have clearer strategies across learner groups, more formal faculty development pathways, transparent access standards, and defined guardrails to support responsible AI use in training and practice.

Organizations at this stage often strengthen capability by:

- Maintaining a formal AI education strategy spanning at least two of the following: UME, GME, CME, and/or staff development, with mechanisms to keep content current as AI evolves.
- Providing structured faculty development in AI literacy through mentorship, formal fellowships, professional development, and supported opportunities to build AI capability over time.
- Using transparent standards to support fair access to approved AI tools across roles and settings, with attention to who receives access, when, and under what conditions.
- Defining when AI may and may not be used in training and assessment, with basic safeguards to preserve independent skill development.

Field-Shaping Capability

At the field-shaping stage, organizations have advanced approaches to AI education that help define how family medicine prepares the workforce for responsible AI use. They are not only training their own learners and faculty; they are developing models, guardrails, and learning pathways that others can adapt.

Organizations at this stage often demonstrate broader leadership by:

- Maintaining explicit guardrails in training to prevent overreliance on AI, including defined points for AI-supported learning, AI-free assessment where appropriate, and verification of core competencies independent of AI.

Practical case studies

The case studies in this section are anonymized composites drawn from patterns observed in the environmental scan. They are not intended to describe any single organization exactly. Rather, they reflect real-world examples, tensions, emerging practices, and aspirations shared by participating family medicine organizations and leaders.

Case study 1: Building AI literacy as the first step toward broader capability

Maturity reflected: *Foundational capability*

At an organization early in its AI education journey, leaders begin with a practical goal: helping trainees and faculty develop enough shared language and baseline understanding to participate in conversations about AI. Monthly training, grand rounds, and didactics introduce generative AI, responsible use, source checking, clinical applications, and limitations.

These sessions create a repeatable entry point for education. Faculty and trainees have a place to begin learning, asking questions, and becoming more comfortable with AI tools. The organization uses this early literacy work as a foundation for later conversations about curriculum, tool adoption, governance, and innovation.

This is foundational workforce development because the organization has created an entry point for AI education and a shared baseline from which more advanced training, curriculum, governance, and innovation can grow.

Building blocks illustrated:

- AI education strategy across learner groups
- Faculty development and career growth in AI
- Guardrails against AI overreliance in training

Case study 2: Supporting faculty development through mentorship, workshops, and protected learning opportunities

Maturity reflected: *Integrated capability*

As learners begin using AI more frequently, faculty in one organization are increasingly expected to teach, model, and supervise responsible use before many feel fully prepared. Early adopters are already using AI for teaching materials, study guides, simulated patient interactions, and scholarly work, but these skills remain concentrated among a small group of enthusiasts.

The organization begins creating more structured faculty development through workshops, peer mentorship, and opportunities to work on AI-related education or implementation projects. Faculty learn how to use tools, evaluate outputs, understand risks, teach learners about appropriate use, and identify where AI can support clinical, educational, or scholarly work.

This reflects integrated capability because the organization is moving beyond introductory exposure and creating more structured ways for faculty to build, apply, and teach AI-related skills over time.

Building blocks illustrated:

- Faculty development and career growth in AI
- AI education strategy across learner groups
- Guardrails against AI overreliance in training

Case study 3: Creating fair and safe access to approved tools for learners and faculty

Maturity reflected: *Foundational moving toward integrated capability*

In one family medicine organization, access to approved AI tools varies across faculty, residents, medical students, and staff. Some tools are available only to attending physicians, some depend on device type, and some are approved for education or administrative work but not patient care.

Leaders begin clarifying who can use which tools, for what purposes, and under what conditions. In some cases, access expands to residents or fellows. In others, programs make staged decisions about when learners can use tools such as ambient documentation. These decisions are paired with education, supervision, and safe-use expectations so that access is not left to informal workarounds or uneven local practices.

This is foundational when an organization has a clear approach to access across roles and settings. It becomes more integrated when those access standards are transparent and paired with education, supervision, and safe-use expectations.

Building blocks illustrated:

- Fair access to approved AI tools
- AI education strategy across learner groups
- Guardrails against AI overreliance in training

Case study 4: Defining when AI should and should not be used in training

Maturity reflected: *Integrated moving toward field-shaping capability*

In one residency program, leaders wrestle with when residents should begin using ambient documentation. Faculty recognize the value of the tool for reducing documentation burden, but they also worry that early reliance could interfere with learning how to write notes, organize clinical reasoning, and communicate assessment and plan clearly.

Instead of allowing unrestricted use from day one, the program creates a staged approach. Early learners first practice documentation and clinical reasoning without AI assistance. Once faculty advisors are confident that learners can demonstrate core skills, residents are allowed to use AI documentation support with supervision and review. The program also identifies areas where AI can support learning while preserving AI-free assessment where independent competence needs to be verified.

This reflects integrated capability because the program is defining when AI may support learning and when independent competence needs to be demonstrated without AI assistance. It begins to approach field-shaping capability when those guardrails are explicit, repeatable, and tied to verification of core competencies.

Building blocks illustrated:

- Guardrails against AI overreliance in training
- AI education strategy across learner groups
- Faculty development and career growth in AI

Questions for local reflection

Organizations can use the following questions to consider their own strengths, gaps, and next steps in this domain:

1. What learner or workforce groups currently receive AI education, and where are the gaps?
2. How are faculty being supported to build AI literacy, teach responsible AI use, and develop deeper AI capability over time?
3. Who has access to approved AI tools, under what conditions, and how are access decisions communicated?
4. Where do learners, faculty, clinicians, or staff currently turn for practical help using AI tools safely and effectively?
5. What core clinical, educational, or professional skills should be preserved or assessed without AI support?
6. What is one practical step we could take in the next 3–6 months to strengthen AI education, faculty development, access, or guardrails in our organization?

COMMUNITY & PATIENT ENGAGEMENT

Community & Patient Engagement

Domain purpose

Community and patient engagement focuses on how organizations involve patients, families, communities, and equity perspectives in decisions about AI selection, design, implementation, evaluation, and improvement. This domain is about ensuring that AI-enabled work remains connected to the people and communities family medicine serves.

This matters because AI tools can affect access, communication, trust, care experience, and health outcomes in ways that may not be obvious from a technical or operational perspective alone. Tools that work well for one population, language group, practice setting, or access model may not work the same way for another. Family medicine organizations need ways to understand how AI affects different communities, whether it improves or worsens disparities, and whether patients and communities experience AI-enabled care as useful, respectful, and trustworthy.

By strengthening this domain, organizations can better align AI work with family medicine's commitments to whole-person care, health equity, community responsiveness, and trusted relationships. This includes creating mechanisms for patient and community input, assessing equity impacts over time, and considering broader environmental and planetary effects as AI becomes more embedded in care delivery.

What the environmental scan revealed

The environmental scan suggested that community and patient engagement is deeply aligned with family medicine values, even though it was not always operationalized consistently in AI work. Participants repeatedly emphasized that AI should be patient-centered, community-responsive, equity-focused, and grounded in trust. They also noted that community engagement cannot be treated as an afterthought once tools are already selected or deployed.

Several building blocks emerged as especially important:

Health equity and community-informed AI design emerged as a core expectation. Leaders emphasized that organizations should not assume they know what communities need or how patients will experience AI tools. Instead, they described the importance of listening directly, maintaining local flexibility, and involving patients and communities in decisions about how AI is introduced. Some organizations had existing patient and family advisory councils, community advisory boards, or community faculty involved in AI-related work.

Equity impact assessment and response appeared as a practical need as AI tools began affecting documentation, patient communication, population health, access, and clinical decision support. Participants raised concerns about subgroup performance, language access, patient portal use, digital access, and whether certain communities might benefit less or be harmed more by AI-enabled workflows. Several noted that equity should be evaluated during design, rollout, and ongoing monitoring rather than assumed.

Environmental and planetary impact considerations emerged as an early but meaningful theme. Participants connected AI to the broader health impacts of climate change, energy use, water use, and technology infrastructure. While few organizations appeared to have formal mechanisms for weighing environmental impact in AI decisions, several leaders argued that family medicine should at least ask these questions and include environmental considerations alongside clinical, operational, and equity concerns.

Taken together, these findings suggest that AI excellence in this domain depends on an organization's ability to listen to communities, design and evaluate AI with equity in mind, monitor for uneven effects, preserve trust, and consider the broader impacts of AI-enabled care.

How capability develops over time

Foundational Capability

At the foundational stage, organizations can begin by creating ways for health equity and patient or community perspectives to inform AI decisions. They may have early advisory structures, equity review questions, or local practices that help ensure AI tools are considered in relation to the needs of patients and communities.

Organizations at this stage often begin by:

- Defining an approach to considering health equity and patient/community perspectives in AI selection and implementation decisions.

Integrated Capability

At the integrated stage, organizations move from general commitment to more defined mechanisms for community-informed AI design and equity monitoring. They have clearer ways to involve patients or communities at appropriate stages of the AI lifecycle and to assess and respond to equity impacts over time.

Organizations at this stage often strengthen capability by:

- Prioritizing health equity and community-informed design in the selection, development, and rollout of AI tools, with defined mechanisms for patient and community input.
- Maintaining a formal mechanism to assess and respond to equity impacts of AI integration over time.

Field-Shaping Capability

At the field-shaping stage, organizations expand the definition of responsible AI to include broader community, environmental, and planetary considerations. They are not only asking whether AI works locally; they are considering how AI decisions affect communities, trust, sustainability, and the broader conditions that shape health.

Organizations at this stage often demonstrate broader leadership by:

- Considering environmental and planetary impact in AI decision-making processes, alongside clinical, operational, and equity considerations.

Practical case studies

The case studies in this section are anonymized composites drawn from patterns observed in the environmental scan. They are not intended to describe any single organization exactly. Rather, they reflect real-world examples, tensions, emerging practices, and aspirations shared by participating family medicine organizations and leaders.

Case study 1: Extending existing patient and community advisory structures into AI decisions

Maturity reflected: *Foundational moving toward integrated capability*

In a department with a longstanding patient and family advisory council, leaders begin considering how existing trusted advisory structures could inform AI decisions. As AI tools enter clinical and educational workflows, these groups offer a way to hear patient and community perspectives before tools are fully rolled out.

AI-related questions are brought into advisory spaces that already include patient, family, and community voices. Members discuss concerns about trust, communication, access, language, and local priorities. This allows the organization to learn from community perspectives before finalizing how AI tools are introduced, explained, evaluated, or improved.

This is foundational because the organization has a defined way to bring patient and community perspectives into AI decisions. It moves toward integrated capability when those advisory structures are used intentionally across the AI lifecycle, from selection and rollout to evaluation and improvement.

Building blocks illustrated:

- Health equity and community-informed AI design
- Equity impact assessment and response

Case study 2: Formalizing community expertise within the organization's AI-related work

Maturity reflected: *Integrated capability*

In one department, leaders recognize that community engagement requires more than occasional consultation. The department brings community-based faculty into the organization so community perspectives can be represented more consistently across clinical, research, educational, and improvement activities.

As AI becomes a growing priority, these community faculty help shape how AI-related decisions consider local needs, community priorities, and trust. Their involvement influences conversations about research questions, implementation planning, partnerships, evaluation, and communication with patients and communities.

This reflects integrated capability because community input is not left to informal outreach. The organization has a clearer mechanism for bringing equity, trust, and local context into AI-related decisions over time.

Building blocks illustrated:

- Health equity and community-informed AI design
- Equity impact assessment and response

Case study 3: Monitoring whether AI tools work equitably across patient populations

Maturity reflected: *Integrated capability*

As AI tools begin affecting patient communication, access, and clinical workflows, one organization recognizes that benefits and risks may not be distributed evenly. Leaders raise concerns about language access, implementation equity, and whether clinicians may offer AI-supported tools differently across patients.

The organization begins defining what equity monitoring should include. It looks at who is offered AI-enabled services, who accepts or declines them, whether language needs are supported, whether patient-facing outputs are understandable, and whether certain communities experience less benefit or greater risk. In some settings, this also includes practical safeguards for AI-supported translation, readability, and patient education materials.

This reflects integrated capability because the organization is moving beyond general concern about equity toward a formal way to assess and respond to uneven impact over time. It also shows that equity monitoring is not only about algorithmic bias; it includes access, workflow, adoption, language, trust, and patient experience.

Building blocks illustrated:

- Equity impact assessment and response
- Health equity and community-informed AI design

Questions for local reflection

Organizations can use the following questions to consider their own strengths, gaps, and next steps in this domain:

1. How are patients, families, or community leaders and members involved in decisions about AI selection, design, rollout, or evaluation? How are members of vulnerable communities engaged?
2. What existing advisory groups, community partnerships, or equity structures could be used to inform AI-related decisions?
3. How do we assess whether AI tools work differently across patient populations, languages, access models, sites, or social contexts?
4. How do we identify and respond if AI tools worsen disparities, reduce trust, or fail to reach the communities most likely to benefit?
5. How are language access, readability, digital access, and patient understanding considered in AI-supported communication?
6. What environmental or planetary impacts should we consider when deciding whether and how to use AI tools?
7. What is one practical step we could take in the next 3–6 months to strengthen patient partnership, community input, equity assessment, or environmental responsibility in AI-related work?

5 AI GOVERNANCE & ETHICS

AI Governance & Ethics

Domain purpose

AI governance and ethics focuses on how organizations make decisions about AI tools, priorities, risks, safeguards, and accountability. This domain asks whether family medicine has a meaningful voice in AI decision-making in their institutions and whether there are clear pathways for reviewing, routing, approving, monitoring, and disclosing AI use.

This matters because many AI decisions are made at the institutional, health system level. Conversations with vendors, IT, compliance, or informatics teams may not include family medicine, while the effects are felt directly in patient care. Family medicine organizations need ways to ensure that AI decisions reflect the realities of patient-centered longitudinal relationships, whole-person care, team-based workflows, community trust, equity, education, and the practical needs of clinicians, learners, staff, and patients.

By strengthening this domain, family medicine organizations can help ensure that AI is adopted with appropriate oversight, safeguards, escalation pathways, and transparency. Strong governance should not slow innovation or say “no.” Rather, it creates a safer and more trustworthy way to identify useful AI opportunities, manage risks, and align AI-enabled work with the values and needs of family medicine.

What the environmental scan revealed

The environmental scan suggests that governance is a foundational issue for AI in family medicine. Many organizations described some form of institutional AI governance, informatics review, compliance process, or technology decision-making structure. However, family medicine's role in those structures is variable. Some organizations had family physicians or primary care leaders directly involved in governance, while others described decisions being made elsewhere and tools arriving in primary care after key decisions had already been made.

Several building blocks emerged as especially important:

Family medicine representation in institutional AI governance emerged as one of the strongest themes. Leaders repeatedly emphasized that family medicine needs to be "at the table" when AI tools are selected, prioritized, and evaluated. This does not necessarily mean creating a separate family medicine AI governance committee. In many settings, the more important capability is having a clear and reliable way for family medicine perspectives to influence organization-wide AI decisions.

AI research vs. QI vs. clinical deployment pathways appeared as an important but unevenly visible need. Some organizations described new IRB processes, AI-specific review forms, or institutional toolkits for AI-related work. Others suggested that classification and routing may be handled outside family medicine or may not be consistently understood by family medicine leaders. As AI work moves across research, quality improvement, education, and clinical care, organizations need clear pathways to determine what type of review and safeguards are required.

AI intake, triage, and routing emerged as a practical governance need. Leaders described the importance of having a formal process for people to bring forward AI ideas, tools, or use cases, especially when industry partners are involved or when those ideas come from outside formal governance structures. Without a transparent intake pathway, promising ideas may stall, duplicative work may proliferate, or decisions may feel opaque to the people most affected.

AI risk stratification and escalation appeared consistently across discussions about safety, bias, hallucination, transparency, patient trust, and clinical accountability. Participants emphasized that different AI tools carry different levels of risk and should not all be treated the same way. Higher-risk tools, especially those affecting clinical decision-making, patient communication, learner assessment, or equity, require more scrutiny and clearer escalation to safety, compliance, clinical, and governance leaders.

AI transparency and disclosure expectations were recognized as important but unevenly developed. Participants described consent processes for ambient documentation, verbal permission, disclaimers for AI-assisted work, expectations around data storage, use, and disposal, and the need for honesty about when and how AI is being used. These examples suggest growing awareness that trust depends not only on technical performance, but also on whether patients, learners, researchers, and staff understand the role AI is playing and how related data are handled.

Taken together, these findings suggest that AI governance and ethics depends on an organization's ability to create visible decision pathways, represent family medicine priorities, route AI work appropriately, and communicate transparently about AI use.

How capability develops over time

Foundational Capability

At the foundational stage, organizations can begin by establishing basic pathways to classify, review, route, and communicate about AI work. They may not be involved in organization-wide AI governance, but they can begin to create clearer ways to surface family medicine needs, route AI initiatives, and set expectations for transparency and disclosure.

Organizations at this stage often begin by:

- Establishing a clear pathway to classify AI work as research, QI, or clinical deployment and route it to the right review and safeguards.
- Maintaining a transparent intake and triage process for AI initiatives, aligned to family medicine needs, with clear routing to organization-wide governance.
- Maintaining clear expectations and mechanisms for transparency and disclosure of AI use to patients, learners, researchers, and staff to foster trust and accountability.

Integrated Capability

At the integrated stage, organizations move from basic routing and transparency practices toward consistent participation in institutional AI decision-making. They have clearer mechanisms for family medicine input, more standardized risk review, and stronger escalation pathways for tools or use cases that require additional scrutiny.

Organizations at this stage often strengthen capability by:

- Maintaining meaningful, consistent representation in institution-level AI governance, with a clear mechanism to influence organizational AI decisions affecting primary care.
- Applying standardized AI risk stratification with proportional review, bias assessment, and clear escalation to organizational safety, compliance, and clinical leadership.

Field-Shaping Capability

At the field-shaping stage, organizations are not only participating in AI governance; they are helping shape it. They demonstrate sustained leadership and influence in institutional AI strategy and contribute to broader expectations for responsible, ethical, transparent, and family-medicine-aligned AI use.

Organizations at this stage often demonstrate broader leadership by:

- Demonstrating sustained leadership and influence in institution-level AI governance, helping shape organization-wide AI strategy and decisions affecting primary care.

Practical case studies

The case studies in this section are anonymized composites drawn from patterns observed in the environmental scan. They are not intended to describe any single organization exactly. Rather, they reflect real-world examples, tensions, emerging practices, and aspirations shared by participating family medicine organizations and leaders.

Case study 1: Creating a pathway for family medicine input into organization-wide AI governance

Maturity reflected: *Integrated moving toward field-shaping capability*

In a health system where AI decisions are made through an organization-wide governance committee, family medicine leaders recognize that creating a separate governance body is not the most practical path. Instead, they develop a reliable pathway for primary care needs, workflow concerns, and implementation considerations to reach the institutional committee.

Family medicine representatives gather input from clinicians and bring forward use cases, implementation barriers, and risks that may not be obvious from an organization-level view alone. Over time, they are not simply informed after decisions are made. They help shape conversations about which tools matter, how those tools may affect primary care workflows, and what support will be required for implementation.

This reflects integrated capability when family medicine has meaningful and consistent representation in institution-level AI governance. It begins to move toward field-shaping capability when family medicine leaders have sustained influence on organization-wide AI strategy, not only individual tool decisions.

Building blocks illustrated:

- Family medicine representation in institutional AI governance
- AI intake, triage, and routing
- AI risk stratification and escalation

Case study 2: Making the AI review process visible to people outside the governance committee

Maturity reflected: *Foundational moving toward integrated capability*

In a family medicine department with formal AI leadership, leaders recognize that faculty and staff need a way to bring forward ideas for AI and understand how decisions are made. The department creates a transparent intake process for AI use cases, questions, and concerns.

When a faculty or staff member submits an AI idea, they are able to understand where it goes, who reviews it, what questions are raised, and whether it needs additional input from informatics, compliance, IRB, QI, legal, privacy, or clinical leadership. This helps reduce the sense that AI requests disappear into a black box.

This is foundational because the department has created a clear way for AI ideas and concerns to be submitted, reviewed, and routed. It becomes more integrated when the process is used consistently, aligned with institutional strategy, and connected to organization-wide governance.

Building blocks illustrated:

- AI intake, triage, and routing
- Research vs. QI vs. clinical deployment pathway
- Family medicine representation in institutional AI governance

Case study 3: Routing AI projects based on whether they are research, QI, or clinical deployment

Maturity reflected: *Foundational capability*

As AI-related projects increase, a family medicine organization starts receiving proposals that span research studies, quality improvement efforts, educational uses, and clinical workflow pilots. In response, the organization develops an AI-specific review process connected to IRB and other institutional pathways.

Project teams are asked to answer additional AI-related questions about the purpose of the work, the data involved, the intended users, the patient or learner impact, and where the tool may be deployed. Those answers help route projects differently depending on whether they are intended for publication, local workflow improvement, education, or clinical use at the point of care.

This is foundational governance work because the organization has a way to classify AI activity and route it to the right review pathway, safeguards, and decision-makers.

Building blocks illustrated:

- Research vs. QI vs. clinical deployment pathway
- AI intake, triage, and routing
- AI risk stratification and escalation

Case study 4: Establishing transparency expectations for AI use

Maturity reflected: *Foundational capability*

When ambient documentation is introduced, a family medicine organization sets expectations for patient awareness and permission. Clinicians are expected to inform patients when AI-supported documentation is being used, obtain verbal permission, and follow local signage or consent expectations.

The same emphasis on transparency begins to extend into other settings. Faculty use disclaimers when AI supports academic or scholarly work, and teams discuss when patients, learners, researchers, or staff should be told that AI has played a role. Rather than relying on vague principles, the organization translates transparency into daily practices that users can follow.

This is foundational because the organization has moved transparency from a general principle to a set of practices that support trust and accountability in day-to-day AI use.

Building blocks illustrated:

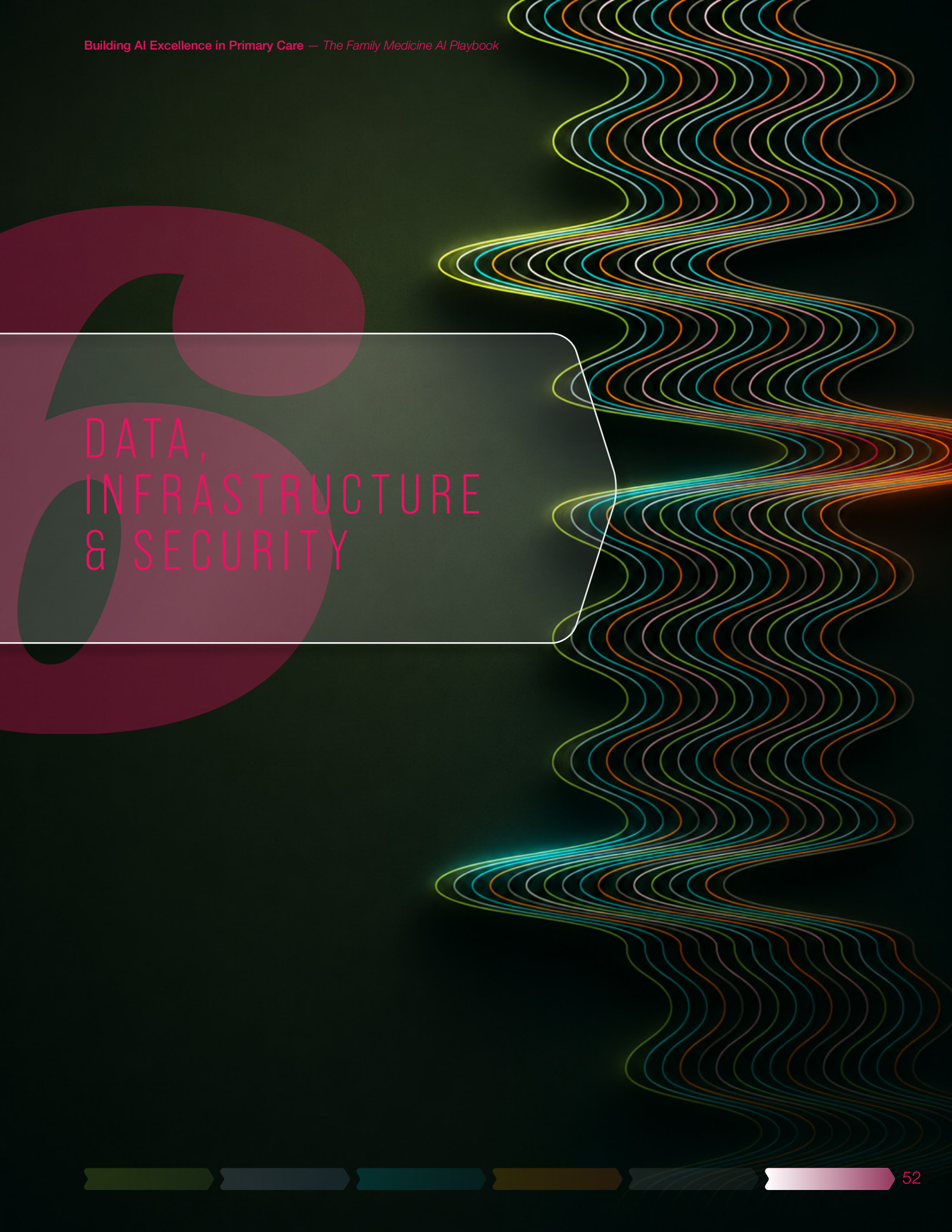
- AI transparency and disclosure expectations
- Research vs. QI vs. clinical deployment pathway
- AI risk stratification and escalation

Questions for local reflection

Organizations can use the following questions to consider their own strengths, gaps, and next steps in this domain:

1. How does family medicine currently influence institutional AI decisions that affect primary care?
2. Where do AI ideas, use cases, tools, or concerns go today, and is the intake or review process visible to the people who use it?
3. How do we determine whether AI work should be treated as research, QI, clinical deployment, education, operations, or another type of activity?
4. How do we assess the level of risk associated with different AI tools or use cases, and when do we escalate concerns to organization-wide safety, compliance, privacy, legal, clinical, or governance leaders?
5. What expectations do we have for transparency and disclosure of AI use with patients, learners, researchers, clinicians, and staff?
6. What is one practical step we could take in the next 3–6 months to strengthen family medicine's voice, routing pathways, risk review, or transparency practices in AI governance?

6 DATA, INFRASTRUCTURE & SECURITY



Data, Infrastructure & Security

Domain purpose

Data, infrastructure, and security focuses on whether organizations have the technical foundations, partnerships, and safeguards needed to use AI responsibly in family medicine. This domain is about more than having access to AI tools. It asks whether organizations can use data securely, protect patient and learner information, work effectively with IT and informatics partners, and access the infrastructure needed to research, implement, evaluate, and sustain AI-enabled work.

This matters because many AI use cases depend on sensitive clinical, operational, educational, or research data. Family medicine organizations need clear pathways for secure data access, appropriate use of PHI, vendor review, data retention decisions, and technical support. Without these foundations, AI work may become unsafe, fragmented, delayed, or dependent on tools that are not appropriate for clinical or institutional use.

By strengthening this domain, organizations can better protect patients and data, support compliant AI development and implementation, and ensure family medicine has a meaningful voice in the infrastructure and access decisions that shape what AI work is possible.

What the environmental scan revealed

The environmental scan suggested that data, infrastructure, and security may be less visible than other domains, but it is essential to whether AI work can actually move forward. Participants described security, compliance, and IT partnership as practical prerequisites for using AI in clinical and academic settings. Many examples centered on what happens when secure infrastructure is available and when it is not.

Several building blocks emerged as especially important:

Structured partnership with health information technology (HIT) and informatics emerged as a foundational need. Participants emphasized that AI work involving clinical data, EHR integration, patient communication, or workflow support requires close partnership with HIT, informatics, compliance, and security experts. Organizations with stronger capability had clearer connections to technical partners who could help assess feasibility, manage security requirements, support implementation, and troubleshoot problems.

Family medicine voice in data, privacy, and access decisions appeared as an important capability because many technical decisions are made outside family medicine, yet directly affect primary care. Leaders described concerns about where data go, what vendor agreements allow, how long data are stored and retained, and whether organizational data are used to train models. Family medicine organizations need mechanisms to represent primary care needs and tradeoffs in these decisions.

Access to technical infrastructure, datasets, and support was a concrete differentiator across organizations. Some had secure cloud environments, HIPAA-compliant chatbots, research data warehouses, governed platforms for protected health information (PHI), or IT-supported environments for AI projects. Others relied on individual workarounds or lacked clear access to approved tools and infrastructure. This affected whether teams could safely build, test, evaluate, and sustain AI-related work.

Taken together, these findings suggest that AI excellence in this domain depends on secure technical infrastructure, strong HIT and informatics partnerships, governed access to data and tools, and practical safeguards that protect patients, clinicians, and organizations over time.

How capability develops over time

Foundational Capability

At the foundational stage, organizations can begin by establishing the basic technical and partnership structures needed to support secure, compliant, and clinically appropriate AI work. They may have early HIT/informatics partnerships, access to approved infrastructure, and pathways for support when AI tools require data, integration, or security review.

Organizations at this stage often begin by:

- Maintaining a structured partnership with HIT/informatics in their organization to support secure, compliant, and clinically appropriate AI implementation and data stewardship.
- Having access to the technical infrastructure and support needed to implement and sustain AI tools in family medicine settings.

Integrated Capability

At the integrated stage, organizations move from basic access and support toward more defined pathways for governed data use, technical infrastructure, and family medicine input into privacy, security, and access decisions. They can more reliably support AI development, evaluation, and implementation while representing primary care needs and tradeoffs.

Organizations at this stage often strengthen capability by:

- Having a defined mechanism to contribute family medicine input to data, privacy, security, and access decisions affecting AI use in primary care.
- Having a defined pathway to access and use appropriately governed family medicine data, technical infrastructure, and support for AI development and evaluation.

Field-Shaping Capability

At the field-shaping stage, organizations have meaningful involvement in technical, privacy, security, and data access decisions that shape AI across primary care. They are not only using infrastructure built by others; they help guide the tradeoffs, safeguards, and priorities that determine how AI can responsibly support family medicine.

Organizations at this stage often demonstrate broader leadership by:

- Maintaining meaningful involvement in data, privacy, security, and access decisions affecting primary care AI so family medicine needs and tradeoffs are represented.

Practical case studies

The case studies in this section are anonymized composites drawn from patterns observed in the environmental scan. They are not intended to describe any single organization exactly. Rather, they reflect real-world examples, tensions, emerging practices, and aspirations shared by participating family medicine organizations and leaders.

Case study 1: Using a secure, IT-supported environment for AI work

Maturity reflected: *Foundational moving toward integrated capability*

In one organization, AI projects involving clinical data are routed through an IT-managed cloud environment that has gone through security, compliance, and business associate agreement review. This gives project teams a safer pathway for developing, testing, and evaluating AI tools without relying on public or unapproved systems.

Family medicine teams work with IT, compliance, and security partners to understand what data can be used, where it can be stored, and what support is available. Instead of each project team finding its own tools or storage solution, AI work involving sensitive data can move through a governed environment with technical support and oversight.

This is foundational because the organization has access to technical infrastructure and support for AI work involving sensitive data. It moves toward integrated capability when family medicine teams have a defined pathway to governed data, technical infrastructure, and support for AI development and evaluation.

Building blocks illustrated:

- Structured partnership with IT/HIT and informatics
- Access to technical infrastructure, datasets, and support
- Family medicine voice in data, privacy, and access decisions

Case study 2: Reviewing vendor data handling before adopting an AI tool

Maturity reflected: *Foundational capability*

When considering a new AI tool for implementation, an organization identifies concerns about vendor data retention. Even though the data are described as de-identified, legal and compliance leaders are uncomfortable with the handling of patient encounter data being stored by the vendor.

The organization compares vendor options based on how various data elements are captured, stored, retained, and used. A later tool is viewed more favorably because it does not retain sensitive data beyond a short period and does not use organizational data to train the model. These details become part of the adoption decision, not an afterthought.

This is foundational infrastructure and security work because the organization brings legal, compliance, IT, and security partners into the adoption decision so that data handling is at the fore.

Building blocks illustrated:

- Structured partnership with IT/HIT and informatics
- Family medicine voice in data, privacy, and access decisions
- Access to technical infrastructure, datasets, and support

Case study 3: Creating safer alternatives to public AI tools

Maturity reflected: *Foundational capability*

After a learner uploads patient information into a public AI tool, the family medicine organization uses the incident as a catalyst to clarify expectations for appropriate AI use, data privacy, and secure alternatives. Leaders recognize that simply telling people not to use public tools is not enough if approved options, clear rules, and practical support are not available.

The organization begins clarifying expectations for PHI, prompt handling, approved tools, and patient data use. At the same time, it explores safer institutional options, such as HIPAA-compliant chatbots or protected AI environments, so clinicians, learners, and staff have a compliant pathway for AI-supported work that involves sensitive information.

This is foundational because the organization responds to a real-world risk by clarifying expectations and connecting users to safer, compliant options. It also reinforces that responsible AI use depends on education, security partnership, and practical access to approved tools.

Building blocks illustrated:

- Structured partnership with IT/HIT and informatics
- Access to technical infrastructure, datasets, and support
- Family medicine voice in data, privacy, and access decisions

Questions for local reflection

Organizations can use the following questions to consider their own strengths, gaps, and next steps in this domain:

1. What IT, informatics, compliance, privacy, and security partners support AI-related work in our organization?
2. What approved technical infrastructure is available for AI work involving clinical, operational, educational, or research data?
3. How do family medicine teams access governed data, technical support, or secure environments for AI development, evaluation, or implementation?
4. How are vendor data handling, retention policy, model training rights, PHI use, and business associate agreements reviewed before AI tools are adopted?
5. How does family medicine contribute input to data, privacy, security, and access decisions that affect AI in primary care?
6. What fallback, monitoring, maintenance, or update processes are needed as AI tools become embedded in routine work?
7. What is one practical step we could take in the next 3–6 months to strengthen secure infrastructure, governed data access, IT/informatics partnership, or reliability planning for AI-related work?

RAISING ALL BOATS

Raising all boats

The environmental scan and this Playbook helped surface a clear opportunity. Family medicine needs a shared way to recognize, support, and connect organizations working to build responsible AI capability. The building blocks described in this Playbook have therefore inspired related work to develop a formal national *recognition program* and collaborative network for AI excellence in family medicine.

To our knowledge, family medicine is the first specialty to develop a national AI excellence framework, recognition pathway, and collaborative learning network of this kind. That matters. It positions family medicine not as a late adopter of AI designed elsewhere, but as a field helping define what responsible, equitable, practical AI excellence should look like in real-world care, education, research, and community partnership.

The goal is not simply to identify a small number of highly resourced organizations and celebrate what they have already built. The goal is to raise all boats by recognizing excellence where it exists, making the path toward excellence more visible, and creating a supportive structure through which organizations at different stages of maturity can learn from one another.

The recognition program is intended to acknowledge organizations demonstrating meaningful progress across the domains described in this Playbook. Just as importantly, the collaborative network is intended to help participating organizations accelerate shared learning, reduce duplication, and strengthen family medicine's collective voice in the future of AI.

Together, the recognition program and collaborative network aim to:

- Advance multisite research and innovation by helping organizations identify shared questions, collaborate across settings, and generate practical evidence about AI in family medicine.
- Strengthen family medicine's future and voice by ensuring that primary care perspectives shape AI governance, policy, education, implementation, and investment decisions.
- Create practical implementation pathways by sharing workflows, policies, training approaches, evaluation models, and lessons learned that others can adapt.
- Enable mentorship and peer exchange by connecting organizations with different strengths, contexts, and stages of maturity so they can learn faster together.

This Playbook is the field resource that defines and explains the building blocks of family medicine AI excellence. The recognition program and collaborative network are emerging mechanisms for helping organizations apply, deepen, and share those building blocks in practice.

Organizations interested in pursuing recognition should refer to the separately published recognition criteria, and achievement thresholds for detailed information about eligibility, evidence expectations, submission requirements, and review processes.

Glossary

Term	Definition
AI-enabled workflow	A clinical, educational, operational, administrative, or research workflow that uses AI to support, automate, augment, summarize, classify, draft, analyze, or otherwise assist part of the work.
AI governance	The structures, processes, and decision pathways an organization uses to review, approve, monitor, escalate, and communicate about AI tools and use cases.
AI inventory	A maintained list of AI tools, pilots, projects, prompts, or workflows in use or under evaluation. An inventory may include information about users, use cases, approval status, risk level, support needs, and oversight pathways.
AI lifecycle	The stages through which an AI tool or use case moves, including idea generation, selection, design, review, implementation, monitoring, improvement, scaling, and retirement or discontinuation.
AI literacy	A baseline understanding of what AI is, how AI tools may be used, what limitations or risks they carry, and how to engage with them responsibly in clinical, educational, research, or operational contexts.
Ambient documentation	AI-supported documentation that captures or processes clinical conversations to help draft clinical notes or related documentation. These tools typically require clinician review and editing before final use.
Building blocks	The practical capabilities, structures, and practices that emerged from the environmental scan as important for responsible AI excellence in family medicine.
Clinical deployment	Use of an AI tool in real clinical care or clinical operations, especially when outputs may affect patient communication, workflow, decision-making, prioritization, documentation, or care delivery.
Community-informed design	An approach to AI selection, design, implementation, or evaluation that incorporates patient, family, community, and equity perspectives at appropriate stages of the work.
Data stewardship	The responsible management of data across its lifecycle, including access, use, storage, sharing, retention, privacy, security, quality, and disposal.
Equity impact assessment	A structured process for considering whether an AI tool or workflow may affect groups differently, worsen disparities, improve equity, or create unintended consequences across patient populations, languages, sites, access models, or social contexts.
External collaborator	An organization or individual outside the family medicine organization who contributes to AI-related work. This may include commercial vendors, academic partners, health systems, data partners, funders, community organizations, or professional societies.
Family medicine organization	A broad term used in this Playbook to include departments, residency programs, clinical practices, health system units, academic units, community-based programs, or other entities working in family medicine.
Field-shaping capability	A more advanced stage of AI capability in which an organization not only implements or improves AI locally, but also contributes models, lessons, evidence, guidance, partnerships, or leadership that influence the broader field.

Term	Definition
Foundational capability	An early stage of AI capability in which an organization has begun establishing basic structures, roles, pathways, safeguards, or practices to support responsible AI work.
Generative AI	AI that can create or transform content, such as text, summaries, messages, educational materials, images, code, or other outputs, based on prompts or input data.
Health information technology and informatics	The teams, systems, and expertise that support clinical technology, EHR workflows, data access, interoperability, analytics, security, and the practical integration of digital tools into care delivery.
HIPAA-aligned AI use	AI use that follows organizational expectations and legal requirements for protecting health information, including appropriate use of approved tools, permissible data entry, privacy safeguards, and review of AI-generated outputs.
Implementation	The process of introducing, adapting, supporting, evaluating, and improving an AI-enabled tool or workflow in real-world practice.
Integrated capability	A more coordinated stage of AI capability in which roles, processes, training, governance, data access, evaluation, and support structures are more clearly defined and consistently used.
Learning loop	A structured process for gathering feedback or data, reviewing what is being learned, making adjustments, and using those insights to improve AI-enabled work over time.
Machine learning	A type of AI in which systems identify patterns in data and use those patterns to make predictions, classifications, recommendations, or other outputs.
Model drift	A change in model performance over time, often because the data, patient population, workflow, clinical guidelines, or environment has changed since the model was developed or validated.
Protected time	Dedicated time, effort, or support for individuals responsible for AI-related leadership, coordination, implementation, education, evaluation, or governance work.
Protected health information	Individually identifiable health information that is protected under privacy laws and organizational policy. This may include clinical notes, diagnoses, test results, patient messages, recordings, demographic information, or other sensitive data.
Quality improvement	Systematic work intended to improve care delivery, processes, outcomes, safety, experience, equity, or efficiency in a local setting.
Responsible AI	AI that is selected, designed, implemented, monitored, and improved in ways that are safe, equitable, transparent, privacy-protecting, clinically appropriate, and aligned with the needs of patients, clinicians, learners, staff, and communities.
Risk stratification	A process for determining the level of review, oversight, safeguards, and escalation needed for an AI tool or use case based on factors such as intended use, data sensitivity, patient impact, clinical risk, equity implications, and human review.
Transparency and disclosure	Clear communication about when, where, why, and how AI is being used, including what patients, learners, researchers, clinicians, or staff should be told and what expectations exist for consent, permission, labeling, or acknowledgement.
Vendor data handling	The ways an external vendor collects, stores, retains, protects, shares, deletes, or uses data, including whether data may be used to train or improve models.

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