BP LOGIX

Leading with AI:

A Roadmap for Medical Affairs

By Michelle Chernock, Ph.D.

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AI is rapidly reshaping how information flows, decisions are made, and value is delivered across pharma. For Medical Affairs (MA), it's no longer a question of if AI will impact the function, but how prepared your team is to make the most of it.

MA teams are uniquely positioned to benefit from AI's ability to streamline content creation, surface insights from large datasets, and personalize engagement, but unlocking those benefits requires more than just curiosity. It requires planning, alignment, and a clear understanding of the risks and rewards.

This paper explores where AI is already making an impact, where it still falls short, and what MA teams can do right now to prepare for a successful AI-enabled future.

About the Author

Michelle Chernock, Ph.D., is the founder of Leaders in Medical Affairs (LMA) and a recognized expert in building high-impact Medical Affairs functions.

With a Ph.D. in Neuroscience from the University of California, Berkeley, and over 20 years of global industry experience, she has dedicated her career to elevating the role of Medical Affairs through strategy development, organizational design, and executive coaching.

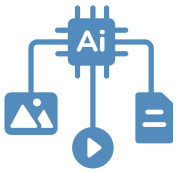
How AI is already changing Medical Affairs

MA teams across the pharmaceutical industry are already testing AI to improve how they access data, ensure accuracy, and work more efficiently. Two areas where AI has already demonstrated its usefulness are chatbot-enabled for Medical Information services and AI-assisted content drafting.

Chatbots

One of the most tangible applications of AI is the use of chatbots for Medical Information services. These tools can instantly respond to common questions from healthcare professionals (HCPs) and consumers, providing accurate, real-time answers pulled from an extensive knowledge base.

Powered by Natural Language Processing (NLP), these tools are designed to understand and respond conversationally, reducing response times and giving Medical Information teams more capacity to focus on complex cases.



Content generation

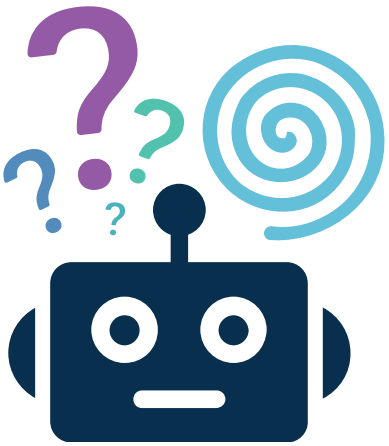
AI tools are also being leveraged to assist in content creation within MA. From drafting scientific communications to generating initial drafts of scientific publications, AI can accelerate the content creation process.

While human expertise remains essential for final review and contextual nuance, AI significantly accelerates the writing process and reduces administrative burden.

Where AI falls short (and why it still needs us)

While AI has made significant strides, its implementation in MA is not without challenges. Hallucinations, input sensitivity, and compliance challenges limit AI's reliability if not carefully managed.

1. AI hallucinations



One critical risk when using AI in medical applications is the phenomenon of AI hallucinations, where the system generates inaccurate, misleading, or entirely fabricated information. In a field where accuracy can impact patient outcomes, even a small error, like AI providing incorrect dosing guidance, could put patients at risk.

2. Query quality

AI models are only as effective as the input they are provided. Vague prompts can lead to incomplete, inaccurate or irrelevant responses. Consider the quality of the AI response to the following queries:

Weak query	Strong query
"Tell me about the safety of DrugX?"	"What are all of the AEs reported over 3% in the phase III study of DrugX?"

Ensuring that users are trained to phrase their questions effectively is critical to mitigating this issue.

3. Regulatory risks

The pharma industry must comply with strict regulatory guidelines. This requires that AI systems deployed in MA are designed with transparency, auditability, and data security features to meet regulatory standards. If AI tools aren't aligned with regulatory frameworks, they introduce serious compliance risks.

One major risk is the inadvertent dissemination of off-label information. MA associates are an essential filter to ensure physicians receive only the information they request and require. Our industry operates within a highly regulated environment where the auditability of information flow is essential to ensure compliance and maintain trust.

AI can assist with data retrieval and pattern recognition, but it cannot be held accountable in an audit or for a safety breach. That responsibility, and trust, still lies with MA.

What AI could unlock for Medical Affairs

Even with its current limitations, AI holds immense promise to elevate MA in ways that were previously out of reach. Here are three key areas where AI is already making an impact and where its influence will only grow.

Streamlined information processing

AI can process and synthesize vast amounts of information much faster than humans can. This allows MA teams to sift through large datasets, clinical trial reports, and other documents, ensuring relevant information is quickly accessible to key stakeholders.

Enhanced data accuracy

With proper training and validation, AI reduces the risk of human error in data processing and information retrieval. By improving data accuracy, AI could ensure that MA teams have access to the best possible information for decision-making.

Smarter, personalized HCP engagement

AI can personalize interactions with HCPs by analyzing their past queries and preferences and delivering tailored responses. It can also help track trends in Medical Information inquiries, enabling MA teams to proactively address emerging needs and gaps.

When used thoughtfully, AI doesn't just improve efficiency, it creates new opportunities for MA to lead with speed, insight, and precision.

Enhancing human capabilities

While AI brings a wealth of capabilities, it is not meant to replace human professionals in MA but to augment their work.

Here are some specific areas where AI could enhance the value of human expertise in the near future.

Role	AI use case	Benefit
Medical Science Liaison	Gain quick access to relevant data during field interactions	Search through vast datasets too large for a human to process in real time
Medical Information	Respond to inquiries more efficiently	Deliver accurate, up-to-date information to HCPs
Scientific Communications	Generate first drafts of scientific content	Establish foundational drafts of publications, presentations, and internal training materials
Business Operations	Automate collection, analysis, and reporting of key metrics	Track effectiveness of scientific engagements, measure performance, and manage operational processes more efficiently
Post-approval research	Generate RWE, analyze EHR and clinical trial data	Demonstrate robust evidence of a drug's safety and efficacy

Actions Medical Affairs teams can take today

Even with its current limitations, AI holds immense promise to elevate MA in ways that were previously out of reach. Here are three key areas where AI is already making an impact and where its influence will only grow.

❑ Educate MA associates on AI capabilities and limitations

Build a shared understanding of AI's strengths and limitations. Clear communication about what AI can and cannot do will help set realistic expectations for its value within the organization.

Empower teams to use these tools with confidence and skill. This includes training staff on how to craft strong, precise prompts, as the quality of AI output is directly correlated to the quality of the query. This will optimize AI's ability to provide relevant and accurate responses. Teams must also deeply understand AI hallucinations and how to detect, avoid, and correct any inaccurate outputs. Protocols for reviewing and validating AI-generated content should be in place early.

❑ Cross-functionally agree on timing/goals of AI adoption

Successful AI adoption does not happen in a silo. Teams must act now to agree cross-functionally on goals and timing for AI adoption. It is important to align MA with other departments (such as commercial, IT, legal, and regulatory teams) to set clear goals and timelines for AI adoption. This collaboration ensures that AI solutions are integrated seamlessly across the organization.

❑ Prepare for change management when AI is adopted

As MA anticipates the adoption of AI at the right time, we can prepare today for change management. The implementation of AI will require a monumental shift in mindset, workflows, and responsibilities. Preparing individuals and the organization for change through training, communication, and support will facilitate a smooth transition and maximize the impact of AI.

❑ Experiment with small-scale AI pilot projects

While the gap between current AI capabilities and MA needs exists, teams can initiate pilot AI projects to assess their impact and refine their approach. Running small-scale pilot projects, like using AI to triage internal support requests or respond to medical information requests from HCPs, tests the effectiveness of AI systems in real-world applications. These trial-run initiatives will provide valuable insights for deploying and refining AI adoption strategies.

These small but strategic steps lay the foundation for lasting, meaningful impact. **The organizations that prepare today will be best positioned to lead tomorrow.**

AI will not replace you, but it can help you lead

MA has every reason to be optimistic about the future of AI in MA. As these tools become more powerful, efficient, and reliable, MA professionals who embrace them will gain a competitive edge, delivering insights faster, driving better decisions, and elevating scientific exchange.

By taking repetitive tasks off your plate, AI gives MA professionals more time to focus on strategic, high-impact work, whether it's improving patient outcomes, engaging HCPs, or informing cross-functional decisions.

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Empathy, expertise, and ethical judgment — skills not possessed by AI — will always be the heart of MA. AI is a tool, not a decision-maker. But in the hands of trained professionals, it becomes a powerful advantage.

MA leaders do not need to wait for a perfect moment because there won't be one. The teams that experiment, pilot, and prepare today will be the ones shaping what comes next.