

CURRENT AND FUTURE AI TRENDS IN HEALTHCARE



**DHC GROUP:
PHYSICIAN RESEARCH
& INDUSTRY POV**



PART ONE: PHYSICIAN RESEARCH

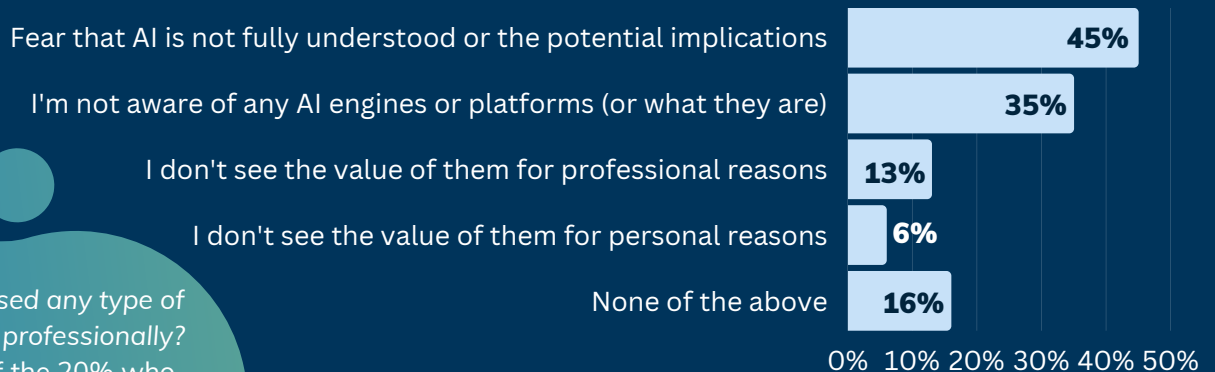
ABOUT THE RESEARCH:

DHC Group surveyed over 150 SERMO network HCPs from a range of general practice and specialties on their current attitudes towards AI in medicine, their personal use of AI, and their predictions for the future of AI in patient care and medical practice. For the purposes of this study, the future range offered to respondents was a 5 year time frame.

THE CURRENT PHYSICIAN RELATIONSHIP WITH AI - IT'S PERSONAL...AND PROFESSIONAL



80% OF PHYSICIANS ARE USING (ANY) AI NOW. THE REMAINING 20% ARE SPLIT... BETWEEN FEAR & LACK OF AWARENESS.



Q: Why have you not used any type of AI engine personally or professionally?
This was asked only of the 20% who responded "have not used AI in the last 12 months" to prior question.

IN THEIR OWN WORDS - HOW PHYSICIANS ARE CURRENTLY USING AI FOR PROFESSIONAL REASONS

diagnostic assistance new treatments learning

Clinical Tasks & Tools

diagnostic assistance differential diagnosis
medication refill automation
complex symptom diagnosis
healthcare management
treatment comparison

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professional email drafting cover letter writing
layman scripts generation appeal letter writing

Writing & Editing

letter of necessity writing informative blog writing
joke writing
Proofreading & spell check motivational speeches

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radiology findings information lookup
rare disease treatment research

Information & Research

current guidelines reference

medical condition summaries disease name and cause lookups
medical question accuracy testing
echo reading
literature searches

.....

consent form drafting note generation
template creation research manuscript summarization

Presentation & Document Creation

question generation contract creation
document summarization
presentation creation

hospital inpatient monitoring resource estimation
patient slot optimization

Workflow & Resource Management

diagnostic possibilities extraction
workflow augmentation
efficiency improvement
hospital optimization

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skin disease algorithms contract review

AI Digital Tools

digital assistants use
language translation
medication research

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treatment selection
patient communication
patient handout creation

Patient Interaction

patient portal interaction
patient information summarization
patient orientation
remote consultations

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Grant Writing recommendations

Coaching & Recommendations

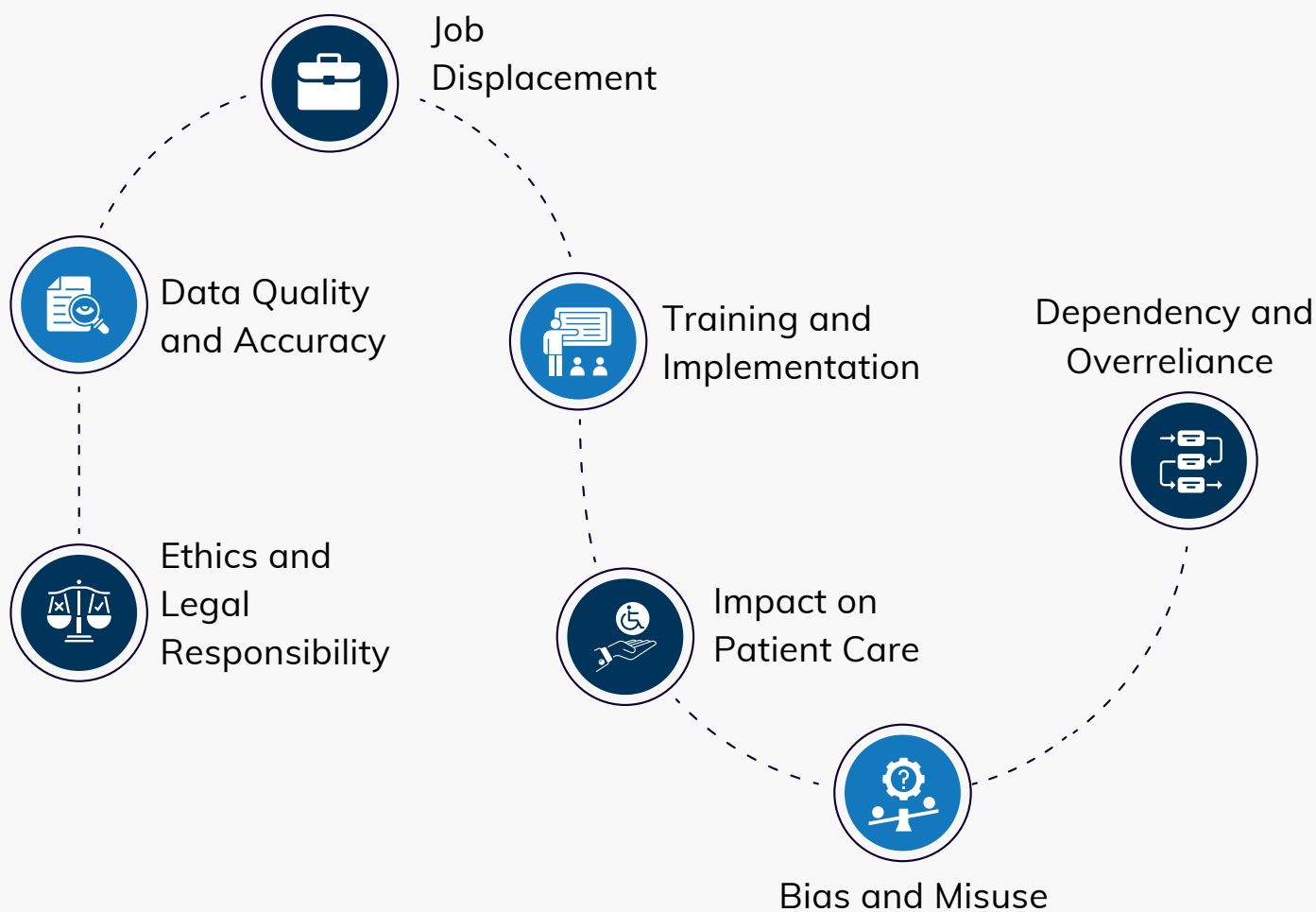
mental health coaching



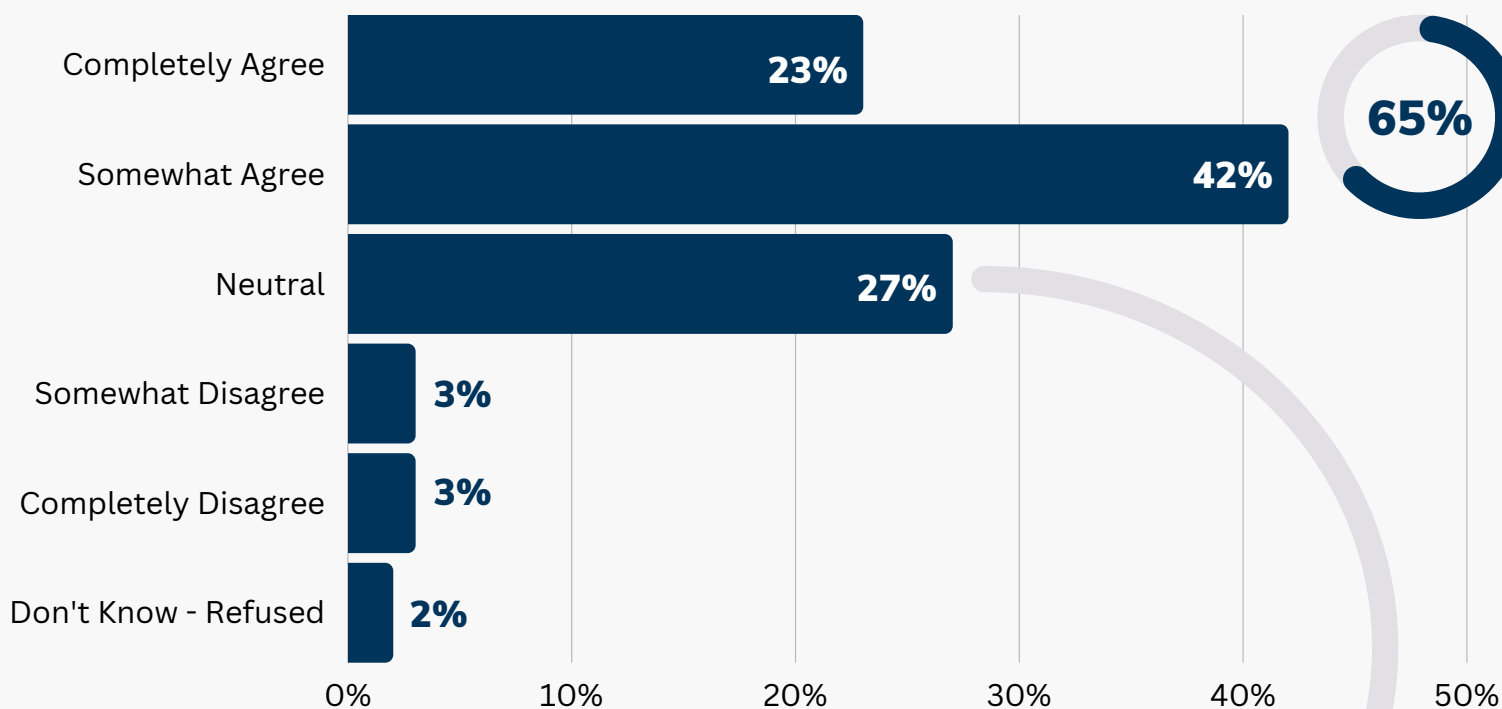
Q: Based on your use of AI engines and platforms for professional reasons in the past 12 months, what are some examples of how you have used AI for your practice - or for professionals reason overall?

FOR ALL PHYSICIANS SURVEYED, AI BRINGS WITH IT CONSIDERATIONS AND CONCERNS

While most respondents are neutral to positive about the impact of AI on the practice of medicine and patient care, we also asked them to share any concerns. We asked the 150 HCP surveyed "Overall, what are your primary concerns (if any) about the use, adoption, and integration of AI engines and tools into the practice of medicine?" Given examples such as "data quality, job displacements, ethical dilemmas, inadequate training for health professionals", HCPs responded in their own words with phrases such as "I have some concerns about clinical autonomy as well as decision making ability. For example I would not feel comfortable with AI planning treatment decisions for patients." and "Accurate information, less independent thinking of physicians, job losses in medical field". We have summarized these concerns into seven key areas of consideration.



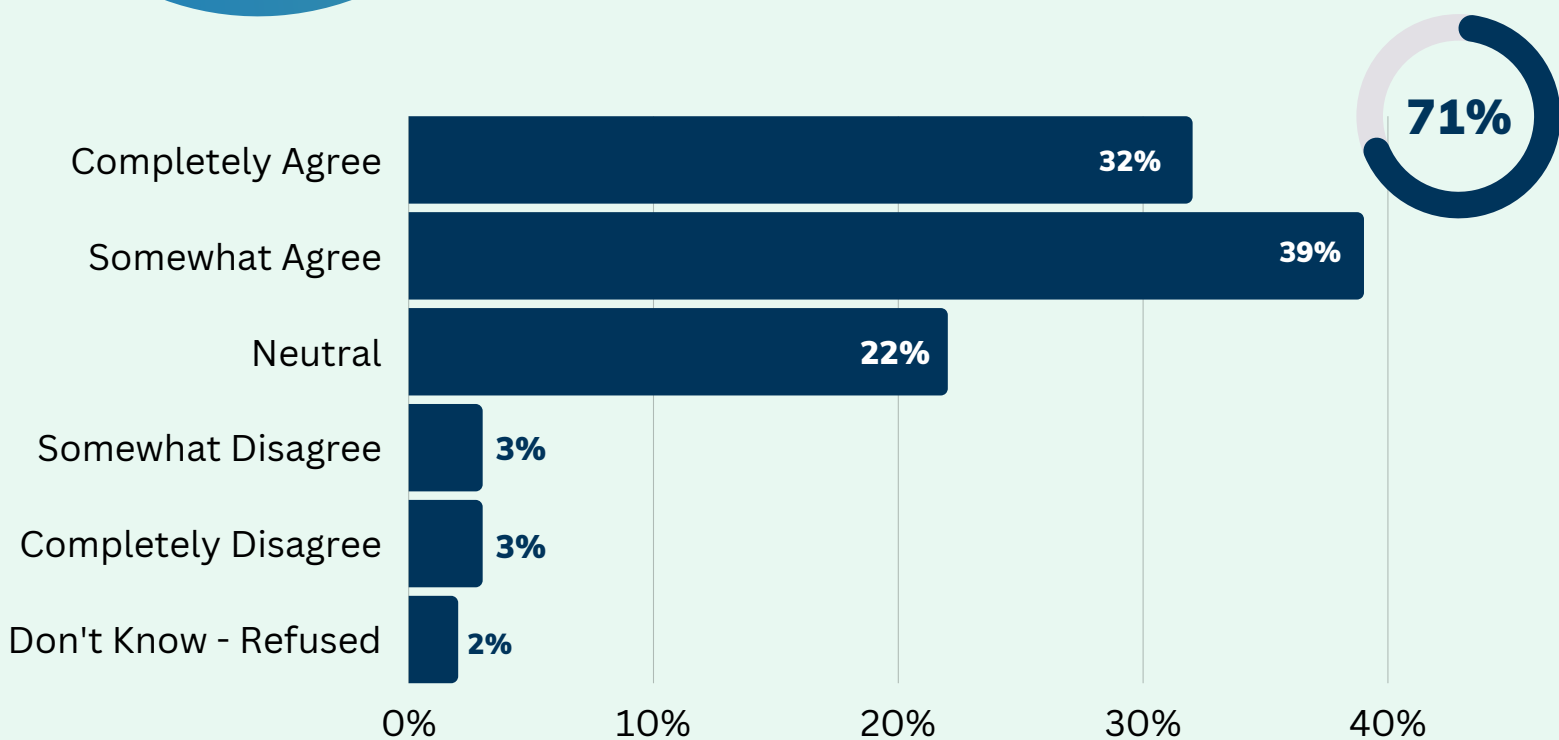
REGARDLESS, THE FUTURE IS BRIGHT - 65% OF PHYSICIANS ALREADY PREDICT A NET POSITIVE IMPACT ON PRACTICE OF MEDICINE, THANKS TO AI.



Q: To what extent do you agree or disagree with the statement: The use of AI for medicine will have a significant positive impact on the practice of medicine over the next 5 years.

YET, 27% STILL REMAIN ON THE FENCE.

RESPONDENTS AGREE EVEN MORE STRONGLY THAT AI WILL PLAY A ROLE IN THEIR OWN PRACTICE.



Q: To what extent do you agree or disagree with the statement: My personal use of AI for medicine will significantly increase over the next 5 years.

HOW HCPS SEE AI IMPROVING THE PRACTICE OF MEDICINE

With the majority of HCPs surveyed agreeing that AI is going to be a net win for the practice of medicine, we wanted to get more specific. Here are some of the examples provided by the physicians surveyed. These applications aim to improve efficiency, accuracy, and patient outcomes in the practice of medicine.



Note Writing and Documentation



Algorithm Development and Implementation



Diagnostic Aids



Research and Data Analysis



Integration with Electronic Medical Records (EMR)



Workflow and Practice Management



Radiology and Imaging



Patient and Professional Education



Treatment Suggestions and Personalized Medicine



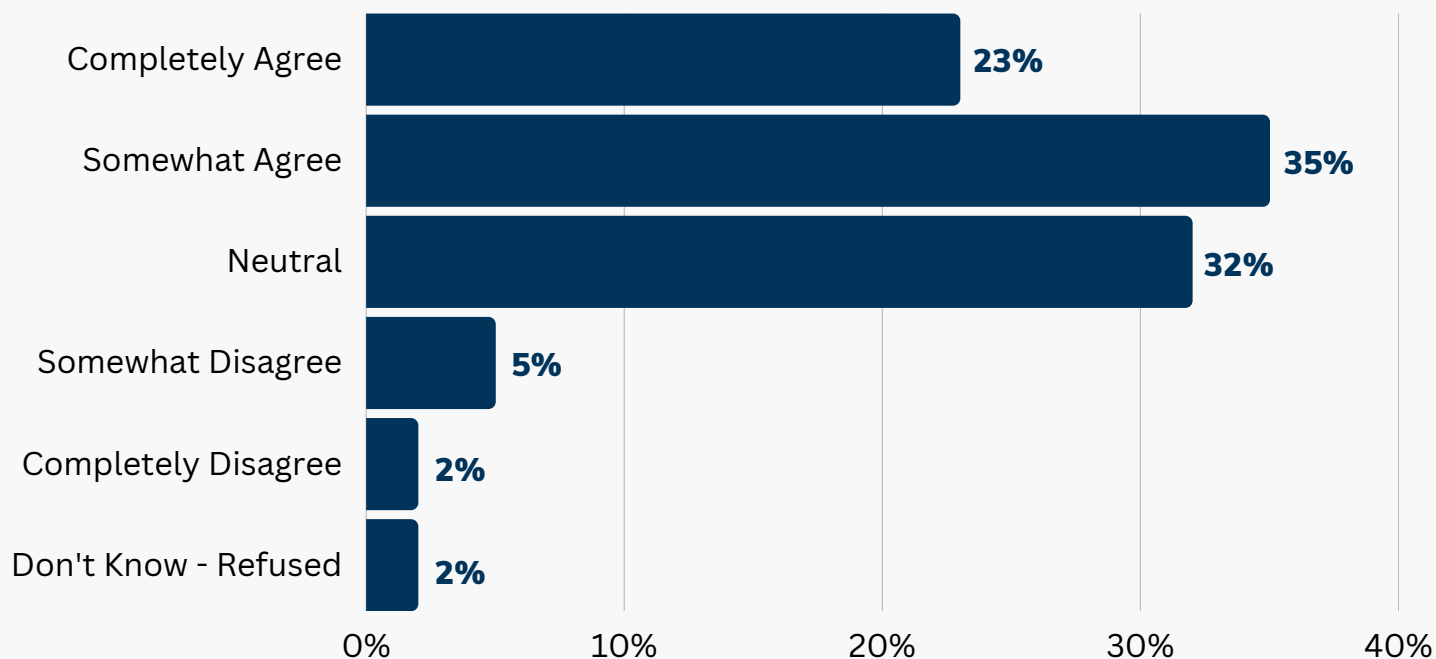
Remote Patient Monitoring and Telemedicine

Q: What specific applications or developments, related to AI, would you like to see for the practice of medicine?



AND THE REAL WINNER IS...?

OVER HALF OF PHYSICIANS CALL AI A FUTURE WIN FOR PATIENT CARE



Q: To what extent do you agree or disagree with the statement: *The use of AI for medicine will have a significant positive impact on patient care over the next 5 years*



WHAT'S THE ROLE FOR LIFE SCIENCES AND THE PHARMACEUTICAL INDUSTRY FROM THE PHYSICIAN'S PERSPECTIVE?

We asked physicians how they want to see pharma use AI to better help physicians. The recurring themes highlight the potential areas where AI can assist medical professionals in their interactions with pharmaceutical companies.



It's worth noting that a significant number of respondents either stated "no" or expressed uncertainty when asked about their needs for AI-based features. 1/3 of physicians were not interested in AI support/services from pharmaceutical companies.

SIX AREAS OF INTEREST FROM HCPS:



AI-based Customer Service and Sales Rep Chatbots: Many respondents were interested in AI-based customer service and sales representative chatbots, primarily for answering product-related questions. HCPs found the prospect of instant, round-the-clock support helpful. However, they also suggested the presence of an option to speak with a live person if needed, indicating a preference for hybrid services.

Support with Administrative Tasks: Several HCPs expressed interest in AI support for administrative tasks like prior authorizations and scheduling, highlighting the need for process streamlining and efficiency.





Drug Information & Interaction Help: AI assistance in the areas of drug information and interactions was another popular choice. Professionals were interested in accurate, real-time help regarding drug interactions, prescription information, research data, and patient-specific recommendations. This indicates a desire for more intelligent and precise decision-making tools.

Patient Education: AI's potential in enhancing patient education was recognized by some HCPs, suggesting that AI could assist in presenting complex medical information in an accessible manner to patients.



Cost Estimation: Some HCPs mentioned the potential use of AI in providing cost estimates or helping identify affordable treatment options, pointing to the importance of affordability in healthcare decisions.

Pharma-agnostic Tools: A few responses expressed the need for AI tools not specifically from pharma companies but rather integrated into existing healthcare databases, like "Up to Date", for a more holistic medical approach.



Q: Are there any AI-based features, content, or services you would like to see offered by pharmaceutical companies to you as a medical professional? For example, medical/scientific liaison chatbots, AI-based customer service, or sales rep chatbots to answer your product questions?



PART TWO: INDUSTRY POV



AI and the Future of Pharma Sales, Marketing, and Customer Experience

DHC Group recently spoke with 20 industry experts across a range of companies, including pharma, technology, and agencies, to ask about their take on the future of AI in pharma sales, marketing, and customer experience. In addition to asking about macro trends related to the use of AI - specifically generative AI - we also looked at practical examples where AI can deliver value to brand teams near term ... or is already delivering value today.

Not surprisingly, when asked to grade the current use of AI for pharma sales and marketing, none of our experts awarded a grade of A or B. With so much evolving on the AI landscape daily, our goal is to focus on the future opportunities related to sales, marketing, patient support, and medical affairs. Roughly 1/3 of respondents did give the industry's current use of AI a solid C, but that leaves plenty of upside for the future.



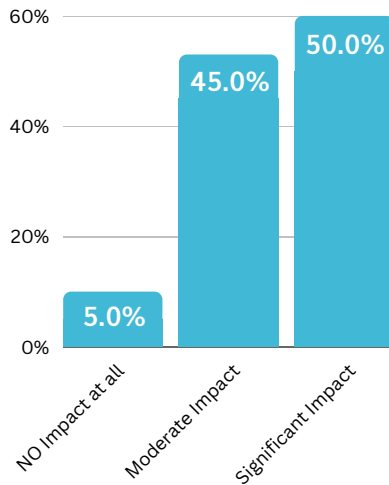
The Impact of AI on the Business

Knowing the experts see plenty of growth potential from how the industry is using AI today, we can look forward in time to ask about the potential impact of AI on various parts of the business over the next 5 years with a scale of No Impact, Moderate Impact, and Significant Impact. Using the indicator of "Significant Impact" as a proxy for where AI will have the biggest impact, we can see how the industry rates the following categories.

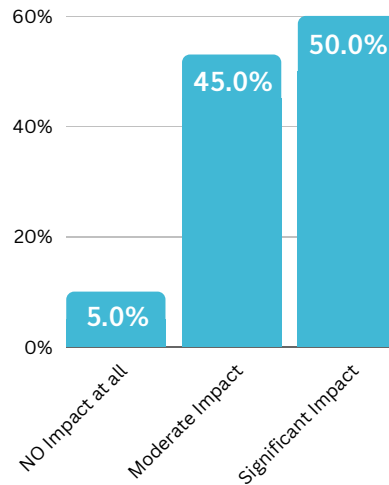
Fully 50% of industry respondents report AI will have a significant impact on the fundamentals of consumer marketing and HCP marketing. Perhaps no surprise given the potential of generative AI in content creation in the coming years. Beyond that, and very close to the top two, is the impact of AI on Patient Support Programs - with 45% reporting a significant impact in the near term. Medical Affairs is up next, with 42% reporting a significant impact from AI. Lastly, and perhaps a surprise to some, is that only 30% predict a significant impact on sales over the next 5 years. One likely explanation is that AI has already had such a significant impact on the sales force in recent years with next-best action, AI-driven targeting, call planning, and recommendation engines somewhat pervasive in many top pharma companies today.

HOW WOULD YOU RATE THE IMPACT OF (GENERATIVE) ARTIFICIAL INTELLIGENCE ON THE FOLLOWING AREAS OF PHARMACEUTICAL COMPANIES OVER THE NEXT 5 YEARS?

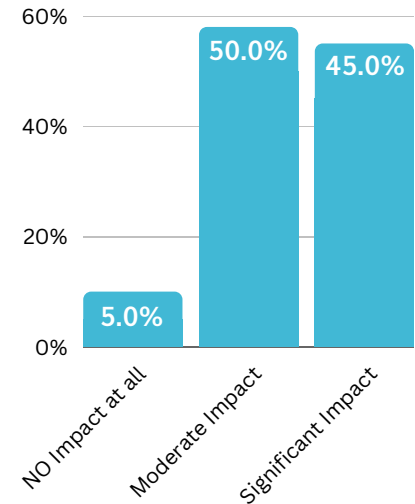
Consumer Marketing



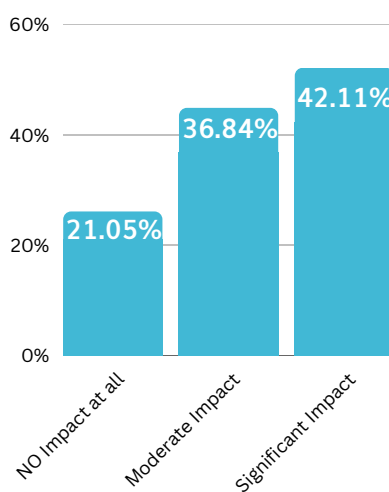
HCP Marketing



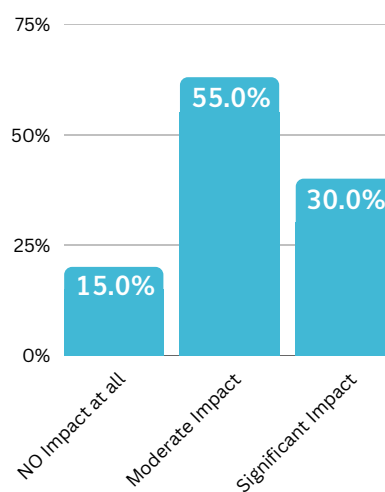
Patient Support Programs



Medical Affairs

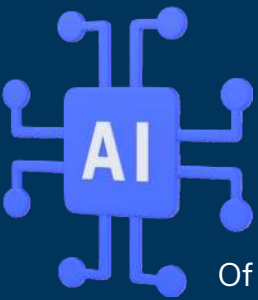


Sales



How We Defined "Generative AI"

A type of artificial intelligence technology that can produce various types of content, including text, imagery, audio and synthetic data.

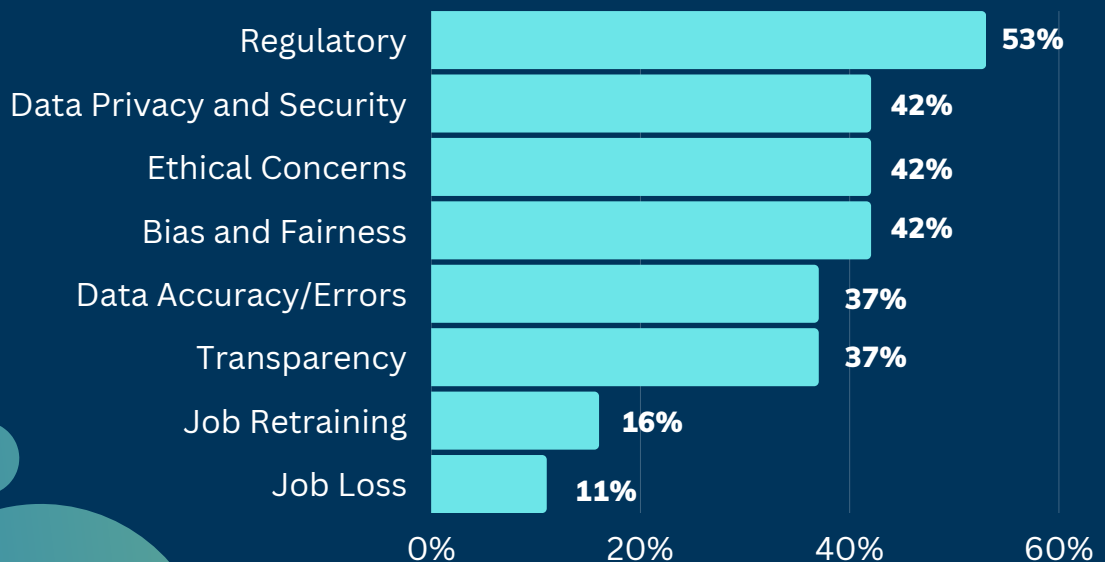


AI Concerns (and Obstacles)

Of course, no conversation about AI is complete without discussing the potential pitfalls, obstacles, or unforeseen impacts on the business. As part of this industry overview, we asked industry experts to rank various potential concerns with AI and pharma sales and marketing. The leading “concern” is regulatory - which is more an internal concern than an external impact or concern like most of the list. After regulatory concerns, the leading areas of concern are privacy, ethics, and bias - which speak to some of the softer challenges many companies must discuss and address in the coming years. Continuing the list of concerns, data accuracy, and transparency round out the 5th and 6h positions. After that, the level of concern drops quickly, with only 16% reporting job retraining as a significant concern and 11% saying job loss.

How concerned are you about the following areas with regard to the impact of (generative) AI as it relates to pharmaceutical sales and marketing on the following areas?

Very Concerned (% of respondents)



Direct from the Industry Experts

In addition to the quantitative survey with a range of industry experts, we asked a short list of experts for individual quotes about specific topics covered in the brief survey. The following are some excerpts from industry experts commenting on specific areas related to the impact, opportunity, and challenges of AI in pharma in the coming years.

AI FOR PHARMA SALES

“

Generative AI may help support rapid creation of reinforcement content that replaces primary promotional materials once they have failed to re-engage over and over until the desired outcome is reached.

Alex Sophocles, Vice President of Experience, imre health

”

“

We are moving into a realm where AI could be used to not just analyze and predict the next best engagement/action NBE/A, but also to write emails and ad copy, create appropriate and relevant images for campaigns, and orchestrate its own recommendations on who is to receive what, and when in each channel. Elements of this are happening today but expect the human involvement to decrease as AI picks up more of the workload. Layering in Rx and claims data as well as a deep data set of physicians online behaviors will also empower AI to conduct predictive risk analysis to pre-empt and avoid brand switching, move customers from trial to usage, etc.”

R.J. Lewis, President, Founder, and CEO, eHealthcare Solutions

”

“

“AI can be used to support reps in personalized conversation starters, pique their interests (HCP), and identify the critical priorities.”

Kate Rom, Group Account Director, imre health

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AI FOR PHARMA MARKETING

Generative AI can help create personalized content for pharma marketing campaigns. They can provide information about pharmaceutical products, guide customers through the purchasing process, and address common concerns or questions. AI chatbots can significantly improve response times, reduce customer service costs, and enhance overall customer satisfaction.

Mark Pappas, Senior Vice President, Growth and Innovation, CMI Media Group

On a brand website, AI can facilitate speaking to a no-see HCP with the latest data and package insert information.

Ashley Pippin, Director, Digital Health and former Director at Novartis Global Biome

Predictive AI models that combine patient care data with physician-level engagement data can be used to generate dynamic, weekly NPI lists of the physicians most likely to be actively treating brand-eligible patients during a specific window in time, as well as determine the channels where each is most likely to see and engage with brand content. By using these lists to direct both online and offline marketing activities, pharmaceutical marketers can increase the value and relevance of physician communications, while also deploying their resources more efficiently and cost-effectively.

Maria Cipicchio, SVP, Marketing and Communications, OptimizeRX

AI FOR PHARMA MEDICAL AFFAIRS

AI can help medical affairs teams stay on top of the latest scientific research. It can analyze research papers and clinical trial data to summarize the key findings. This saves time and helps medical affairs professionals make informed decisions.

Mark Pappas, Senior Vice President, Growth and Innovation, CMI Media Group

Generative AI could help support business intelligence for growth projections, predictive modeling for belief in the authority of the pharmaceutical company, adoption of their products or pipeline among peers, and overall expectations for an uptick in investments from stakeholders as a result.

Alex Sophocles, Vice President of Experience, imre health

Understanding the reading consumption habits of physicians can be used to build a knowledge graph on each user as well as inform Medical Affairs on gaps in medical literature. AI can initially suggest subject matter to write about and eventually also write the articles, translate them to multiple languages, etc.

R.J. Lewis, President, Founder, and CEO, eHealthcare Solutions

AI WITH AGENCY AND CREATIVE PARTNERS

Dynamic Content Optimization through DSPs to deliver large quantities of auto-generated combinations of copy/creative/messaging to rapidly optimize and AB test effectiveness of the advertisement.

Alex Sophocles, Vice President of Experience, imre health

Testing and learning, creative concepts, crowdsource info to better identify misunderstandings and the knowledge gaps to overcome.

Kate Rom, Group Account Director, imre health

The field could have it on their iPads or computers to use as a companion piece if the doctor needs more information.

Ashley Pippin, Director, Digital Health and former Director at Novartis Global Biome

AI FOR PHARMA SALES AND MARKETING - THE CONCERNS

Trust. How patients will feel if they know the content was generated leveraging AI instead of having that human touch patients crave when dealing with a life-altering condition.

Mark Pappas, Senior Vice President, Growth and Innovation, CMI Media Group

Solving how to report AEs or the privacy issue. It needs to be solved instead of just saying no, it won't work.

Ashley Pippin, Director, Digital Health and former Director at Novartis Global Biome

Ensuring that the juice is worth the squeeze... focus generative AI and machine learning opportunities on industries and solutions where the results will be most fruitful. We should not just do it for the sake of doing it (even if a client asks for it).

Alex Sophocles, Vice President of Experience, imre health

AND A FINAL THOUGHT...

We are early in the use of AI for use in pharmaceutical marketing, but not too early to begin experimentation. Knowledge and competitive advantage will accrue to those who embrace change and take calculated and measured risks. Experimentation will prove winning use cases.

R.J. Lewis, President, Founder, and CEO, eHealthcare Solutions

BONUS SECTION:

A Chat with GPT ... about AI and Pharma

When we released this survey to the DHC network, the creative thinkers at evoke melt had a unique approach to answering the questions. CTO Mike Moulton used an AI platform (ChatGPT) to create the following responses.

Here's a transcript of their conversation and Mike's thoughts on the implications:

As a generative AI, I'd like you to answer some survey questions about unique ways you will be able to impact life science and pharmaceutical companies' sales and marketing efforts in the future.



ChatGPT on how AI can be used for pharma sales:

- **Lead Prioritization and Customer Segmentation:** AI can analyze patterns in customer behavior and identify high-value leads, resulting in more focused sales efforts. It can also help in creating more precise customer segmentation, making sales strategies more effective.
- **Predictive Sales:** AI can be used to predict future sales trends based on historical data and market trends, allowing companies to anticipate demand and manage the supply chain.
- **Personalized Outreach:** AI can generate customized communication (e.g., emails, messages) tailored to individual customer preferences and behaviors, improving the chances of conversion.



ChatGPT on how AI can be used for pharma marketing:

- **Content Creation:** Generative AI can be used to create a variety of marketing content, from blog posts to social media updates.
 - **Ad Targeting:** AI can analyze demographic and behavioral data to effectively target ads to the right audience.
 - **Market Analysis:** AI can sift through massive amounts of data to identify emerging market trends and shifts in consumer behavior, providing actionable insights for marketers.
-



ChatGPT on how AI can be used for patient support:

- **Patient Education:** AI can generate easily understandable content that educates patients about their conditions, treatments, and medications.
 - **Personalized Support:** AI can be used to create personalized plans and reminders for patients, such as medication schedules or lifestyle changes.
 - **Chatbots and Virtual Assistants:** AI can power chatbots and virtual assistants that provide 24/7 support, answering queries and providing information to patients.
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ChatGPT on how AI can be used for pharma medical affairs:

- **Research Synthesis:** AI can analyze and synthesize large volumes of clinical research data, making it easier for medical affairs teams to stay updated with the latest findings.
 - **Communication:** AI can help in generating precise and understandable communication materials to relay complex medical information to different stakeholders.
 - **Monitoring Adverse Events:** AI can be used to monitor and identify patterns in adverse event reports, helping in faster response and mitigation.
-



ChatGPT on how AI can be used for content and creative by pharmaceutical marketing brands and their agency partners:

- **Lead Prioritization and Customer Segmentation:** AI can analyze patterns in customer behavior and identify high-value leads, resulting in more focused sales efforts. It can also help in creating more precise customer segmentation, making sales strategies more effective.
- **Predictive Sales:** AI can be used to predict future sales trends based on historical data and market trends, allowing companies to anticipate demand and manage the supply chain.
- **Personalized Outreach:** AI can generate customized communication (e.g., emails, messages) tailored to individual customer preferences and behaviors, improving the chances of conversion.



ChatGPT on concerns about the use of AI for pharmaceutical sales and marketing:

- **Data Privacy:** The use of AI in marketing and sales often involves analyzing customer data, which raises privacy concerns. Companies must ensure compliance with data protection regulations.
- **Bias:** AI models can inadvertently learn and reproduce biases present in the data they are trained on, leading to unfair or discriminatory practices.
- **Transparency and Trust:** The decisions made by AI models can often be hard to interpret. This lack of transparency can make it difficult for customers and other stakeholders to trust AI-driven decisions.



Mike Moulton, CTO of evoke melt next gave ChatGPT a chance to make a case for AI use in healthcare in its own words.



"As a generative AI, I'd like you to answer some questions about unique ways you will be able to impact life science and pharmaceutical companies' sales and marketing efforts in the future."

Sure, I'd be happy to answer the survey questions. Please note that as an AI, I don't have personal experiences or feelings, but I'll provide answers based on my training and knowledge base.

How can you help life science and pharmaceutical companies streamline their sales and marketing efforts?



I can process and analyze large amounts of data faster and more accurately than humans, which can be used to identify patterns, trends, and insights. These insights can guide sales and marketing strategies. I can also automate routine tasks, freeing up human workers to focus on more complex and creative tasks. I can provide up-to-date information on markets, competitors, and customers, as well as personalized content recommendations for different customer segments.



In what unique ways can you impact these companies?

I can generate new ideas for marketing strategies based on data analysis, simulate the potential outcomes of different strategies, and recommend the most promising ones. I can also facilitate personalized customer interactions at scale, enhancing customer relationship management. In sales, I can predict customer behavior, optimize pricing, and improve sales forecasting accuracy.



Mike had this to say about this rather meta experiment on using AI to complete a survey on its own role in the future of pharma marketing...



Melt has always supported a culture of imagination and innovation, and working with artificial intelligence has been fascinating. Some of these responses are insightful and, to be honest, hard to argue with.



About the Sermo RealTime Network

Sermo RealTime provides on-demand access to global HCP insights through their proprietary community of 1.3M physicians and allied healthcare professionals. Launch your own surveys from scratch, leverage their library of expert-crafted healthcare survey templates, or let Sermo do all the heavy lifting with concierge services. Learn more at <http://sermo.com/business>

About DHC Group

Expanding on the legacy of the 501(c)(3) nonprofit organization Digital Health Coalition, the DHC Group funds and conducts research, hosts and produces industry events, while offering media and outreach opportunities for its members. The DHC Group partners with numerous industry outlets, including the Digital Health Coalition, to drive industry thought leadership forward and make research-supported content available to a broader audience of pharmaceutical, media, publishing, technology, and advertising firms interested in the future of digital health, marketing, and customer experience.

TheDHCGroup.com

For more information about The DHC Group, contact Executive Director, Christine Franklin at cfranklin@thedhcgroup.com.

The logo for DHC Group is displayed within a white rounded rectangle. It features the text "DHC GROUP" in a large, bold, blue sans-serif font. To the left of the "D" is a blue triangle pointing to the right. Below "DHC GROUP" is the text "NETWORK • INSIGHTS • EVENTS" in a smaller, blue, all-caps sans-serif font, with blue dots separating the words.

DHC GROUP
NETWORK • INSIGHTS • EVENTS