

CUSTOMER-CENTRIC APPROACH TO MEDICAL AFFAIRS LEVERAGING DIGITAL TECHNOLOGY

Michael DeLuca, PharmD, MBA, MSRA,
Senior Vice President, Medical Affairs

Abidur Rahman,
Vice President, Innovation



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Overview

As technology has advanced and the needs of healthcare professionals (HCPs) and patients have changed, Medical Affairs departments now need to have technology and innovation roadmaps in place to offer their customers omnichannel solutions to ensure communications are occurring via the customer's preferred channel.

Medical Affairs should think beyond just having a medical plan and strategy because having a digital strategy for customer engagement is becoming equally important.

Healthcare professionals require medical information and data regularly. A survey conducted by phactMI in 2019 to evaluate HCP preferences for accessing medical information in the digital age demonstrated that of the 511 respondents, 88.5% searched for medical information either daily or several times per week.¹

The complexity of treatment options and algorithms is also driving the need for easy access to the latest data and information to ensure the safe and effective use of pharmaceutical company products. This is especially seen in oncology, hematology, immunology, rare diseases, and many other therapeutic areas.

The COVID-19 pandemic has also accelerated digital adoption. HCPs and patients have gotten used to telehealth/telemedicine, medical congresses switched to virtual or hybrid events, Medical Science Liaisons (MSLs)

engaged with Key Opinion Leaders (KOLs) virtually, medical advisory boards switched to largely virtual events, etc. As more HCPs have engaged with social media and digital platforms, the focus to develop KOLs, mapping and strategy have also shifted to include digital opinion leaders (DOLs) and understanding their sphere of influence.

Now is the time to take a more customer centric approach and embrace and leverage advancing digital technology to improve the customer experience.

Medical Affairs Portals

Medical Information (MI) self-service portals are not new. These websites have been around for more than 15 years, and many pharmaceutical companies have built and invested in these websites. All typically include the ability to search the MI response document library to obtain copies of approved scientific response documents (SRDs). However, search functionality has traditionally been limited, and difficult for healthcare professionals to quickly find the information they are looking for to address their question(s). Also, beyond a basic search, other available information was typically limited other than by submitting a request online or contact information for MI and reporting an adverse event. Over the years as technology has advanced, the functionality has improved and portals have become more comprehensive, offering information and services across Medical Affairs functions. See *Figure 1*.

Figure 1: **Medical Portals Are More Than Just Medical Information**

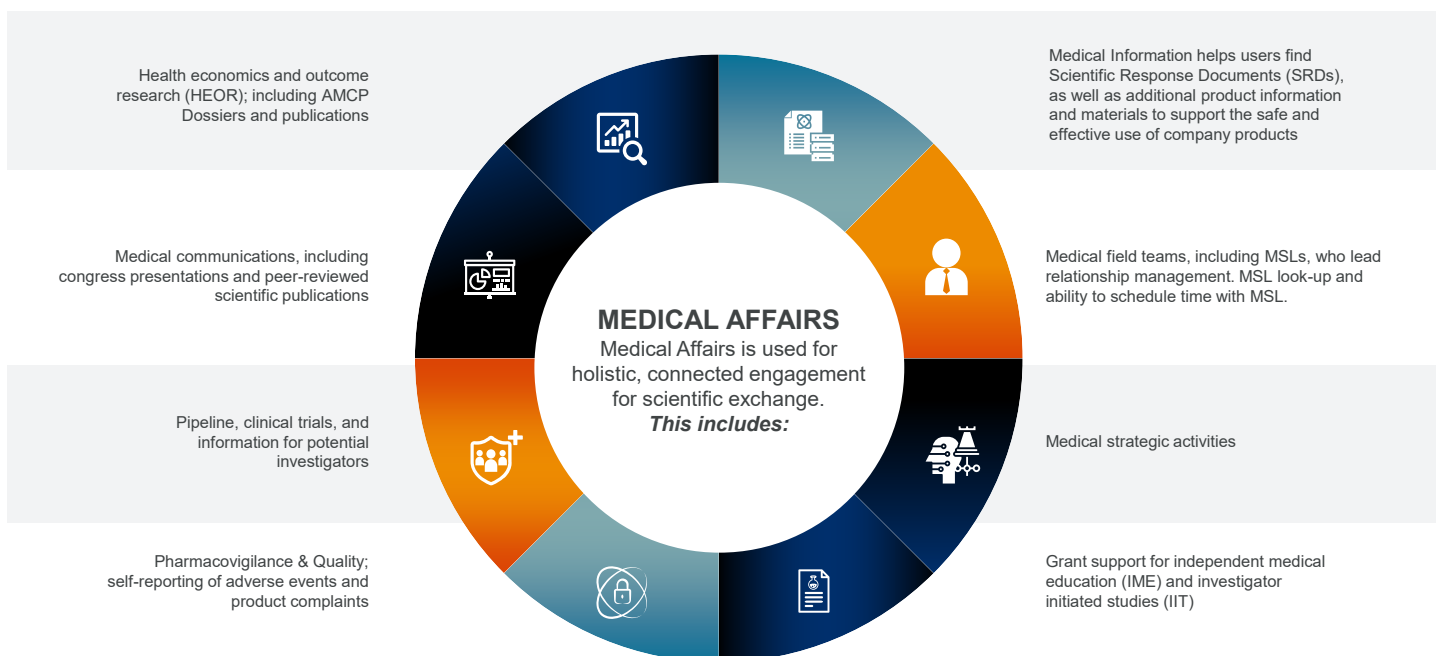


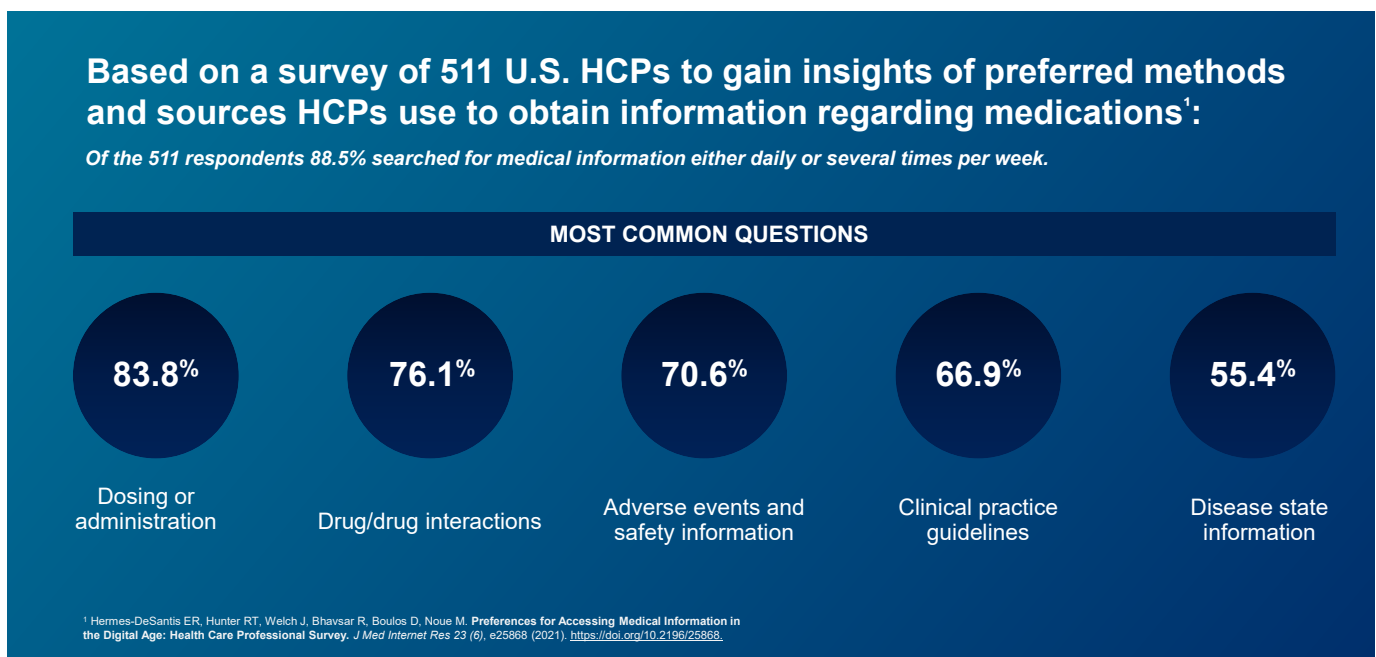
Figure 2: Medical Portal Best Practices & Industry Trends



Multiple benchmarking publications have also been published regarding medical portals, highlighting the evaluation, current trends, and usability. See Figure 2.

Additionally, research has been conducted regarding healthcare professionals’ utilization and preferences in obtaining medical information. A survey conducted by phactMI in 2019 to evaluate HCP preferences for accessing medical information in the digital age demonstrated that of the 511 respondents, 88.5% searched for medical information either daily or several times per week. See Figure 3.

Figure 3: Healthcare Professionals’ Utilization of Medical Information



When designing a medical portal and developing a customer engagement strategy, it is important to understand users' needs, and providing easy access to the most important information is critical. Functionality and features to consider are highlighted in *Figure 4*. However, before developing a medical portal, it is important to take into consideration user experience, customer experience, content strategy, and how to incorporate and provide personalization. Awareness and access are also essential. Just assuming "build it and they will come" is not enough. Developers need to have a communication strategy and get early buy-in from legal, regulatory, and compliance; plus, collaboration and partnership with corporate communications and groups managing company social media to build an effective and compliant strategy for building awareness.

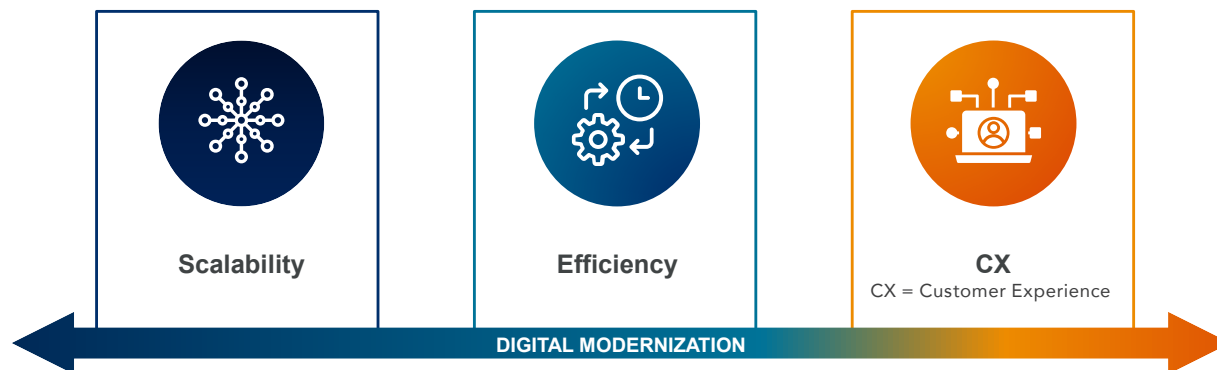
Figure 4: **Medical Portal Functionality and Features**

SEARCH Semantic search (or keyword driven if required) based on requirements. Ability to search library approved MI response documents and other materials.	CHATBOT / LIVE CHAT Conversational AI driven chatbot with fully integrated live chat.
MSL Look-Up / Contact Ability to find local MSL, including profile, contact information, and request to schedule a meeting.	PIPELINE / CLINICAL TRIALS Leverage search inputs to build a keyword rich manuscript to drive discoverability and relevance.
MEDICAL CONGRESS INFO Companies will have a presence at upcoming medical congresses and ability to find posters and oral presentations from previous meetings	INVESTIGATOR INITIATED STUDIES Information about and ability to submit IIS grant request.
SUBMIT MI REQUEST Ability to find MI contact information and submit a request online.	INDEPENDENT MEDICAL EDUCATION Information about and ability to submit IME grant request.
AE REPORTING Ability to self-report and submit an AE via an electronic form.	DISEASE INFORMATION Disease state information including information about clinical guidelines, diagnosis, treatment algorithms.
PC REPORTING Ability to self-report and submit a PC via an electronic form.	OTHER TOOLS Stability calculators, educational videos, news & events, publications, links to sample requests / sales rep request / info on patient assistance programs

Digital Modernization In Medical Affairs

Digital advancements have changed customer experience in significant ways in the last 20 years; however, there haven't been major technological advancements in the Medical Affairs space. While this space is ripe for modernization, there has been hesitancy due to the unique nature of the Medical Affairs functions and the compliance around them. Digital has transformed other highly regulated industries such as financial and manufacturing industries, and the opportunity remains ripe in most pharmaceutical companies to meet the customers' digital engagement expectations. There are more customers and data than ever before; there is also more visibility on Medical Affairs and its ever changing landscape. There are many obvious reasons to focus on digital modernization; the key ones among them can be grouped in the following three categories. See *Figure 5*.

Figure 5: **Key reasons for digital modernization**



Scalability allows systems to be equally effective with constantly expanding data and processes that would otherwise be highly inefficient in a manual or traditional system. Digital automation provides an integrated solution that makes large amounts of data processing a scalable activity. Without scalable systems, organizations would end up with data challenges which would make day-to-day tasks untenable.

Efficiency is probably the easiest part of digital modernization to understand from a business standpoint. There is more to efficiency than automatic tasks and reducing the time it takes to accomplish a task. Efficiency is tightly connected with quality and job satisfaction. Efficiency can significantly change business processes and even remove certain aspects of a job altogether. Certain types of tasks are a good fit for automation and can allow people to focus on tasks that are more suited for human intervention. Efficient processes can create feedback loops that can improve overall business processes.

Customer experience (CX) has gone through a fast evolution in recent years due to availability of new technologies, desire for real-time, personalized experiences and the ability to have a two-way interaction rather than a unidirectional flow of information, products, and services. The relationship with a customer is often service-oriented where a company provides a specific service: it can be community-based where a company can help build a community for the customer base, or it can be self-service based where the customer gets everything they need from a company in a quick and efficient manner. In some industries, such as retail and education, the latter has generally become more popular; some aspect of self-service is gaining interest in every industry. Ideally, we should strive to provide a good balance of all three forms of customer experience in Medical Affairs.

There are several reasons for the speed at which digital evolutions have taken place, and that includes availability and advances in microprocessors, availability of faster and bigger data storage systems, faster internet speed, mobile devices, and new algorithms in Artificial Intelligence (AI) such as deep neural networks. AI has undoubtedly impacted every aspect of the user and customer experience and we should certainly consider leveraging this newfound superpower in the Medical Affairs space. In the next section we will briefly discuss how various aspects of AI should be considered in Medical Affairs. There are many features

of AI: forecasting, predictive analytics, computer vision, language analysis, facial recognition, speech-to-text and more. In this paper we will only focus on one important area of AI that has the highest immediate impact in our industry, Natural Language Processing (NLP), while recognizing that other areas of AI can play a significant role to solve specific challenges.

Natural Language Processing (NLP)

NLP is one of the fastest growing fields of AI and is all about making sense of the human language which is, by its nature, unstructured. Language is not bound by data limits, and database requirements and languages also evolve rapidly over time as new words get added to the dictionary and older words become less prominent. Eliciting meaning from language, and evolving language to create new concepts is a unique human capability. Because of the advances in deep neural networks, which is loosely modeled after the human brain, AI has accomplished near human capability of language understanding and, in some cases, AI has surpassed human capabilities in certain tasks.

Here are some of the key features of NLP and how they apply in Medical Affairs.

Entity recognition is the capability of AI to identify key concepts such as diseases, personal names, treatments, etc. Being able to identify these concepts at scale allows us to perform a better and more targeted search, identify trends, recognize important concepts, and quickly gather insights from large amounts of data.

Categorization is also known as classification or tagging. AI has the ability to predict one or more predefined categories and concepts based on content. This requires the AI engine to be custom trained with pre-labeled data. Once properly trained, AI can quickly categorize large amounts of data. Tagging by human experts is a very time-consuming process and it is not scalable when done manually. This feature of AI can potentially save large numbers of hours.

Sentiment analysis is AI's understanding of the overall sentiment of a chunk of text. Even though sentiment analysis started out as a simple positive and negative sentiment detection task, sentiment analysis has now evolved to understand various other emotional aspects of text such as sarcasm, sadness, happiness, and various degrees of positive and negative sentiment. This capability is especially important when analyzing patient

and HCP social media posts and voice-based content. Sentiment analysis, along with content categorization, provides a true view of what our audience is saying and discussing with their peers. The learnings from this information allow us to create better content and understand positives and negatives more objectively.

Automated content audits allow us to manage and organize massive amounts of data with little or no supervision. Data can be in the form of text, binary files, or multimedia. More data gets generated now than ever before and the rate of data creation is growing exponentially. According to forecasts, by 2025 there will be over 180 zettabytes of data. That is about 118.8 zettabytes more than in 2020. For reference, one zettabyte is 1021 bytes⁴. While medical affairs data is a small subset of the universe of available data, it is still a significantly large amount of data for any organization and it is growing rapidly. Being able to keep track of the information and the metadata is a requirement that can be difficult to accomplish without AI automation. Entity recognition, categorization, auto-tagging, language recognition, etc., allows AI to accomplish this task in a scalable manner.

Smart Search is also known as semantic search. Smart search can help us find documents and information not only based on keywords, but also based on the context of the end user, misspellings, phrases, complex queries, etc. Finding the information and documents is one part of the solution. The other important part is ranking the documents based on relevancy of the information. This is similar to what Google does within its search engine for the world wide web. Smart search allows us to do the same thing in the context of medical information.

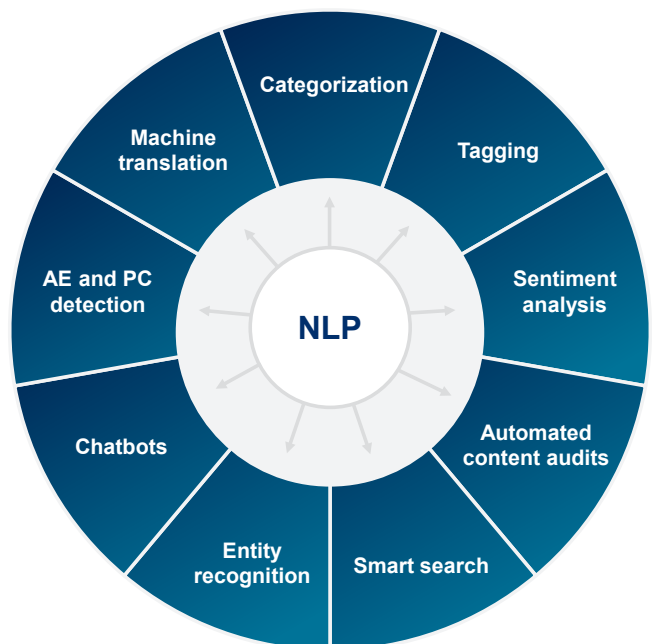
Chatbots are an essential aspect of self-service. There are various types of chatbots, such as guided chatbots, which are algorithmic and follow a predefined conversational flow. Then there are AI-based conversational chatbots that are fully open-ended and can appropriately respond to user queries and comments. Often, the ideal implementation of a chatbot is a combination of both these types. Chatbots can help answer questions, receive

information from users, execute complex workflows, and connect users to call center agents if needed. Chatbots are not only useful time savers, but they can also build an exceptional customer experience when implemented appropriately.

Adverse events (AE) and product complaints (PC) detection allow AI to automatically detect potential AEs and PCs in text. This is especially important when doing literature review and analysis of user generated content. AE and PC detection and review is an important compliance task that is very time consuming and not scalable when performed manually. Automating this process can not only save a lot of time, it can also be more accurate over time.

Machine Translation (MT) or AI based translation is another one of the fast-growing areas of NLP. AI can currently reach an accuracy level of around 90% and is improving every day.⁵ There are several advantages of using MT over human translation such as consistency, scalability across hundreds of languages, real-time speed, cost-savings, limited or no overhead, and automated-continuous-learning. However, MT is most effective when it is trained in the specific nuances of the Medical Affairs language and with some level of human oversight and quality assurance.

Figure 6: Key features of Natural Language Processing

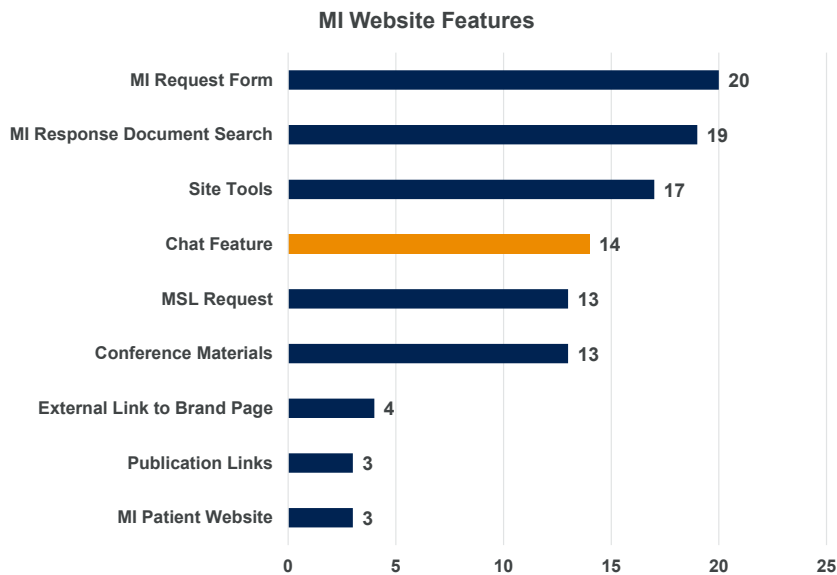


Medical Chatbot

Many companies now offer live chat on their medical portals. A recent poster presentation at DIA Medical Affairs and Scientific Forum in 2022 that evaluated 20 different pharmaceutical company medical portals demonstrated that 70% offer chat. See Figure 7. However, live chat has the same limitations as phone channels in only having staffing available during defined business hours.

Figure 7: **Recent Benchmarking of Medical Portals**

Data was collected from 20 pharmaceutical companies' U.S. MI websites from August 24 to September 14, 2021 and demonstrated the following results¹:



¹ Tatavets T, Huang T, Dinh T, Sandhu S. Medical Information Website Features and Ease of Access: A Benchmarking Study. Poster Presented at DIA Medical Affairs and Scientific Forum 2022. Orlando, FL.

Chatbots with conversational AI allow for a better customer experience and provide 24/7/365 availability to address the most common questions healthcare professionals have. Chatbots with conversational AI also reduce friction while quickly and accurately providing an MI response to an unsolicited request for information. Chatbots also have several other advantages, including leveraging machine learning, semantic search, NLP, and sentiment analysis.

Content Evolution

Data and content are still key. Thinking digitally without a content strategy is a mistake. As important as it is to understand channel preferences for communication, it is equally important to understand content needs and preferences. A lot of recent research has been published about customer content preferences regarding medical information. Please see our white paper on the [*Importance of Impactful Medical Information Content*](#).

Considerations for content and materials for development and possible inclusion on the medical portal should include the following:

- **Information on medical congress presence, including presented posters and oral presentations**
- **Virtual /digital /interactive posters**
- **Organization and ability to search publication citations**
- **Graphical/visual abstracts**
- **Podcasts**
- **Short video presentations**
- **Materials for patients/plain language summaries**
- **Infographics**
- **Digital/interactive scientific response documents**
- **Digital package inserts (e.g., Structure Product Labeling)**
- **Content for live chat and chatbots**
- **Brief topic-specific slide decks for video chat and virtual MSL meetings**
- **Componentized content and more personalized content**

Customer Centricity

Medical Affairs has a critically important strategic role in each organization. Medical Affairs has always been responsible for bridging the gap between clinical development and marketing/market access. Core responsibilities have traditionally included evidence generation and data dissemination. However, the value and importance of Medical Affairs have been elevated with the belief and evidence that Medical Affairs can drive improved patient experiences and outcomes. This is accomplished by the role Medical Affairs plays in accelerating access to treatments, understanding the prescriber and patient journey, leveraging innovative approaches to data generation and dissemination, and

generating meaningful and actionable customer insights. Additionally, Medical Affairs has multiple customer-facing groups that engage with healthcare professionals, patients/caregivers, and payers throughout the lifecycle of a product, which can provide critical customer insights that are valuable to every organization. Often, organizations only think of field medical (MSLs) and sales representatives as customer-facing, but medical information and patient services are also important strategic customer-facing groups that can contribute to generating meaningful insights. Now is time for the Medical Affairs department to transform customer engagement and take a more customer-centric approach across each function and department.

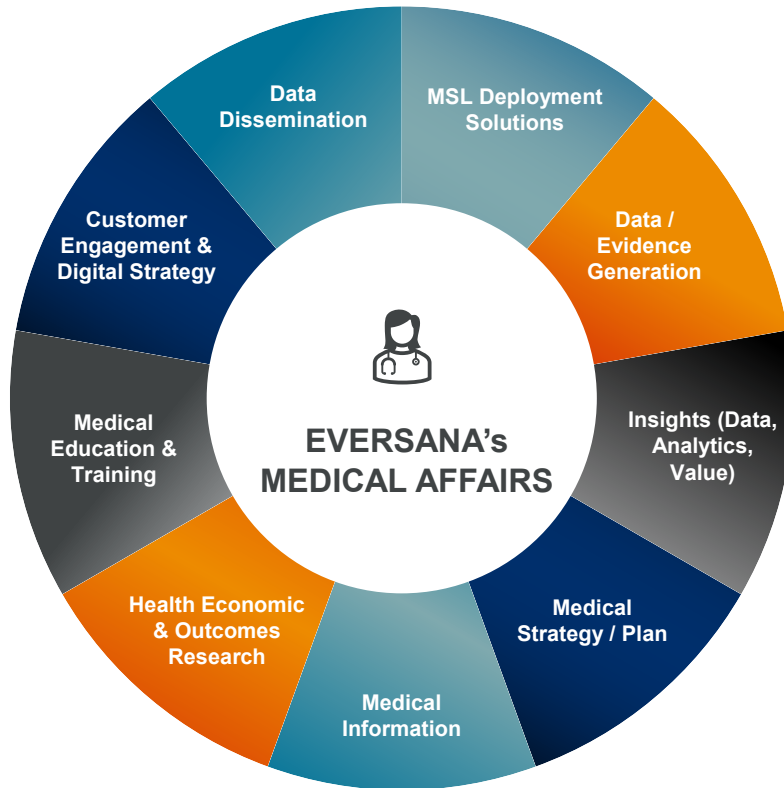
Customers want simple, concise, and relevant communications across various channels of communication and engagement. HCPs want quick and easy access to accurate, truthful, unbiased, and current medical information and scientific data to inform clinical decision making and optimize patient outcomes. Additionally, providers, patients, and healthcare decision makers want a more tailored and personalized experience. Self-service and access to information on the customers' preferred channel and information in the customers' preferred format are becoming more critically important and expected by customers. Organizations must understand customer needs and preferences, as well as differences among different customer types and specialties. This understanding should leverage and develop customer engagement, customer experience, and scientific exchange/data dissemination strategies and tactics.

EVERSANA's Medical Affairs Services

EVERSANA has built a unique integrated commercial services platform that allows us to manage the complete launch and commercialization of products for partner clients. Additionally, EVERSANA provides numerous capabilities to support Medical Affairs, from field deployment of Medical Science Liaisons (MSL), Scientific Platform and Scientific Narrative creation, Health Economics and Outcome Research (HEOR) and Real World Evidence (RWE), Consulting Services and Strategic Medical Plan Development, Digital Medical Affairs Strategy and Solutions, Medical Content Development, and integrated end-to-end Global Medical Information support, including MI Contact Center services.

EVERSANA also has a vision for building a robust Medical Affairs service offering that will be a best-in-class solution across Medical Affairs functions. See *Figure 8*.

Figure 8: **EVERSANA's Vision for Robust Medical Affairs Services**



What makes EVERSANA unique is our ability to leverage expertise throughout our service offerings and provide a multifaceted approach to developing impactful solutions for our clients. As an example, see our approach to next-gen medical content development, developing digital engagement solutions, and omnichannel solutions. See *Figure 9*.

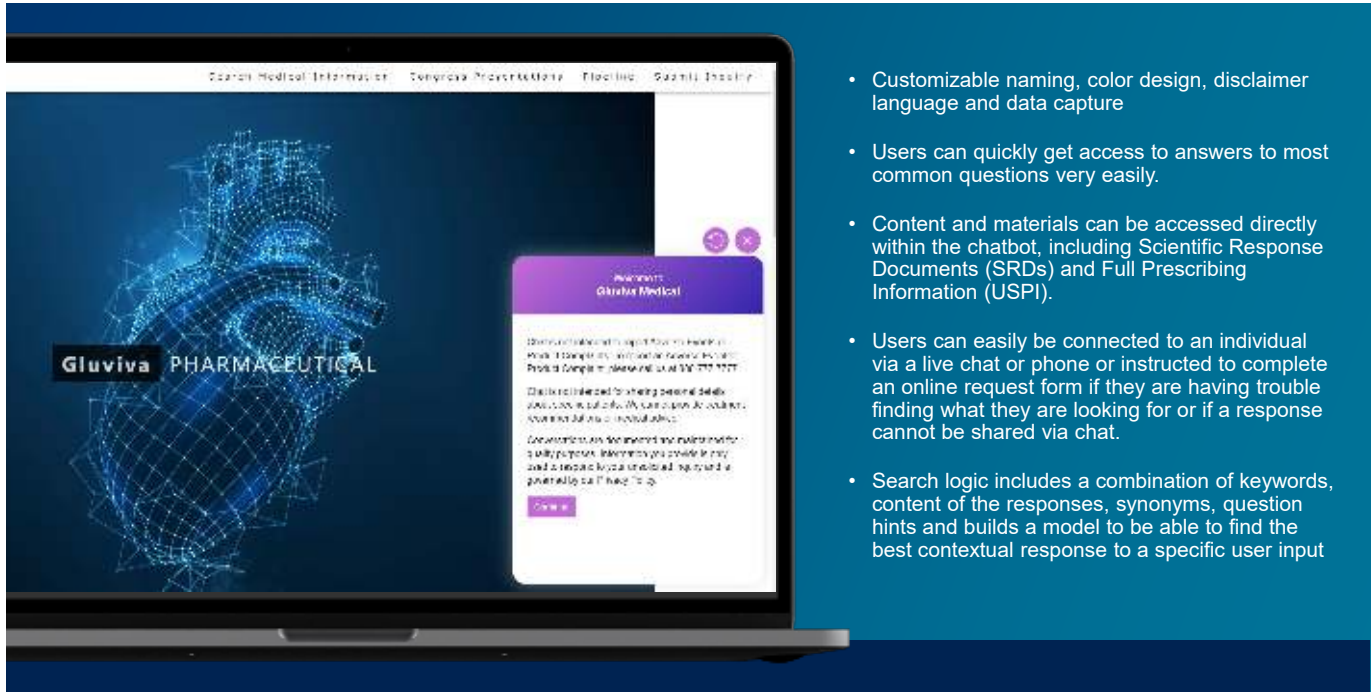
Figure 9: **EVERSANA NextGen Medical Content Capabilities**



EVERSANA's digital agency capabilities allow us to partner with our clients to develop innovation and digital strategy roadmaps for Medical Affairs and build and deliver unique digital solutions, including customized medical portals, a medical chatbot with conversational AI, and omnichannel service. We apply the same strategic expertise as applied to next-generation content, medical, creative, and digital strategy, plus leveraging our expertise in user experience (UX) and customer experience (CX) design.

Another example of innovation and our multi-faceted approach to improving customer engagement is the development of EVERSANA's Medical Chatbot which leverages conversational AI. See Figure 10.

Figure 10: EVERSANA's Medical Chatbot



EVERSANA's proprietary AI platform Cognitive Core™ is custom built for pharma and it is trained specifically to execute AI tasks for the pharma industry. The conversational chatbot with live chat capabilities is an important feature of Cognitive Core and the platform makes it easy to plug into multiple channels such as web, mobile, voice, and SMS to provide real-time self-service capabilities. In addition, entity recognition, content categorization, adverse event detection, product complaint detection, etc., are built into the platform.

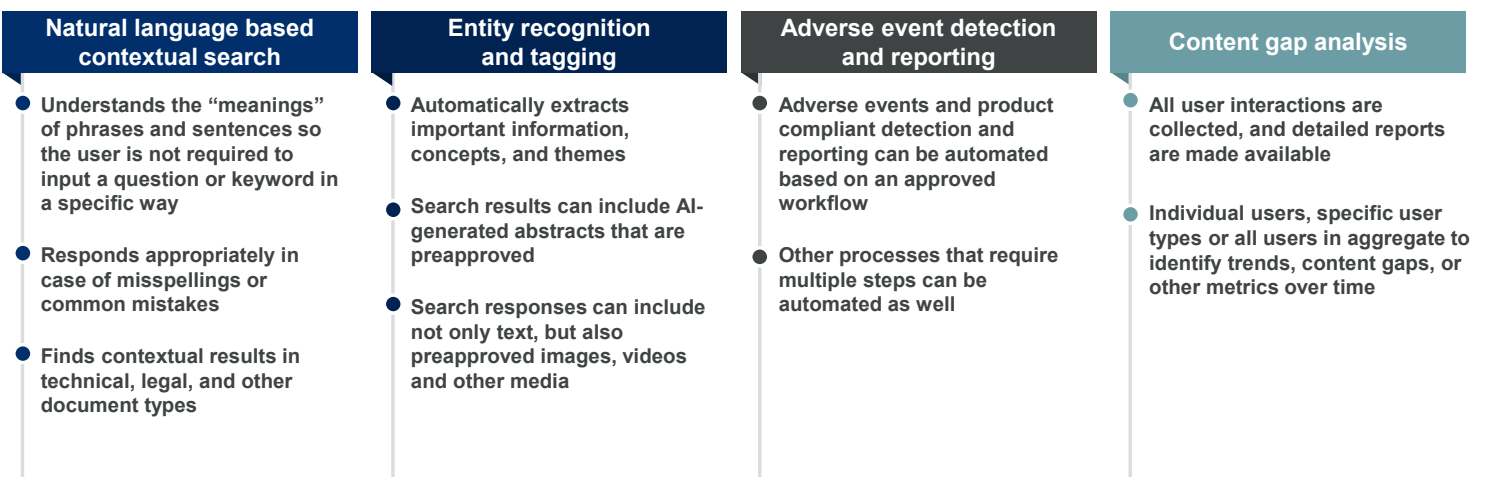
The platform is built to be modular so each feature can be included or removed as required. Cognitive Core also makes it easy to integrate with any other web-connected system so the end users can go through a seamless and uniform experience without going to multiple systems or performing additional logins. All the user interactions are securely recorded for automated analysis that can be used for improving the user experience and tweaking the content the users are served within the chatbot.

Figure 11: **EVERSANA's proprietary AI platform Cognitive Core**



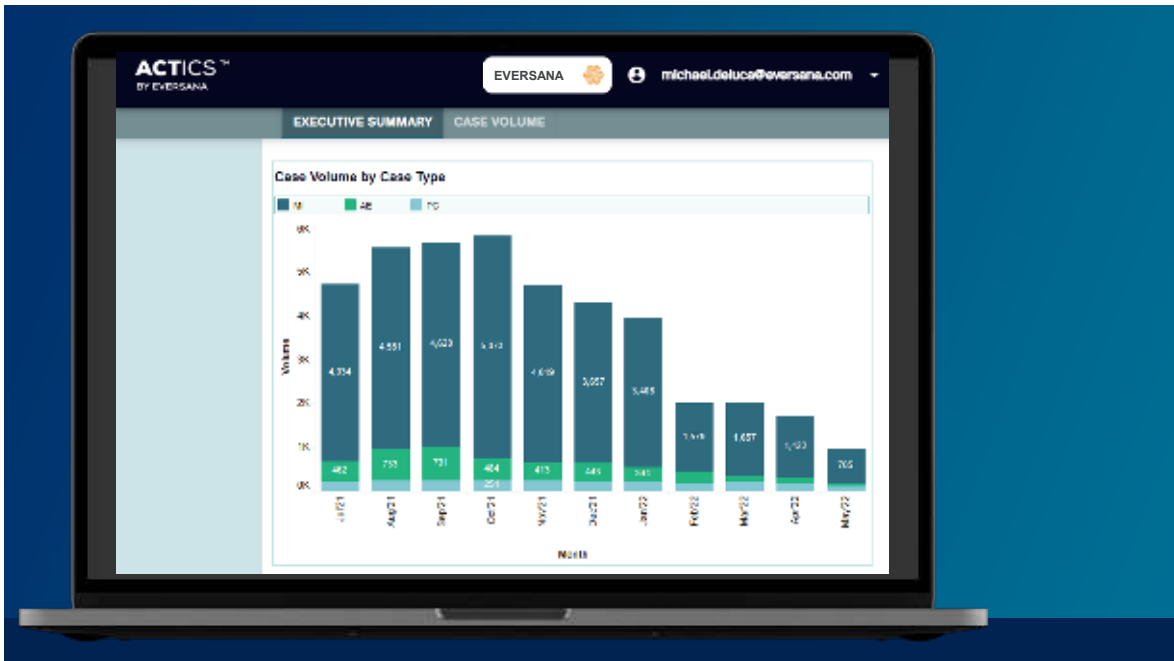
Cognitive Core is also built with smart search capability that will automatically index various searchable content and enable search features that will handle contextual searches and take care of misspellings, phrases, and even AEs and PCs. See Figure 12.

Figure 12: **Cognitive Core Smart Search Capabilities**



Additionally, EVERSANA’s MI team has collaborated with EVERSANA’s Data & Analytics team to build a comprehensive tool for generating metrics and customer insights. We have extracted data from our MI database and telephony system and leveraged EVERSANA’s ACTICS™ platform to build and deliver this new solution for medical insights. See Figure 13. ACTICS is the premier tech-enabled solution built to deliver end-to-end commercial success for life science companies. Leveraging proprietary AI and machine learning technologies, ACTICS was developed to address critical challenges across the product life cycle and improve patient outcomes.

Figure 13: EVERSANA’s MedInsight Data Analytics Tool Powered by ACTICS™



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EVERSANA™ is the leading provider of global services to the life sciences industry. The company's integrated solutions are rooted in the patient experience and span all stages of the product life cycle to deliver long-term, sustainable value for patients, prescribers, channel partners and payers. The company serves more than 650 organizations, including innovative start-ups and established pharmaceutical companies, to advance life sciences solutions for a healthier world. To learn more about EVERSANA, visit EVERSANA.COM or connect through [LinkedIn](#) and [Twitter](#).

