



## **Five Areas Where AI Can Make a Meaningful Difference**

Using artificial intelligence (AI) to improve healthcare delivery is an idea that's getting a lot of attention, and it is easy for organizations to get swept up in the concept. And yet, AI projects can be complex and require significant resources and planning. Before weaving AI into a performance improvement toolkit, organizations should acknowledge the technology's pros and cons and focus on key areas where it is most likely to enable quantifiable improvement.

### **What AI brings to the table**

AI mimics some basic human abilities and can overcome certain challenges humans face. For example, it doesn't ever get tired. It can review billions of records and detect unexpected patterns that are difficult for humans to perceive—and it can perform these analyses at scale. “While people tend to think of things in pairs, comparing one item to another, AI can identify much more complex patterns than what's manageable from a human perspective,” says Korin Reid, PhD, vice president of data science and innovation at Craneware. “An AI solution can be instructed to predict particular outcomes, and it also can find the proverbial needle in the haystack, answering questions the organization didn't even know to ask.”

AI has been used effectively across other industries for years, including e-commerce and finance, and companies have seen benefits in terms of improved efficiencies, better resource allocation and more responsive customer service. However, there is [discussion](#) that some applications may have run their course. “Although concerns about AI's future may be valid for the technology's trailblazers, since healthcare is just starting to adopt these kinds of solutions, we have barely tapped into their potential,” says Reid. “It will be awhile before we outgrow them. That said, the success of an AI initiative depends on the quality of data the technology is analyzing. If an organization doesn't have good, clean bias-free data with which to work, then applying AI may result in flawed insights.”

### **The importance of strong data management**

While access to high quality data assets is critical to the success of any AI-based application, data management also plays a key role in project success. In fact, data scientists typically spend an astonishing 80% to 90% of their time cleaning, preparing, and managing data with only 10% to 20% spent on building machine learning models and other tasks. This challenge has given rise to new advanced software engineering roles, such as data engineers and machine learning engineers, who focus primarily on processing and ingesting data sets in support of machine learning efforts. This role is particularly important in the healthcare space as the most impactful AI-based solutions require the compilation of very large, disparate, complex data to extract insights. To that end, effective AI-based solutions in healthcare will certainly leverage financial, clinical, operational, and industry data to provide timely, actionable insights and decision support for all stages of the value-cycle to drive innovation and improve the quality and efficiency of healthcare delivery.

### **Key areas where emerging technologies can help**

Not every process can benefit from AI. However, there are several key functions where the technology provides strategic advantages. Here are five promising areas where AI can make a difference.

***Optimizing the chargemaster.*** The chargemaster is a hospital or health system's source of truth for billing, providing a detailed list of all the services the organization provides. Due to the chargemaster's

size and scope, along with the shifting nature of healthcare delivery, it can be hard to ensure the tool is consistently up-to-date and fully reflects current procedures. “Using AI, an organization can generate a more complete chargemaster,” says Reid. “For example, the technology can compare different hospitals’ chargemasters, finding patterns based on facility type, services offered, patient population and more. It can then indicate whether there is a procedure an organization is likely to perform that is not represented in the chargemaster. In addition, natural language processing can be used to verify that a clinical system is consistent with data in the current chargemaster. The technology reviews and analyzes chargemaster and clinical system descriptions to make sure they mean the same thing and are appropriately linked.”

**Preventing denials.** AI solutions can uncover patterns that proactively indicate the chances of a denial, such as inaccuracies or missing elements. “Let’s say a claim includes three specific services for a particular type of patient,” says Reid. “AI can identify whether there are any missing or inaccurate charges that could be addressed to prevent a denial. It can also help identify new revenue, pinpointing potential opportunities the organization may have missed.”

The technology also can ensure an organization keeps up with ever-shifting payer requirements. “As long as an AI solution is fed new data that informs what is being denied, then an organization can keep its claims submission process cleaner, rapidly responding to any changes in the data.”

**Reducing readmission risk.** By avoiding unnecessary readmissions, hospitals can dodge expensive penalties and high care costs. A low readmission rate also demonstrates quality, which can attract and retain patients as well as position a hospital for value-based payment arrangements. “When AI is applied to historical readmission data, it can predict the likelihood that a patient will be readmitted within 30 days and what might cause that readmission,” says Reid. “The organization can then proactively engage risk management to implement mitigation strategies.” These could include using case management or nursing staff to ensure the patient has sufficient resources to adhere to the care plan post discharge, is able to attend follow-up appointments and fill prescriptions, has access to the right social services and so on.

**Streamlining patient access.** “There are several aspects of this function where AI can be helpful,” says Reid. “For example, when estimating patient out-of-pocket costs for procedures, an organization can use AI to predict what the reimbursement might be from the payer to more accurately determine the patient’s responsibility. Being upfront and transparent about potential costs can not only increase the probability of patient payment but lead to a more positive patient experience overall.”

Emerging technologies also can smooth the pre-authorization process, which historically has been challenging for healthcare organizations due to its manual, labor-intensive nature. “With AI, organizations can better understand payer behaviors around prior-authorization approval and timing,” says Reid. “The technology can search for patterns based on payer approval history to assess the likelihood a specific request would be approved and when that approval might arrive. Armed with this knowledge, the organization can efficiently use its resources to focus on those requests that require more detail. In addition, if it looks like approval is unlikely, the organization can start pursuing different avenues earlier to ensure the patient receives appropriate care.”

**Detecting anomalies.** While most of the abovementioned areas involve predicting specific outcomes, AI can help organizations uncover unanticipated yet meaningful patterns as well. “This is valuable when the organization wants to identify potential issues but does not exactly know what it’s looking for,” says

Reid. “For example, organizations can use the technology to compare data across months to see if there are any anomalies and what might be causing them. Similarly, a hospital could use it to compare itself to its peers, identifying differences that warrant addressing.”

**An opportunity worth seizing**

While AI may not be appropriate for every project, there are some areas where the technology can bring substantial benefits. By being intentional about how and where AI is implemented, an organization can not only improve financial operations, it can enhance the patient experience and free resources to facilitate better, more responsive patient care.



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