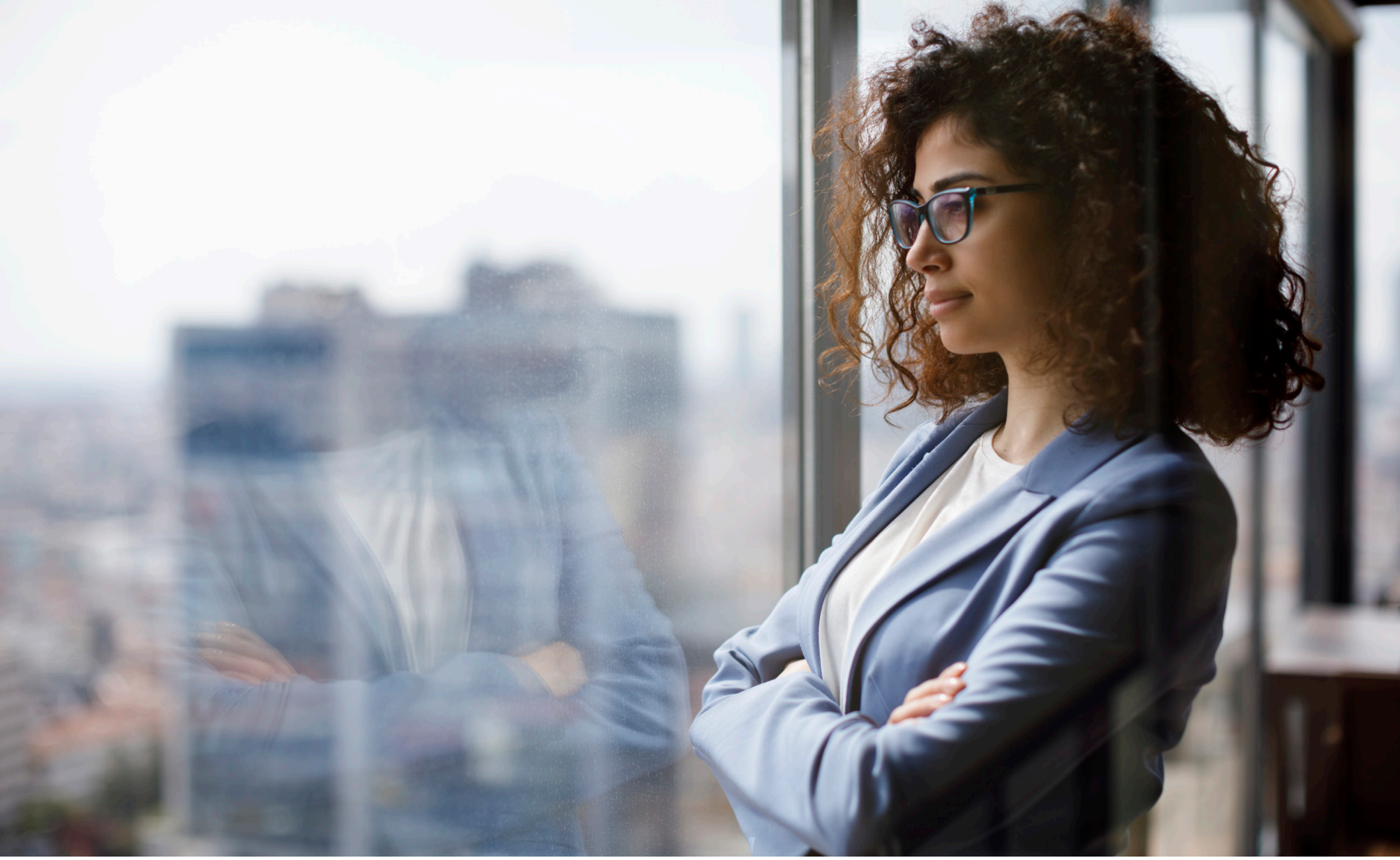


Clinical Intelligence — a smart revenue cycle investment in trying times

Cutting costs is imperative to maintaining financial solvency in the current environment. When budgets are strained, investing in new solutions can seem risky — or impossible. Weighing the cost of new initiatives against the value they deliver is critical, and it's important to keep long-term goals in mind. Investment in artificial intelligence and other related smart technologies is an innovative way to remedy the financial and resource challenges facing providers.

Optum

Clinical intelligence is the secret ingredient that powers modern, targeted revenue cycle solutions that deliver results

Artificial intelligence (AI), natural language processing (NLP), machine learning, robotic process automation (RPA) — whatever form it takes, technology breakthroughs are revolutionizing the way people work. Health care is one industry that has inspired countless devices, applications and secure avenues for data capture, interpretation and exchange. However, quantity doesn't necessarily equate to quality. The complexities of health care business operations require precise, accurate performance backed by deep knowledge, intelligent automation and continuous learning. Successful organizations leverage solutions that offer visibility into essential information across an interconnected system. They've made investments that are paying off.

Striking the right balance of technology requires a solid understanding of operational performance gaps and clear goals for improvement. It's important to examine the functional interrelationships across the revenue cycle to determine each department's impact on your overall results. Addressing costly, inefficient or repetitive tasks can have a ripple effect that creates exponential improvements in downstream work. Embedding AI into your revenue cycle can add that exponential value when it delivers the right performance where it's needed.

270% growth

in the number of enterprises implementing AI in the past four years and tripled in the past year, according to a Gartner, Inc. 2019 CIO Survey.[1]

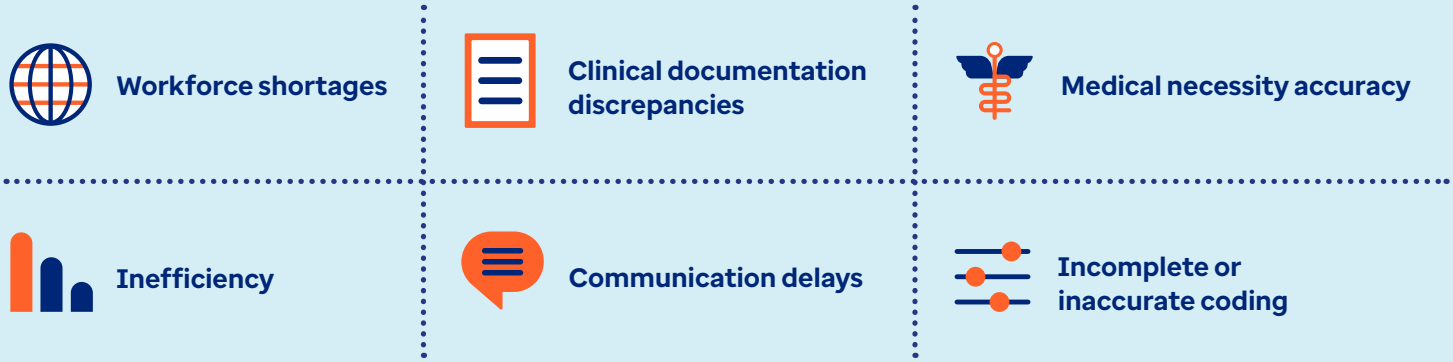
Investment that drives savings

As a cost-cutting strategy, it may seem counterintuitive to seek out technology to execute functions performed by your core system or in-house solutions. But in a number of areas, that strategy will pay off. Adding the right solutions can boost performance beyond "good enough" and deliver returns that exceed their price tags.

There are specific revenue cycle management functions for which smart investments will very likely deliver returns well in excess of their cost. Clinical intelligence is the secret ingredient that powers these modern, targeted revenue cycle solutions. Clinical intelligence comprises capabilities that emulate, automate or provide decision support for revenue cycle processes that rely on clinical knowledge and reasoning. Technology driven by clinical intelligence may actually perform some of the same functions offered by your core system but with greater value. These solutions use intricate rules, automation and models based on vast collections of data and clinical knowledge to perform tasks that increase accuracy, efficiency and appropriate reimbursement.

Clinical intelligence comprises capabilities that **emulate, automate or provide decision support** for revenue cycle processes that rely on clinical knowledge and reasoning.

Clinical intelligence can take different operational forms, depending on the nature and complexity of the challenges being addressed. Every version available on the market is unique, and performance can vary significantly. Provider organizations can leverage clinical intelligence to alleviate a wide range of common problems that impact revenue and costs across the revenue cycle, including:

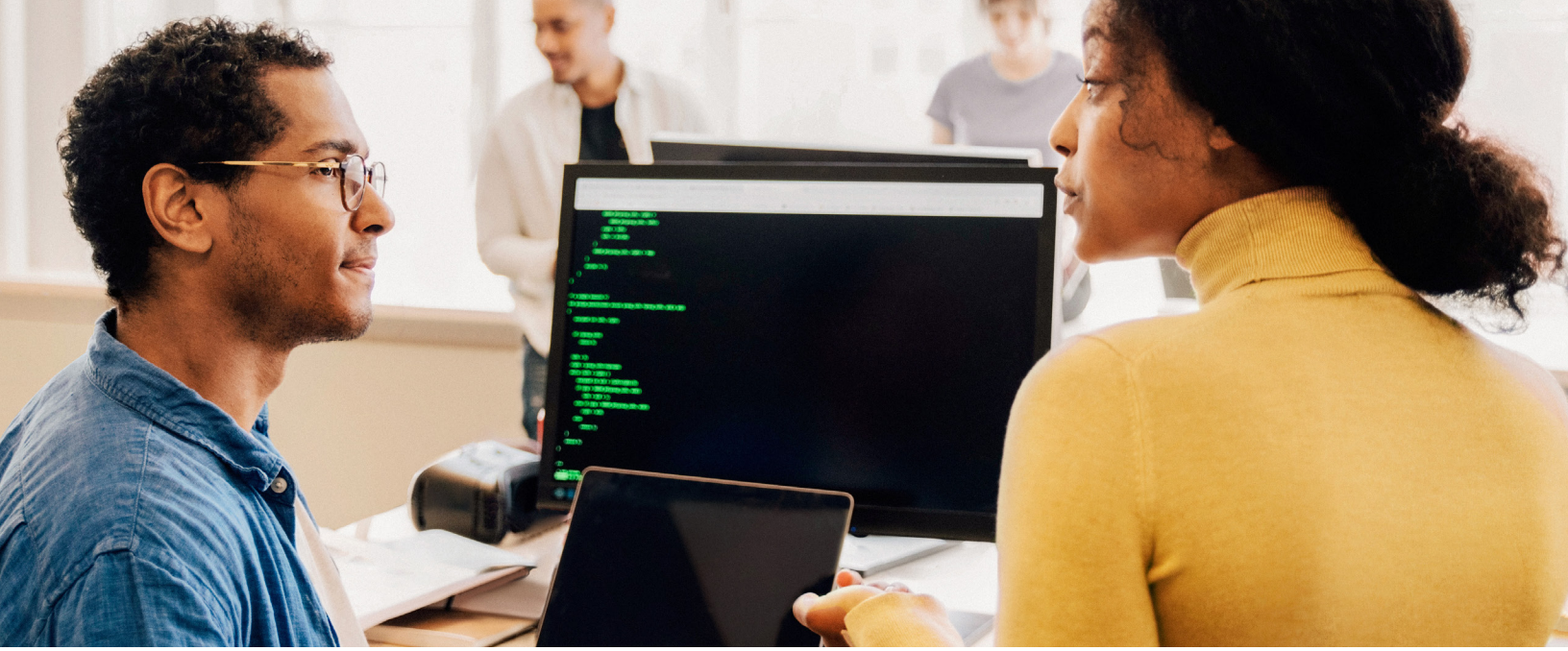


The depth, longevity and volume of clinical source data — the data that AI utilizes to learn from and perform — is what differentiates one repository of knowledge from another. The sophistication and precision of the technology that incorporates that clinical data further separates the various solutions in use today.

The AI and content connection

Health care data complexity presents unique challenges to clinical intelligence efficacy. It's one thing for AI to apply pre-defined rules based on particular terminology and trigger appropriate actions. It's another to interpret the context and nuances of clinical data to mimic a human thought process and suggest appropriate decisions. The automation and algorithms employed should be suited to the complexity of the process to which they are applied.

Another challenge to effectively applying clinical intelligence is the depth and diversity of essential clinical content available to feed an AI-driven business process. Reducing the administrative burdens associated with revenue cycle operations requires a broad repository of medical, regulatory, policy and business content on which to base recommended actions. However, the true value lies in the convergence of AI and content, and their combined ability to apply clinical rules. The combination must be sufficient to enable accurate, reliable automation and decision-making.



Technology that drives performance

Advanced technologies can use clinical intelligence to significantly impact revenue cycle operations. Consider the advantages of leveraging consistent data sources across functional areas to achieve consistency, compliance and accuracy. Smart workflow automation and linguistic understanding can proactively identify and remediate issues as they arise – preventing costly downstream consequences.

Natural language processing (NLP) has become a familiar term in the industry, but many may think it's just a buzzword or that it describes a standard word-matching process. It's important to understand that there are many different "methodologies" that use NLP, but they are not the same. NLP engines perform calculations based on at least five different methodologies, ranging from simplistic to advanced. Some, such as Optum NLP capabilities, are patented* and protect the proprietary rights to exclusively offer that technology.

Overall performance of NLP-driven technologies varies greatly based on the extent of the engine's clinical intelligence and the longevity of its data repository. Most NLP engines can organize unstructured data, but they stop there. Clinical NLP integrates linguistic analysis and a vast knowledge of medical facts to find depth and meaning in content. It leverages clinical intelligence and expertise to derive context from medical documentation – including gaps and discrepancies. It uncovers actionable insights, recognizes relationships between conditions and treatments, and demonstrates understanding of clinical scenarios to streamline revenue cycle operations.[2]

$4.8M increase
in total reimbursement for a Southern not-for-profit system and increased productivity

$1.3M increase
in revenue for a prominent Northeast health system and increased productivity

26%
in the first year using NLP solutions[3]

$8M
reduction in unbilled A/R by using NLP-powered technology[3]

*Optum NLP has 12 patents, with additional patents pending.

Technology that drives performance

Most commonly applied to support computer-assisted coding, NLP is making waves in clinical documentation improvement also. New use cases are showing promising results in areas such as prior authorization. This type of artificial and clinical intelligence can help to achieve more accurate documentation and coding to reduce claim denials, increase compliance and efficiency, and improve revenue recovery.

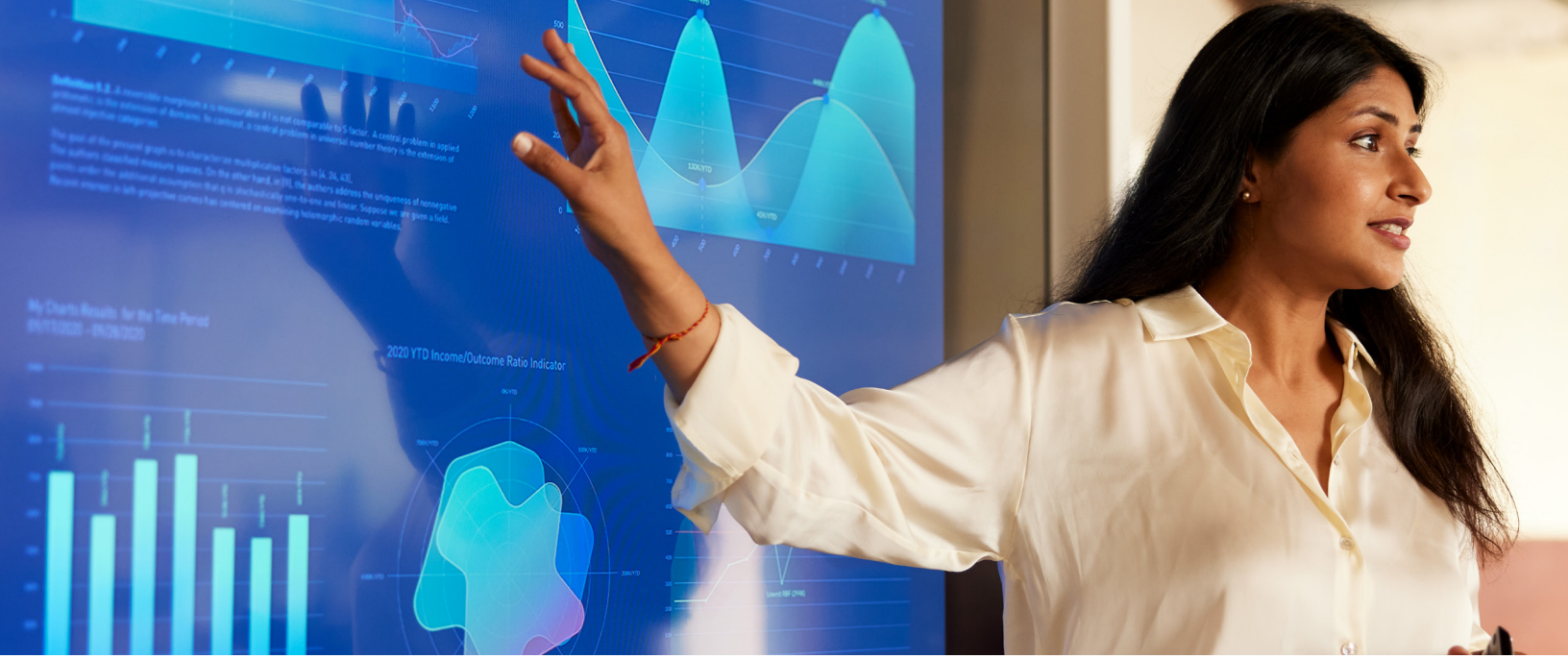
Rules-driven workflow that is part of an NLP-based solution applies the same clinical intelligence to most effectively route cases for review, approval or final coding based on the information they contain. It can also prioritize cases for CDI review and physician queries to ensure the most appropriate opportunities for improvement are addressed. Assigning cases to the right person with the right expertise at the right time improves efficiency and productivity while supporting more accurate, consistent results. This intelligent automation contributes to better revenue capture and reduces delays in payment.

Machine learning and its derivative deep learning power solutions that can learn from data by discovering patterns that can later be used to analyze new data. Deep learning is considered an evolution of machine learning. It uses a programmable neural network that enables machines to make accurate decisions without help from humans.[4]

$8.3M

annualized benefit achieved for a 400-bed hospital using machine learning technology to support its utilization review process.[3]

Machine learning uses algorithms to parse data, learn from that data, and make informed decisions based on what it has learned. **Deep learning** structures algorithms in layers to create an **"artificial neural network"** that can learn and make intelligent decisions on its own.[5]



Using machine learning, technology can be trained to provide consistent, automated guidance in areas such as medical necessity determination. To be successful requires a robust body of reference data (clinical intelligence) on which to expand. For example, machine learning coupled with NLP capabilities can provide inpatient admission probability scoring and clinical risk factors to help physician advisors more quickly determine their patient status recommendation on complex cases. The intelligent automation supports a more efficient and accurate medical necessity case review.

Arming physicians with this type of assistance can strengthen the defense of inpatient admissions and protect an organization's reimbursement.

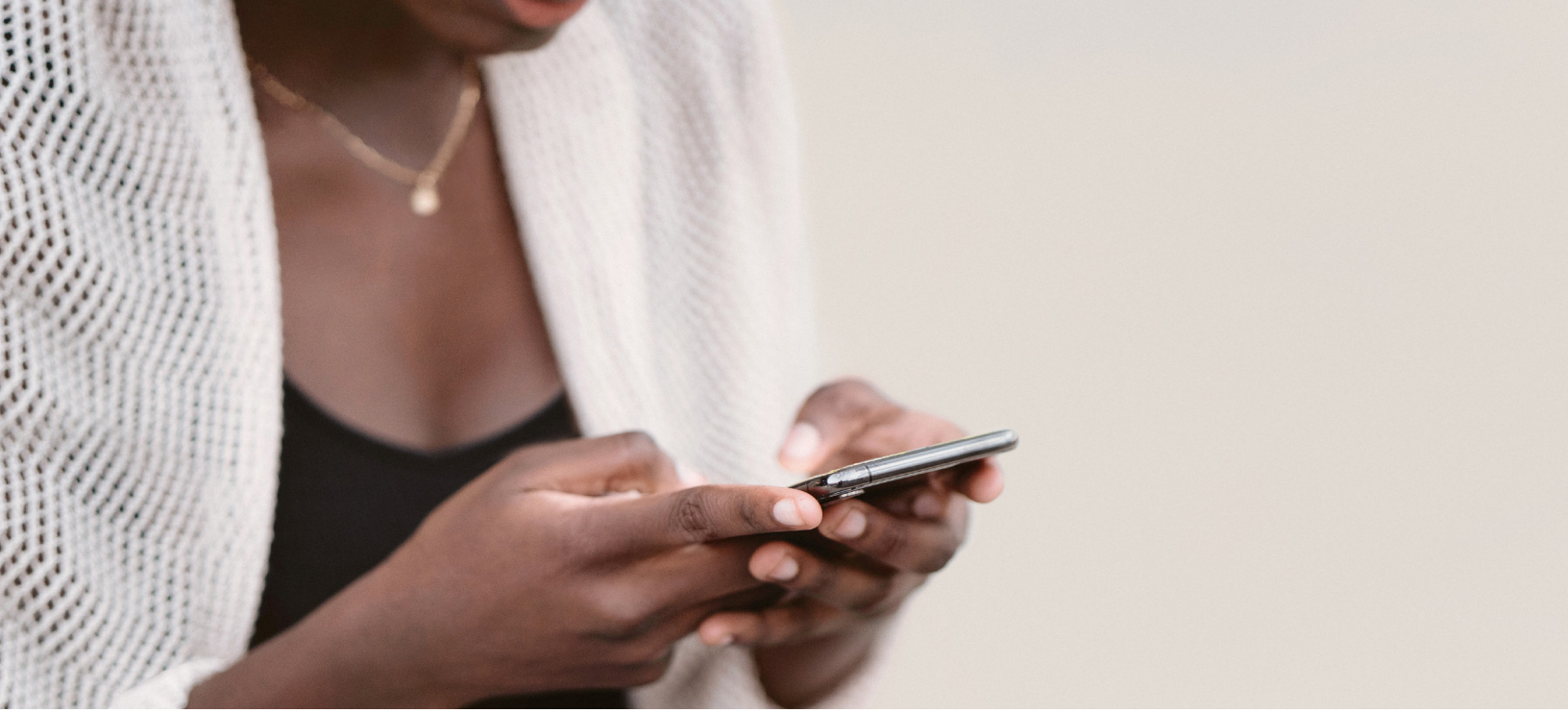
A health system with seven hospitals used machine learning technology to expand medical necessity reviews and achieved a 126% improvement in revenue capture.[3]

Automated data application and verification technology is ideal for functions that involve specific, prescribed data relationships and rules, such as payer-specific claim edits. For example, a solution with advanced clinical editing capabilities can identify claims certain to deny, as well as unbilled items, prior to claim submission. This saves the cost of reworking denied or rejected claims and will actually uncover additional revenue opportunities that could otherwise be missed.

Secure data transmission between payers and providers is a fundamental part of the revenue cycle. If intelligent functionality is embedded in the data stream, it provides additional benefits, including higher clean claim rates, more rapid cash flow and increased efficiency.

20% reduction

in clinincal denial rate for a Midwest health system using automated claim review and editing technology.[3]



Specialized algorithms that use a repository of precise clinical information can also drive a solution that identifies consistent, defensible evaluation and management (E/M) levels to classify outpatient physician services. Incorrect E/M level assignments can be a costly error that ultimately results in lost revenue. Maintaining adherence to the general guidelines without an intelligent solution is difficult, if not risky. Level assignments are based on ever-changing CMS Outpatient Prospective Payment System (OPPS) guidelines, and CPT® codes and descriptors from the American Medical Association. A clinically aware solution with well-seasoned algorithms can help your organization maintain consistent level assignment based on current guidelines. More accurately and consistently identifying appropriate revenue helps to protect the related reimbursement.

An algorithm-driven solution helped a medical center align its emergency department visit levels and increase net income by

$1.4M in one year.[3]

These solutions can accurately and automatically perform repetitive tasks using a broad knowledge base of clinical data while freeing up staff to focus on other critical areas. A number of these solutions will add valuable functionality and significant value to your core system, delivering benefits that outweigh the costs.

Backed by an extensive knowledge base of clinical intelligence, smart technology can expand your core system's ability to improve revenue cycle performance, efficiency and savings by:

- Verifying insurance status
- Confirming medical authorizations
- Delivering higher claim acceptance rates
- Applying claim edits
- Correcting potential errors prior to claim submission
- Applying specialized algorithms to identify emergency department visit levels

Robotic process automation

What about those processes that don't require AI? Although AI provides great benefit in many areas, it's not necessary in others. Smart investment requires applying the right solutions in the right areas.

Robotic process automation (RPA) executes repetitive, rules-based tasks in an efficient and standardized manner to increase business process productivity. Applied strategically, it allows staff to focus on higher impact activity where their interaction is more valuable. To support revenue cycle operations, RPA emulates human activity to perform high-volume, low-complexity tasks. Following "if/when/then" rules, RPA can automate payment posting, consolidate duplicate or same-day claims, process credit balances or secondary claims, and perform myriad other processes to remove extra cost.

RPA is able to work within the constraints of even the most antiquated legacy systems with minimal burden on the systems themselves. The robots, or "bots," manipulate data and applications just as a human would, perform the same way every time, operate around the clock and don't make errors. For smaller organizations or those that have limited capital, a relatively inexpensive RPA solution can provide significant benefit by supporting more efficient operations. Large organizations also benefit from RPA automation that delivers consistent, repeatable and scalable results. Matching the optimal level of automation to a business process is key to achieving a return on your investment.

Robotic process automation (RPA) uses specialized computer programs ("robots") to standardize and automate repeatable, rules-driven business processes. RPA robots perform the same way every time.

How is RPA different from AI?

- **RPA solutions** work in conjunction with humans to automate repetitive, structured processes
- **RPA** uses structured inputs and logic
- **RPA** emulates human activity performed on a computer
- **AI-driven solutions** augment human labor with sophisticated models trained from expansive data sets
- **AI** uses unstructured inputs and develops its own logic
- **AI** emulates aspects of human reasoning or decision-making

Strategy that drives success

There is no single solution that can support every step of the revenue cycle from patient registration through full reimbursement. There are core systems that perform many vital functions across organizations of all sizes and configurations, but they perform better in some areas than others. It can benefit providers to consider specialized or integrated solutions built on proven, patented algorithms and vast repositories of accumulated knowledge and clinical intelligence, maintained by continuous fine-tuning.

Choose wisely to bring your organization the smartest solutions that will pay off. Investments that leverage specific expertise and rich clinical intelligence in the right areas will improve both financial and operational performance.

1. Gartner survey shows 37 percent of organizations have implemented AI in some form. gartner.com/en/newsroom/pressreleases/2019-01-21-gartner-survey-shows-37-percent-of-organizations-have January 21, 2019. Accessed July 30, 2020.

2. What is the role of natural language processing in healthcare? healthitanalytics.com/features/what-is-the-role-of-naturallanguage-processing-in-healthcare. *Health IT Analytics*. August 18, 2016. Accessed August 3, 2020.

3. Optum. Documented client results.

4. Machine learning and deep learning. zendesk.com/blog/machine-learning-and-deep-learning/ (last modified May 15, 2020). Accessed July 13, 2020.

5. Ibid.

6. E/M leveling: Compliance, correct coding and best practices. mrahis.com/e-m-leveling-compliance-correct-coding-and-bestpractices/September 10, 2018. Accessed July 13, 2020.

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