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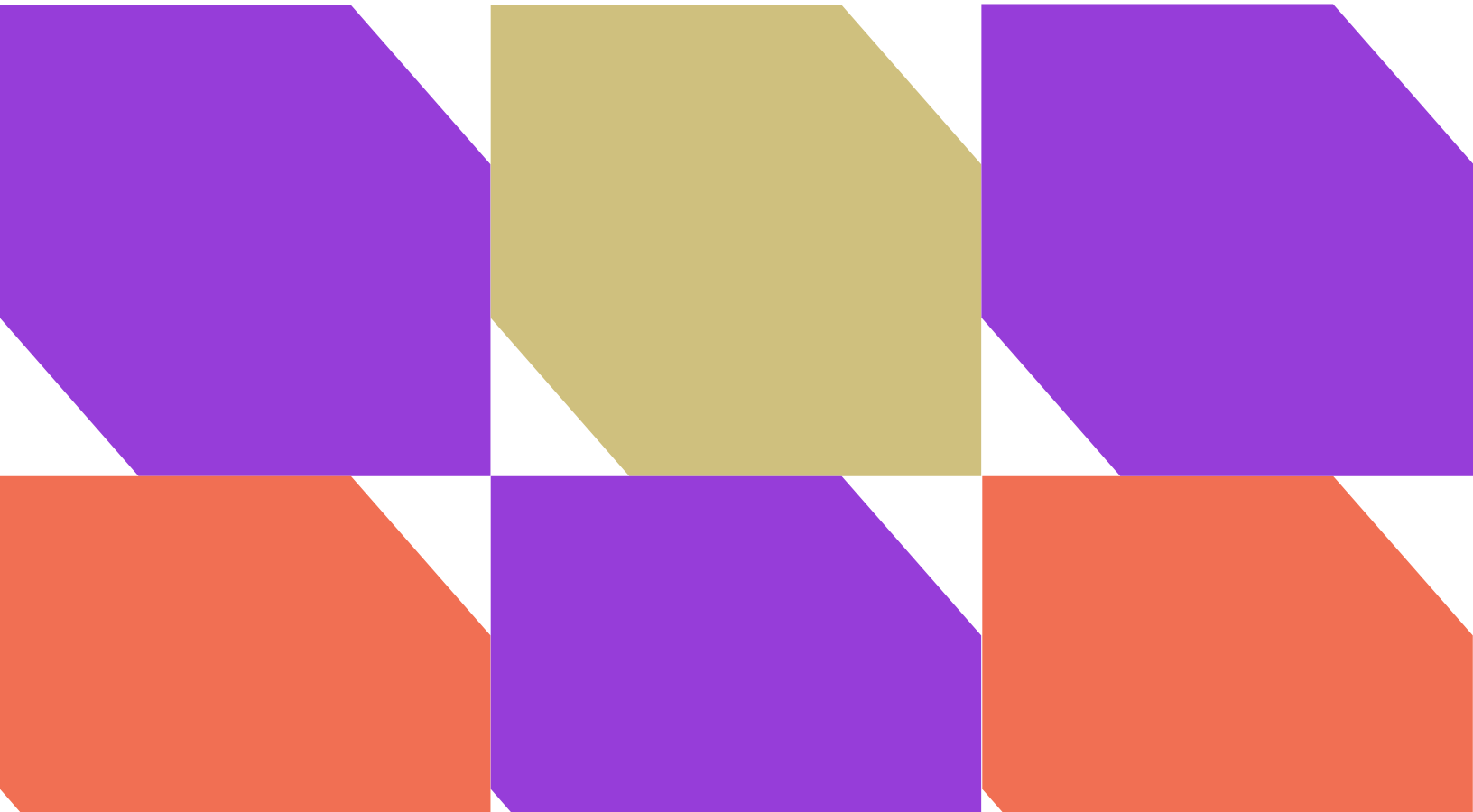
WHITE PAPER

Future Proofing Medical Coding

Autonomous and Single Path Solutions for a Growing Industry Challenge

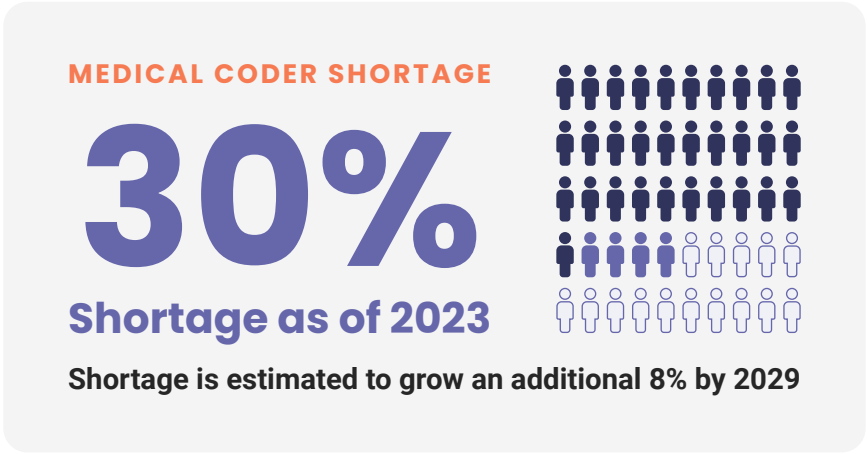


Executive Summary

The healthcare industry is facing a critical shortage of medical coders, exacerbated by an aging workforce and an increasing demand for healthcare services. Traditional computer-assisted coding (CAC) and other rules-based technologies have reached their productivity limits, prompting the need for more advanced solutions. Autonomous coding, utilizing sophisticated AI technologies, has emerged as a promising tool to fully automate routine coding tasks, allowing human coders to focus on more complex cases and quality assurance. This shift not only enhances productivity and accuracy but also reduces claim processing times and denial rates. Additionally, the integration of single path coding (SPC) can streamline workflows by consolidating professional and facility coding processes, further improving efficiency and data quality. The combined implementation of autonomous coding and SPC, offers a comprehensive approach to mitigating the coder shortage, optimizing revenue cycle management, and enabling healthcare organizations to adapt to current and future demands.

Introduction

It is no secret that medical coding is a pain point in the healthcare revenue cycle based on the complexity and intricacies caused by the sheer number of codes and differing requirements for those codes from payer to payer. Not to mention, varying healthcare models, ranging from value-based care to fee-for-service, further complicate the landscape. Whether a large health system encompassing academic medical center(s) or a single provider office, the shortage of coders is having a negative impact on the healthcare industry's ability to process claims and recognize revenue as quickly as possible. This strain affects everything from the ability to hire new staff to making crucial capital investments for growth and improvement. As the coding workforce ages and many plan to retire soon, this shortage will only worsen, and unfortunately, newly credentialed coders are not keeping pace with the number of people leaving the field. Coupled with the increased demand of an aging population impacted by chronic conditions requiring more frequent appointments with their care team, monitoring and intervention, the problem is only going to continue to compound. In fact, the American Medical Association cites a 30% shortage in medical coders as of 2023 and this is estimated to grow an additional 8% by 2029.[1,2] As an added difficulty, the pressure put on coding professionals in an understaffed industry results in decreased reimbursement from undercoding, revenue leakage, and slower claims processing.[3]



As such a critical component of the healthcare system's financial health, it becomes necessary to evolve and find the right solution, whether that be in the form of additional people, upgraded processes, or use of technology. This was evident in the adoption of computer assisted coding (CAC) in the early 2010s as the industry shifted from ICD-9-CM to ICD-10-CM and coding productivity was estimated to drop dramatically.[4,5] At that time many hospitals adopted a CAC vendor and have relied on it since. The vendors used may have changed over the years, but the use of the technology has not. A decade later and CAC has addressed the ICD-10 productivity delta quite nicely but due to its base technological constraints a coder must still touch every case due to the complexity of code assignment and the ambiguity of payer rules. This means since productivity is already based at the maximum capacity per coder using that technology, it cannot further scale to address the growing workforce shortage, it is at its maximum usefulness to date — more is needed to solve the conundrum healthcare organizations are facing.

Evolving the Technology: Autonomous Coding

As more advanced artificial intelligence (AI) has matured in the form of machine learning, deep learning, natural language processing, and most recently generative AI, so have the technological solutions aimed at solving the coding issues at hand. In recent years, the buzzword in revenue cycle communities has been “automation” and like in all industries, eyes turned to the pain point that is the most noticeable on accounts receivable - medical coding. Autonomous coding has become the new CAC and many organizations and providers are looking to it to provide the same shift in the medical coding paradigm that happened years ago.[6]

Autonomous coding promises to fully automate (meaning zero touch) the repetitive coding tasks that are low level by using advanced AI techniques, while leaving the more difficult and nuanced coding to the credentialed coder. This change comes with two major impacts to the coding staff. The first, they only touch the most critical cases, those that need the “human in the loop,” having them work at the top of their coding credential. This reduction in the amount of cases requiring review allows coders to focus even more on accuracy for those complex cases and when they do review a case that was automated, it is for quality assurance purposes and due diligence.[6] The second impact is the reduction in manual coding, which opens up the possibility to allow credentialed coders to function and assist in other areas that need their expertise such as Clinical Documentation Integrity (CDI) and value based data collection.

The impact to the revenue cycle becomes even more apparent over time. For example, University of Colorado Medicine (CU Medicine) implemented autonomous coding in their radiology department and immediately realized an overall automation rate of 71% beyond what they were achieving with their rules-based CAC. This percentage has improved as the AI has become more familiar with the organization’s coding nuances and specific needs. With that also came a 60% reduction in their accounts receivable (A/R) days, dropping the lag time in getting paid by 3.6 days.[7] When Mass General Brigham (MGB), one of the largest health systems in the U.S., implemented this technology they reported not only an increased automation rate and lower A/R days but also a 59% reduction in coding related denials.[8]

Streamlining the Process: Single Path Coding

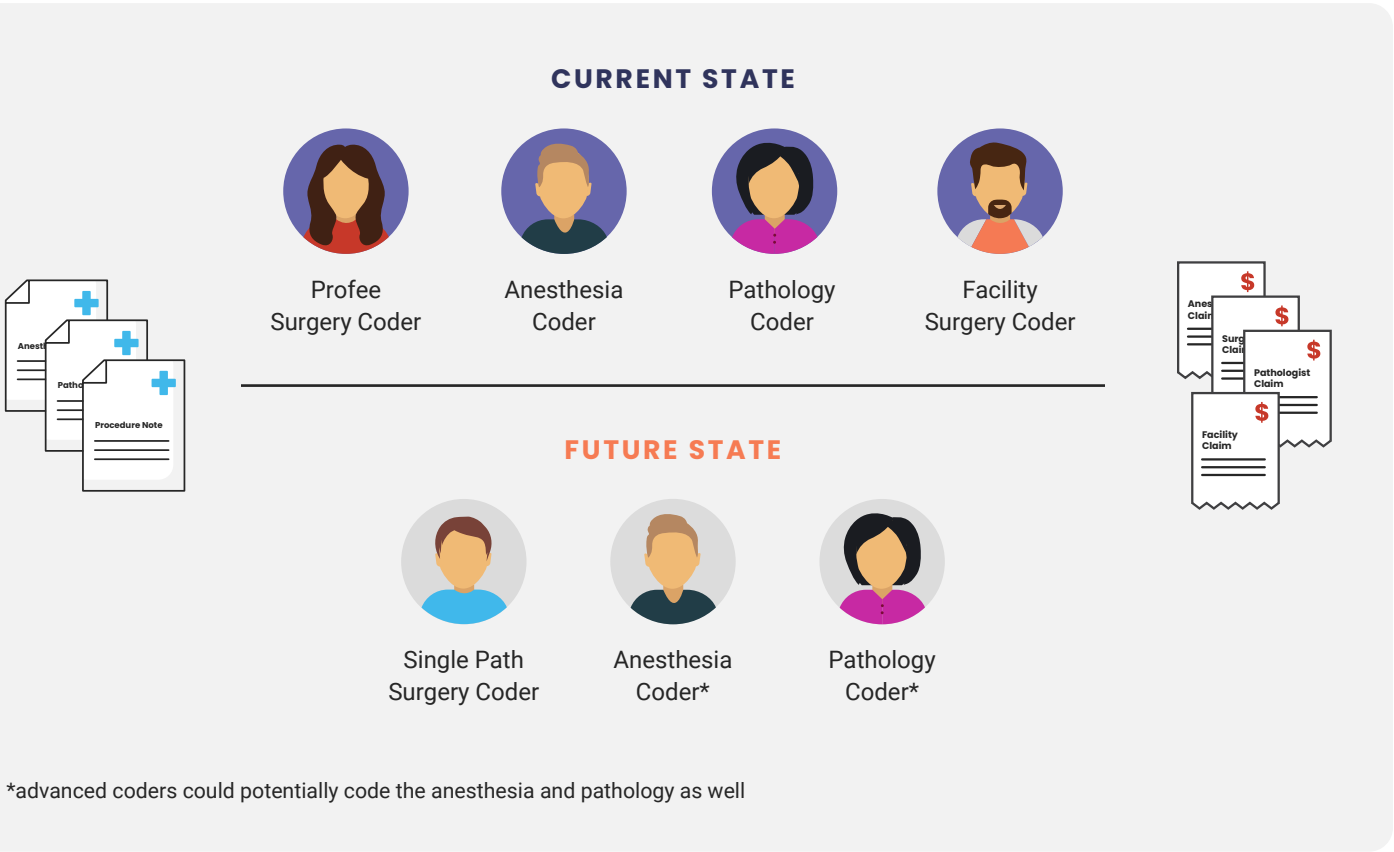
It is important to note that there are additional efficiencies that can be gained by introducing new processes in addition to new technology, as long as the technology is configured and integrated into the new process. As the industry explores process improvements, single path coding (SPC) has emerged as another lever to pull to achieve higher productivity from existing coding staff. In order to understand what SPC is, one must understand how U.S. medical claims

are generated. At the highest level, it is important to know that for every encounter with a provider in a hospital or ambulatory surgery setting generates *at least* two claims:

- A professional claim for every provider that interacted with the patient or the patient's information.
- A facility or institutional claim for the organizational entity such as the hospital radiology department, the operating room, or the endoscopy suite.

These claim types are usually handled by *at least* two coders, **a professional coder** that will code for each of the providers and **a facility coder** that will address the organizational component. Take for instance a routine colonoscopy that results in a biopsy, this could translate easily into three separate professional claims (one for each healthcare professional: the endoscopist, anesthesiologist, and pathologist) and one facility claim. These cases could be handled by up to four coders although the documentation used to code is the same. This is how SPC becomes an obvious target to streamline and create efficiencies when the provider and facility coding staff is part of the same organization.[9]

The adoption of SPC offers significant advantages. It reduces coder demand and boosts productivity while streamlining processes. By eliminating coding discrepancies between professional and institutional claims, it minimizes delays and denials, ensuring uniform data capture across entities.



*advanced coders could potentially code the anesthesia and pathology as well

There are significant challenges to SPC to note as well. First, professional and facility coding are similar and use the same documentation, but they are not the same. In order to adopt SPC, the coding staff needs to be well versed in the differences. Oftentimes, this requires an investment in cross training existing staff to understand the nuances or hiring coders/educators that already know the differences.[10] The second challenge most commonly encountered is the technology being used by the staff. To ensure the goal of maximized efficiency for the SPC coding staff, the solution must incorporate the information for both types of coding as well as be intelligent enough to route that information to the appropriate claim for processing. Ideally, this all occurs in one system, on one screen, with minimal clicking, toggling or system changes.[11]

According to *For the Record*, when the University of California San Diego (UCSD) Health implemented SPC, they recognized a 46% productivity increase in their radiology coding. The improvements showed such promise that they planned to also address procedural and surgical coding shortly thereafter. In addition, much like with autonomous coding, they found additional metrics beyond improved productivity, such as quality, clean claim rate, and reduced denial rates.[12]

Optimize the Rev Cycle: Combining Autonomous Coding with SPC

Most of the technology on the market today is focused on either the professional side or the facility side of the coding process and the emerging market of autonomous coding is no different. Ideally, in order to incorporate both transformational strategies, the software needs to achieve the following within seconds:

- Ingest one radiology report or operative/procedural note and produce the professional and facility codes for their respective claims at once
- Automate the diagnosis and procedure codes as well any applicable modifiers for both sets of claims with zero manual interventions
- Abstract the data that is required to populate the claim for the billing system to process
- Be advanced enough to pass both claims through the appropriate claims editors to ensure the payer rules are met

In the event the system determines the case is better suited for a human coder, that information is assigned to a single coder, in a single system, on a single page with all of the required information. This should include the code predictions to be validated and the justification for those codes highlighted. Allowing the coder to act as an auditor of the AI-generated codes, rather than having the credentialed coder start from scratch to manually coding the professional and/or facility coding.

Conclusion

With the growing medical coder shortage in the U.S., it is imperative that revenue cycle and healthcare leaders consider their options for mitigation now and in the future. While the concept of adopting the latest technology has the industry buzzing today, there are other levers to pull to increase its effectiveness as well. The combination of autonomous coding with SPC can have a very significant impact on the coding key performance indicators (KPIs) that highly influence revenue cycle and accounting targets across an organization. They can be leveraged together to enhance both the professional and facility coding productivity, quality, A/R days, and denial rates. This strategy is a feasible long-term solution that can be deployed near term as the technology to support the workflow process change is now available. This integrated approach not only addresses immediate coding challenges, but paves the way for a more optimized, efficient, and future-ready health system.

About the Author

Kelly Canter is a seasoned health information professional specializing in revenue cycle management, artificial technology, as well as product design, management and strategy. Her passion is to use those skills to make healthcare work better for everyone. She has over 20 years in the field including publishing multiple books and articles in addition to speaking nationally. Kelly is an active volunteer and member of AHIMA and is a Master's educated Registered Health Information Technologist (RHIT) who is also credentialed in medical coding and product management.

References

1. https://www.ama-assn.org/about/leadership/addressing-another-health-care-shortage-medical-coders
2. https://www.bls.gov/ooh/healthcare/medical-records-and-health-information-technicians.htm#tab-6
3. https://www.ahima.org/news-publications/press-room-press-releases/2023-press-releases/health-information-workforce-shortages-persist-as-ai-shows-promise-ahima-survey-reveals
4. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4142514/
5. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3329203/
6. https://revcycleintelligence.com/features/from-pilot-to-scale-mount-sinai-leverages-autonomous-medical-coding
7. https://www.codametrix.com/cu-medicine-case-study/
8. https://www.codametrix.com/mgbradiologycasestudy/
9. https://www.fortherecordmag.com/archives/0118p22.shtml
10. https://journal.ahima.org/page/the-move-to-single-path-coding#:~:text=Defining%20the%20Process,without%20sacrificing%20quality%20and%20productivity
11. https://streamlinehealth.net/single-path-coding/
12. https://www.fortherecordmag.com/archives/0118p22.shtml