Getting autonomous coding right

Overcoming revenue cycle challenges with automated coding workflows

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AI and revenue cycle staffing challenges

Coding staff shortages and budget constraints are a reality for revenue cycle departments. According to a November 2023 American Health Information Management Association (AHIMA) survey, 66% of health information professionals reported persistent staffing shortages over the last two years, including in revenue cycle management, risk and compliance, and data analytics and quality. This caused reduced reimbursement, increased claims denials and decreased patient data quality.

How are hospitals and health systems coping with these challenges? Many are beginning to turn to artificial intelligence (AI) and automation to help alleviate workforce shortage pain points, regulatory and compliance intricacies and the growing number of charts to code (34.3 million inpatient stays and more than 900 million outpatient visits a year).

But some healthcare organizations are hesitant to broadly adopt AI. Data privacy and security, a lack of transparency and a lack of understanding of what AI can and cannot do are among the chief concerns.

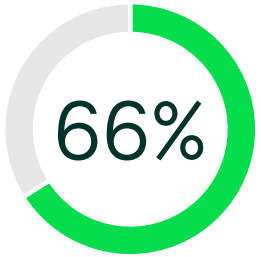
40%

Healthcare executives consider autonomous coding the top area to invest in the next 12 – 24 months

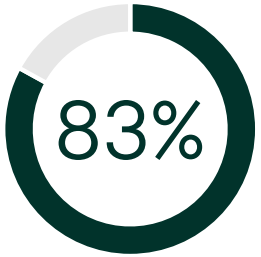
14%

Healthcare executives report organizational resistance to change as the top obstacle to automation

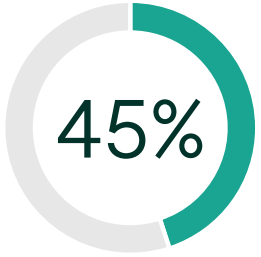
Industry insights on the health information workforce



Reported staffing shortages in the last two years



Reported an increase or persistence in unfilled health information positions in the past year



Adopted AI and machine learning

What exactly is (and isn't) autonomous coding?

How do we define autonomous medical coding? The answer varies among organizations and vendors. Some believe autonomous coding means automating any part of the coding process that minimizes or eliminates human intervention.

We believe a more accurate definition of autonomous medical coding is the ability to process electronic patient data (e.g. a chart or documentation from an encounter) often using AI and/or logic to generate a confident final code set that is ready for the next step in the billing process without human interaction. For autonomous coding to work, it needs to provide 95% accuracy — the current industry standard for human coders.

*Standard expectation for human coders

What autonomous coding isn't:

- A coder instructed to click "accept" on an auto-suggested code or code set
- A coder reviewing the auto-suggested code, addressing any edits and other coding guidance before finalizing a coding session. This is computer-assisted coding (CAC) and it has been around for more than a decade.

Automation beyond AI models

Generative AI and advanced, deep learning models are revolutionizing AI and its application. However, when it comes to medical coding automation, AI models alone can only get you so far. Consider these two popular myths about AI and the reality when applied to healthcare automation:

Myth:
AI doesn't make mistakes. It is smarter than people.

Reality:
AI is only as good as the quality of the training data and clinical expertise it uses.

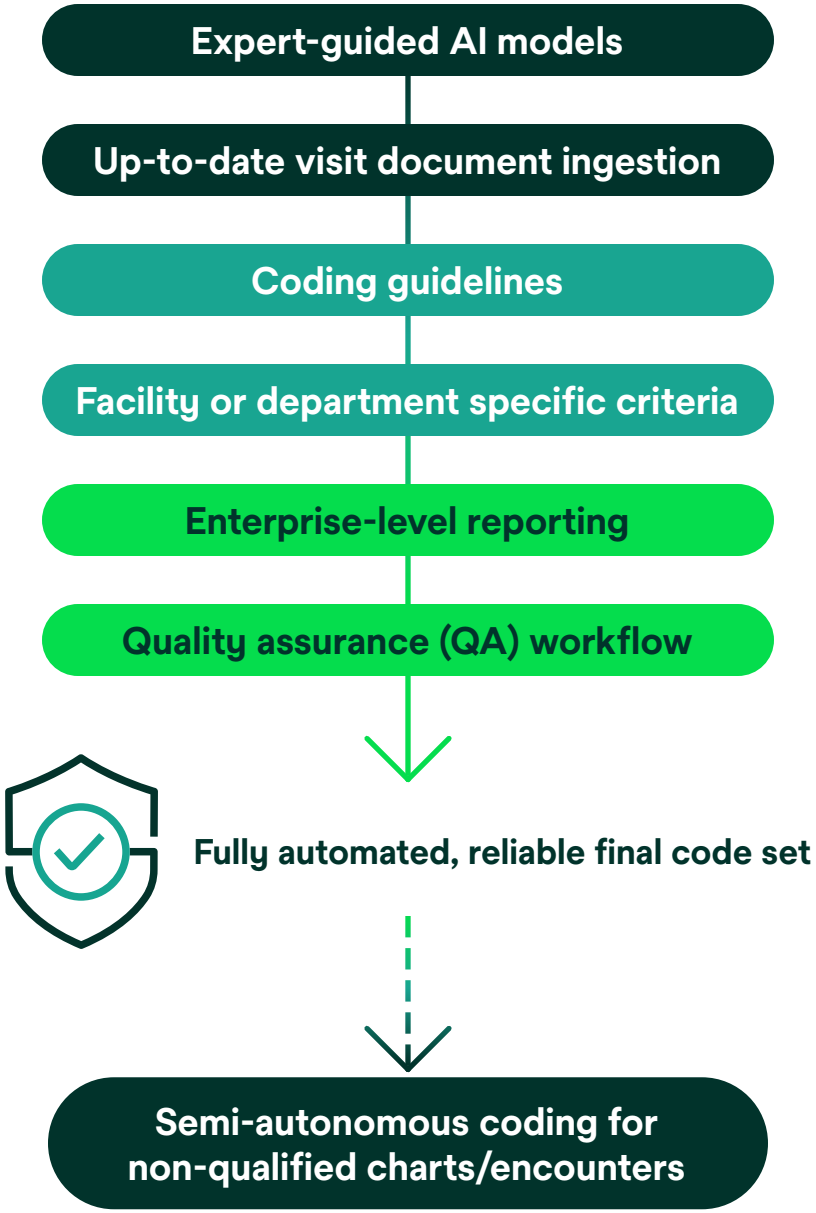
Myth:
AI is "install it and forget it."

Reality:
Adjustments and learning new patterns are required to keep pace with regulatory changes.

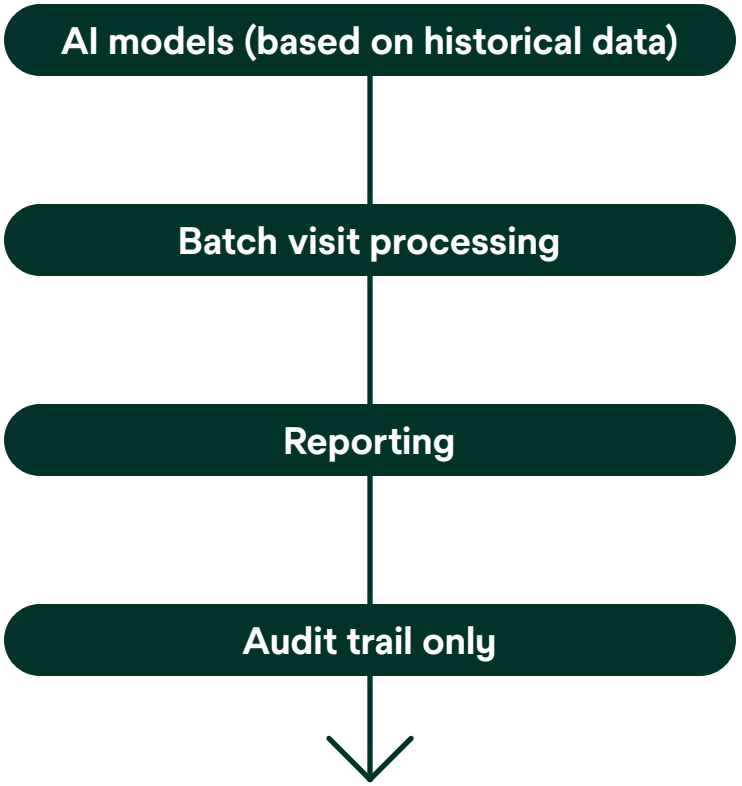
In addition to AI modeling, a complete, compliant coding automation program needs to be in place to process all cases received by the healthcare organization. This means:

- Autonomous coding (no-coder touch) can be used for those qualifying, confident and "repetitive" code sets
- A mechanism should be established to allow for quality control to ensure data integrity is maintained
- Having a semi-autonomous coding environment where human coders can review and complete medical coding for those charts and or encounters that did not qualify/did not pass the confidence threshold

Complete, compliant coding automation workflow



Incomplete coding automation workflow



Potential problems:

- Quality of data used to train the AI (low intercoder agreement rates, specificity issues, history of denials)
- Inability to consume the most up-to-date documentation which can result in having to reprocess the data

Five steps for thoughtful and effective autonomous coding adoption

1 Examine service lines and departments

Which areas have high volume and less complex coding workflows? These departments and services lines are where you have opportunities for full automation. Look at your coding practices and find out which areas have lower risk from an automation perspective and start there.

Sample category group (Outpatient)	Description
Same day surgery	Interventional cardiology
Same day surgery	Interventional radiology
Same day surgery	General surgery
Same day surgery	Endoscopy
Same day surgery	Urology
Ancillary services	Radiology: Diagnostic breast imaging
Ancillary services	Radiology: Diagnostic ultrasound
Ancillary services	Radiology: MRI
Ancillary services	Radiology: Screening mammography
Ancillary services	Radiology: Bone density

2 Look at your existing coding technology

What pre-existing technology features can you leverage? In areas where CAC is in place, healthcare organizations can begin prepping coding teams for an autonomous experience. Key questions for HIM directors or coding managers include:

- Are coders trusting the engine results?
- Are coders still using manual coding methods?
- Are there departments or specific procedures within your organization that can be improved?
- Are coders adhering to best practices?

3 Plan for change and recruit future allies

This step is even more important in the coding world, where accuracy, control and trust in the data are paramount to a complete, compliant coding workflow. Your change management plan should:

- Ease any worries about the new technology adoption. Leverage CAC, automated evidence view, auto-code sequencing and other pieces of automation that are already in place so coders can transition slowly. Be clear that autonomous coding can help expand coverage and combat coder shortage.
- Identify potential coding super users. These individuals will be advocates for automation. They will be the ones testing the technology, providing early feedback, training their peers and facilitating successful adoption.
- Prepare what you will measure and define what success means. What are your specific goals for percentage of codes automated and for automation accuracy? Now is the time to select what you will measure and create the baseline that will set you up for success.

Example of baseline KPIs:

Coding denials:

- By service line or department
- Track monthly/quarterly

Productivity:

- All the above
- Charts per minute
- Filter out new staff undergoing training

Accuracy:

- Accuracy of the final code — through denials or audit metrics
- Accuracy of the automation — percentage automated

Coverage:

- Number of accounts able to code today versus not able
- Accounts receivable (A/R) days (including discharged not final coded (DNFC) and discharged not final billed (DNFB))

4 Trust but verify

Trust in the system only happens when you can review the data and ensure it is correctly assigning final code sets.

A well-thought-out workflow includes transparency regarding the results of the automation and the ability to perform quality control. Being able to show the results of what the engine qualified for autonomous coding versus what a manual coder could select out of the same charts and same visits can instill confidence and control over the automation.

To build coder confidence, plan to do an initial quality review of the automation at 100% and lower the review once the team is more comfortable. Our recommendation is not to go below 5% quality assurance (QA) fraction.

5 Implement in phases

Phased implementation including adequate education and training are key to successful autonomous coding adoption. Look at your organizational footprint. If you are part of a large health system, will a per hospital approach work for your infrastructure? Consider starting with one or two service lines or departments, show the results and then expand.

In summary

- Coding staff shortages are real and must be addressed
- AI in healthcare is here to stay — but needs careful guidance
- AI models can only go so far — organizations need a comprehensive approach to achieve a complete, compliant workflow
- True autonomous coding means no coder or human interaction and at least 95% accuracy
- End-user controls along with quality reviews and semi-autonomous workflow are an essential part of the mix
- You can prepare for autonomous coding adoption today

Learn more at: go.solventum.com/autonomous

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