Twin Cities Orthopedics Revenue Revolution: Transforming Medical Coding with AI

Company Profile:

TWIN CITIES ORTHOPEDICS

Industry: Medical Practice

Specialties: Orthopedic Urgent Care, Orthopedic Clinic, Therapy, Sports Performance, Wellness, Prosthetics & Orthotics, Imaging, Rheumatology, EXCEL Surgery & Recovery

Headquarters: Bloomington, MN

Number of Providers: 130+

Number of Employees: 1,900+

Introduction

Twin Cities Orthopedics (TCO), the largest orthopedics organization in the US, was growing rapidly. As the organization expanded, so did its challenges with revenue cycle management. With over 5,000 surgeries and 60,000 office visits per month, managing the high coding volume, which required 100% coder abstraction, was difficult using existing workflows. Seeking to streamline its coding operations and improve accuracy, TCO turned to aiHealth's autonomous AI-powered platform to reimagine its medical coding operation.

The Challenge

Twin Cities Orthopedics has over 35 clinics in the Midwest that encompass a number of specialties, including rheumatology.

As the practice's clinics grew, so did coding volume. The new flow of patients and encounters began stretching the limits of their current coding workflow. The backlog Evaluation and Management work queue had grown to approximately 21,000 cases—equating to 10.5 days of work, given their team's capacity to process roughly 2,000 cases per day. Coders were manually coding 8 to 10 surgical encounters per hour, leaving few resources to allocate to reducing backlogs.

> "Our collaboration with aiHealth has been a game-changer, completely transforming our coding operations. Their platform has equipped our team to succeed in a challenging environment while meeting growing demands with unprecedented efficiency and accuracy by reducing turnaround times from five days to just one, clearing backlogs, and enhancing productivity."
>
> **Brandon Janike**
> Vice President of RCM

The problem was further exacerbated by the increasing coding complexity of musculoskeletal services, staffing shortages, performance issues, and rising labor costs. With coding turnaround times rising, TCO urgently needed a more efficient and scalable solution.

The Solution

Twin Cities Orthopedics needed to increase coding throughput without overwhelming its staff, making automation a logical next step. They had the ambitious goal of identifying a precise solution that could handle the complexity of coding within their specialty practices while maintaining high accuracy. To address their coding challenges, TCO chose aiHealth's AI-powered autonomous coding platform, aiH.Automate™. The solution integrated seamlessly with their existing EHR (Veradigm) and Aptarro (formerly known as RCx Rules),

Twin Cities Orthopedics' billing and payor management solution, and delivered several key advantages upon implementation:

Barriers to Revenue Cycle Efficiency:

- Overwhelmed workflows from growing coding queues, causing backlogs and inefficiencies
- Difficulty recruiting and training enough coders
- Over-reliance on manual processes and full human review of provider encounters

Outcomes:

- 50-60% Increase in Coder Productivity
- Up to 95% Accuracy Rate on Direct-to-Bill Encounters
- 3 Day Reduction in Charge Lag Accelerating Revenue

Coding Efficiency: By automatically coding for common CPT & ICD codes, aiHealth decreased the need for manual coding by 50%, drastically increasing coder efficiency and freeing up coders to work on more complex cases. aiH.Automate™ gave direct-to-bill capabilities to TCO by automating the transformation of clinical notes into procedural and diagnosis codes without human intervention.

Specialized Accuracy: aiH.Automate™ utilizes artificial intelligence and machine learning (AI/ML) models that are built for each specialty and trained on audited, domain-specific coding data, bestowing up to 95%+ coding accuracy. This level of specificity and precision reduces coding errors and denials.

Transparent AI & Audit Trails: aiH.Automate™ gives organizations the power to control the sampling rate of AI-coded encounters, set thresholds for exceptions, and provides a full audit trail to enhance compliance.

To address the coding bottlenecks, a phased deployment was planned to ensure a seamless integration with existing workflows, minimize disruption to daily operations, and allow the team to build confidence in the AI-powered platform's capabilities. By starting with a focused rollout in orthopedic operative notes—one of their most resource-intensive areas—Twin Cities Orthopedics could evaluate the platform's impact and refine its application before scaling to other specialties. This deliberate strategy set the stage for a transformational shift in their revenue cycle management operations.
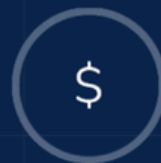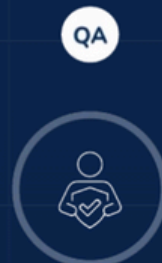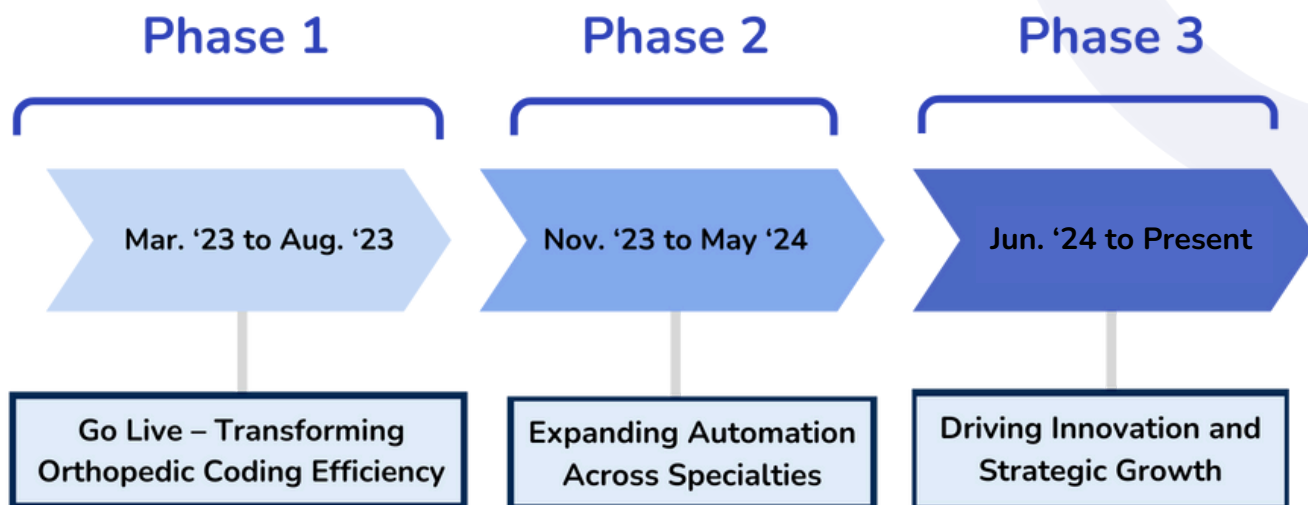
Transforming coding turnaround times from minutes to seconds.

Phase 1: Transforming Orthopedic Coding

Twin Cities Orthopedics began its journey with aiH.Automate™ by focusing on orthopedic operative notes—a high-volume, complex area slowing their revenue cycle. The results were immediate and striking. With new direct-to-bill capabilities, turnaround times for surgical coding dropped from five days to just one, enabling real-time processing of current cases and significantly accelerating revenue.

aiHealth automates the integration between the EHR and RCM workflows relieving the administrative burden of assigning tasks to TCO's coding team. Coders could now complete cases within a 24-hour window, significantly reducing charge lag and accelerating revenue capture.

This swift improvement had a ripple effect across the team. This reduction in burden allowed coders to start each day with a clean slate, boosting productivity by 20-30% and ensuring cases were processed in a timely manner.

Phase 1	Phase 2	Phase 3
Mar. '23 to Aug. '23	Nov. '23 to May '24	Jun. '24 to Present
Go Live – Transforming Orthopedic Coding Efficiency	Expanding Automation Across Specialties	Driving Innovation and Strategic Growth

aiHealth

Phase 2: Scaling Across Specialties

Building on the success of the initial deployment, Twin Cities Orthopedics expanded aiH.Automate™ to additional service lines, including Rheumatology and deployed the Evaluation and Management (E/M) autocoding module to support E/M and office based procedure coding. This broader implementation tackled some of the most significant bottlenecks in their workflows.

With up to 95% accuracy rate, the platform automatically coded high-volume procedures like hip, knee, shoulder, and carpal tunnel surgeries, sending the codes direct-to-bill, significantly reducing the need for human intervention. Coders were freed up to focus on more nuanced cases, creating a balance of automation and oversight that improved both efficiency and morale. With manageable workloads and faster case resolutions, coder productivity surged to 21 exceptions per hour, a 50-60% increase in productivity, transforming the speed that TCO captured revenue.

The new coding capacity that resulted from direct-to-bill capabilities reduced the E/M coding backlog 10.5 days to 1.5, with many team members processing an average of 133 cases daily. Seven top performers even exceeded 150 cases per day, showcasing the efficiency of aiH.Automate™ and the power to streamline revenue cycle operations.

Phase 3: Broader Impact & Future Vision

The operational improvements achieved through aiH.Automate™ extended beyond coding speed and accuracy. The platform enabled TCO to reallocate resources to higher-value activities, such as front-end auditing, provider education and clinical documentation improvement. This strategic shift has positioned the organization for sustained growth and innovation.

As the deployment continues to expand, TCO is poised to unlock even greater gains. Upcoming phases will integrate additional service lines and deepen the automation capabilities, further solidifying the partnership between Twin Cities Orthopedics and aiHealth.

Twin Cities Orthopedics' experience with aiH.Automate™ illustrates the transformative potential of AI in healthcare. By combining advanced automation with human oversight, TCO has not only overcome staffing shortages and coding backlogs but also created a more sustainable and efficient revenue cycle. The journey is ongoing, but the results so far demonstrate the incredible value of a well-executed AI strategy.

> "We're proud to partner with Twin Cities Orthopedics in implementing our AI-powered platform, aiH.Automate™. This collaboration has transformed their coding operations, reducing turnaround times and improving accuracy while allowing their team to focus on higher-value initiatives.
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> This partnership underscores the tangible impact AI can have on healthcare operations, and we're excited to continue driving innovation and efficiency together."
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> **Kyle Swarts**
> aiHealth, President

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