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BlueCross BlueShield Association

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ANALYSIS PERIOD
Q1 2023 - Q4 2025

Hospital Coding Intensity Analysis:
Major Bowel Procedures

Evidence of secondary diagnosis growth driving DRG coding intensity

EXECUTIVE SUMMARY

Hospitals are increasingly billing inpatient stays as more medically complex than they did a few years ago. That shift means higher payments to hospitals and higher costs across the healthcare system. We estimate the added cost to the Blue System at about $942 million over two years.

What is notable is how it happens. It is not more surgeries or more procedures. It is more secondary diagnoses added to a claim, conditions like low sodium or anemia, that move the claim into a higher-paying category. Many of these can be identified from a single lab result. The rise coincides with hospitals adopting new AI-assisted billing software that scans records and lab data for anything that can be coded.

To separate real changes in illness from changes in coding, this analysis looks for clinical discordance — cases where a diagnosis is added to the claim but the treatment you would expect for that diagnosis is not there. A condition that raises the payment but does not change the care a patient receives is the pattern the study focuses on.

The trend is steady and widespread. The share of cases billed as complex rose from roughly 37% in early 2023 to about 40% by late 2025. In one closely studied area, major bowel procedures, the most complex claims went up while the simplest ones fell, even though the associated treatments themselves did not change. The added complexity is concentrated in a subset of hospitals within peer groups (e.g., within teaching hospitals), which points to differences in coding practices more than a broad change in how sick patients are.

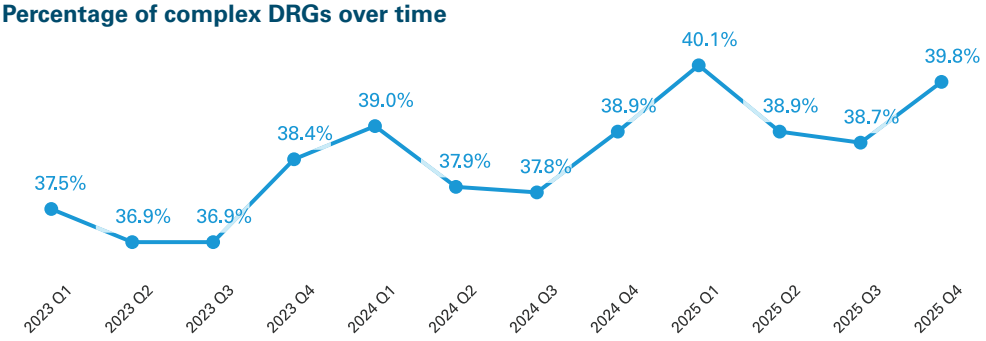
OVERVIEW

Hospital inpatient coding intensity — the increasing use of diagnoses that place patients into more medically complex and higher-paying billing categories — has increased materially over the past two years. We estimate that this trend is generating approximately $942 million in incremental claims costs for the Blue Cross and Blue Shield (Blue) System alone. Our analysis of over 55,000 excess complex cases found that hospitals are systematically adding secondary diagnoses that bump claims into higher-severity, higher-reimbursement diagnosis-related groups (DRGs) without a corresponding increase in clinical care. These shifts account for 70% of the incremental inpatient coding intensity costs to the Blue System.

SYSTEM-LEVEL ESCALATION

The rate of complication or comorbidity (CC) and major complication or comorbidity (MCC) coding has increased steadily from Q1 2023 through Q4 2025. Compared with 2023 baseline rates, hospitals classified 55,158 additional cases as complex. Those cases generated $653 million in incremental reimbursements at an average of $11,800 per excess complex case.

Percentage of complex DRGs over time



BOWEL PROCEDURE COMPLEXITY

Insights on Complexification

A deep dive into a specific DRG family illustrates what is driving increased complexity and reveals the fingerprints of the AI-enabled revenue cycle management (RCM) technologies. This also allows one to investigate clinical discordance — claims where the diagnosis is present, but expected treatment for this diagnosis is absent. The insights from these specific DRG families are consistent with broader patterns of increasing complexity across inpatient hospital claims.

Major bowel procedures (DRGs 329-331) are comprised of surgical procedures that are primarily used to treat colon cancer or diverticular disease. Over half of these procedures are endoscopy-based. Between 2023 and 2025, claims at the highest level of complexity (MCC claims) increased from 20.2% to 22.7%, while non-complex cases declined from 36.6% to 32.8%. This DRG family alone accounts for $60.8 million in incremental claims costs, as patients were moved into higher-severity, higher-reimbursement categories.

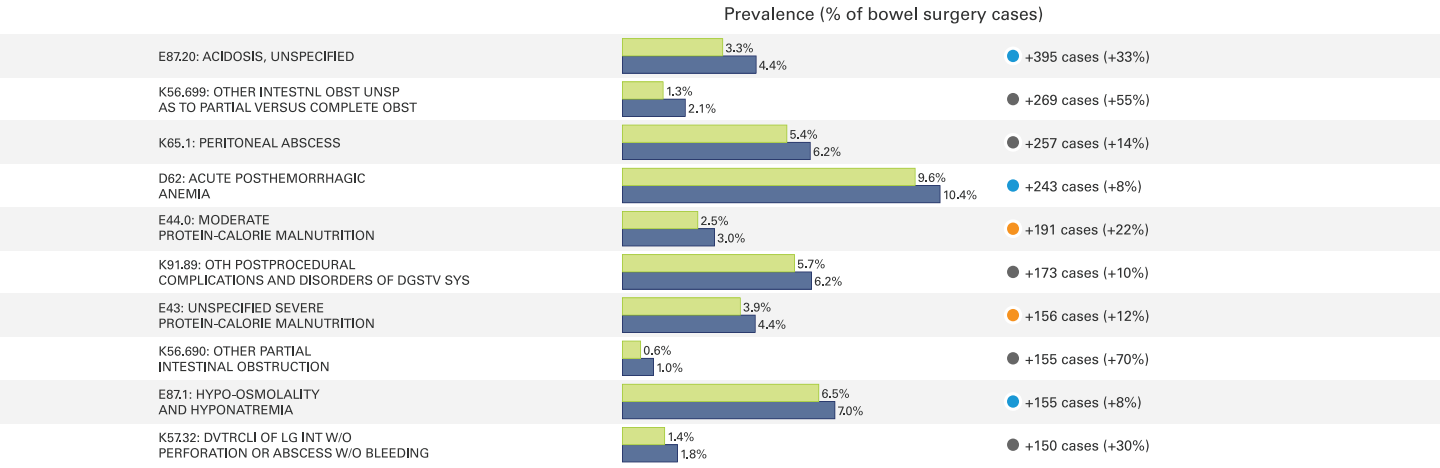
DIAGNOSIS DRIVERS

For major bowel procedures, evaluation of secondary diagnoses reveals specific documented diagnoses driving severity escalation, or "bump codes." The fastest-growing bump codes include lab-derived diagnoses such as unspecified acidosis (E87.20), hypo-osmolality and hyponatremia (E87.1) and acute posthemorrhagic anemia (D62), alongside documentation of malnutrition, abdominal abscess and intestinal obstruction diagnoses. Many of these diagnoses can be derived from single laboratory values or routine observations, making them particularly well-suited for detection by modern RCM technology. Technologies including ambient listening for observation codes and laboratory data mining appear to be contributing to this coding growth.

Top 10 Secondary Diagnoses Driving DRG Complexity Growth

Major Bowel Procedures (DRG 329-331) | 2023 vs. 2025

Labs: Laboratory-derived Diagnoses • **Ambient Listening:** AI Observation-based Codes • **Other:** Other Documentation Sources

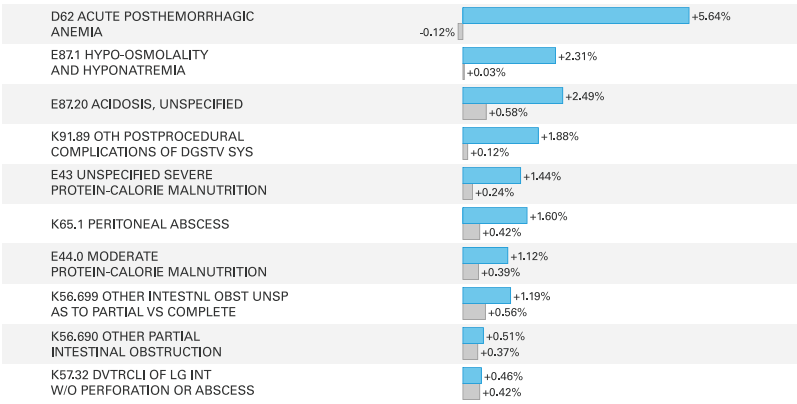


FACILITY CONCENTRATION

These new RCM technologies are being adopted at different rates across healthcare systems. Hospitals in the top 25% of complexity growth show significantly larger increases in secondary bump codes prevalence compared to other facilities. This difference is most pronounced for lab-derived conditions, suggesting these changes are driven by targeted technology-supported coding initiatives rather than shifts in patient illness.

Diagnosis Growth by Hospital Cohort for Major Bowel Procedures

2023 to 2025 | Top 25% Hospitals Other Hospitals



Clinical Discordance

One of the hallmarks of diagnosis-driven complexity is identifying treatment-diagnosis discordance. Hospitals with the highest coding growth show lower treatment intensity overall than peer facilities, where claims include diagnoses that are not accompanied by treatment one would expect for those conditions. Hospitals with the highest coding growth classify 76% of bowel procedures as complex, compared with 65% at other hospitals. However, these hospitals have similar or lower intensity of services (e.g., ICU use).

Period: 2025 **Bowel Procedures (DRGs 329-331)**

Metric	Top 25%	Other
% Complex (MCC + CC)	75.6%	65.0%
% ICU Utilization	11.5%	13.2%
% Transfusion	3.6%	3.9%
% Reoperation	1.7%	1.5%
Median LOS (days)	4.0	4.0

Validating Diagnosis-Treatment Concordance: Anemia

Further evidence of treatment-diagnosis discordance can be found by examining posthemorrhagic anemia as a common bump code. Posthemorrhagic anemia refers to low hemoglobin levels in the setting of blood loss (hemorrhage), which often occurs during major surgical procedures.

Period: 2025	Top 25%	Other
Anemia rate	13.7%	9.9%
Transfusion rate for claims with anemia diagnosis	16.9%	19.3%

When AI is used to identify abnormal tests, it may be set to flag *all* tests that have results outside of the normal range, even though clinicians typically do not treat mild anemias. **In top growth hospitals, the rate of anemia diagnosis is 38% higher than that of peer hospitals. However, their transfusion rate *among* patients diagnosed with anemia is much lower: 16.9% transfusion rate compared to 19.3% at peer facilities.** This diagnosis-treatment discordance suggests that the higher rate of anemia is a result of AI-driven coding. Consistent with this finding is the fact that the overall rate of transfusion is similar across all cases (above).

The consistent inverse relationship between diagnosis-based complexity and both aggregate resource utilization and diagnosis-specific procedural intervention is the strongest indicator that coding escalation reflects documentation practice changes rather than actual patient acuity shifts.

CONCLUSION

Systematic use of AI-enabled RCM tools by healthcare systems may be linked to over $650 million in excess hospital reimbursement related to coding complexity optimization alone. This represents incremental hospital reimbursement from complexity growth for inpatient stays, independent of utilization or case mix changes. Critically, this growth hasn't stopped, nor is it limited to inpatient care. As more healthcare facilities adopt AI-enabled capabilities to optimize coding, increases in medical trend will continue. Using the Blue System's unique data assets, the Blue Cross Blue Shield Association has the unprecedented ability to identify these patterns, measure impact and proactively address cost drivers across the healthcare system.

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