WHITE PAPER

Undercoding in E/M Services: Revenue Loss and AI-Powered Recovery

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Overview

Behavioral health clinics and independent primary care practices continue to forfeit substantial revenue due to persistent undercoding of Evaluation & Management (E/M) visits—routinely billing lower-level CPT codes, even when service levels support greater complexity[1,2]. This challenge is rooted in time pressures, audit anxiety[1], outdated documentation habits, and frequent omission of nuanced Social Determinants of Health (SDOH)[3]. As a result, clinicians' mental effort and the real complexity of patient populations remain underrepresented in claims, causing revenue loss and a diminished reflection of provider effort and care delivered[1,2].

This risk is now urgent: **coding-related denials surged by 126% in 2024**, as payers intensify audits and claim reviews, making **coding optimization** and **not just accuracy** a business-critical necessity for revenue capture and compliance.[4] Coding optimization ensures claims reflect the true complexity of care, better protecting revenue and enhancing operational sustainability.

Recent breakthroughs in artificial intelligence offer a transformative solution. These next-generation solutions combine speech, behavioral cues, patient histories, EHR data, and natural language processing to capture **Medical Decision Making** (MDM), encounter time, and social/behavioral complexity in an optimized, compliant, and audit-ready fashion[5]. Modern AI documentation solutions enable maximized billing potential and regulatory alignment, with privacy and security by design[5].

Even modest improvements in coding optimization can unlock **six figures** of annual revenue per provider, without any increase in patient volume[2,4]. This white paper quantifies the cost of undercoding, demonstrates the use of recovery estimators to surface actionable opportunity, and explains how generic Ambient AI solutions and next-generation empathetic AI can reshape documentation, coding, and revenue protection for modern practices[4,5]

Market Drivers

The landscape for behavioral health and primary care documentation is undergoing seismic change, shaped by powerful regulatory and market forces. Reimbursement reforms, payer scrutiny, and new expectations for documentation are forcing leaders to overhaul how E/M services are coded and reported. As a result, the financial, compliance, and operational environment is fundamentally being reshaped—particularly for smaller practices with limited billing infrastructure[6,7].

01 Intensifying Payer Scrutiny and Compliance Demands

Major commercial payers are fueling a new era of strict compliance standards. Effective October 2025, Cigna will require audit of higher-level E/M claims for documentation sufficiency, reducing or denying payment for insufficient submissions[8]. Effective September 1, 2025, Aetna's Claim and Code Review Program (CCRP) will expand to include additional claim coding edits for all commercial, Medicare, and Student Health claims, further tightening scrutiny across a broad portfolio.[31] Other insurers are expected to follow, ushering in industry-wide "**pre-pay scrutiny**" that increases both operational and financial risk8,[4]. What was once largely an internal revenue loss (from undercoding) is now a direct compliance risk for higher-level codes[4].

02 E/M Guideline Reforms Shift Coding Burden

Major reforms by the AMA and CMS in 2021 and 2023 moved E/M guidelines from checklist-based history/exam toward Medical Decision Making (MDM) and encounter time[9,10]. While the aim was to ease workload, these reforms increased the clinician's responsibility for supporting and justifying clinical complexity—especially important in behavioral health, where documentation often lags behind teamwork and cognitive complexity. With 300 new CPT codes in 2026 (digital health and AI) will expand opportunities and increase requirements for audit-ready reporting[10].

03 SDOH and Z-Codes—Critical, Yet Overlooked

Social determinants of health (SDOH)—factors like housing stability, income, food access, transportation, and psychosocial stress—are increasingly recognized as primary drivers of chronic illness, patient risk, and downstream health costs28. Research shows up to 50% of individual health outcomes are determined by SDOH and socioeconomic conditions, not clinical care alone28. SDOH strongly influences who develops chronic disease, who

struggles with prevention and management, and who experiences poorer outcomes even with similar medical interventions28.
Yet national data reveals a major documentation gap: fewer than 2% of Medicare beneficiaries have an SDOH Z-code on their claims, and less than 1% of claims nationwide contain an SDOH code29. This is not for lack of clinical impact,patients with multiple adverse SDOH face far higher rates of depression risk, substance use, cardiovascular disease, and impaired chronic disease control28. Even a single adverse SDOH is associated with significantly lower hypertension control rates and poorer chronic disease outcomes.28."

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04 AI-Readiness, Workflow Modernization, and Value-Based Care

Modernization is accelerating across the healthcare sector. The rapid adoption of EHRs, telehealth, and AI-powered documentation/coding is mainstream: the U.S. behavioral health software market alone is forecast to **double by 2030, surpassing $8.6 billion** and growing at 13% annually[11]. AI-powered documentation and coding are now essential, helping practices of all sizes adjust to evolving requirements and workflow modernization.[12]

Industry Challenges

While market and regulatory forces are reshaping the reimbursement landscape, healthcare providers are already facing persistent, daily challenges that threaten practice viability, clinician wellbeing, and patient care. Without modern solutions, the gap between what is documented and what is optimally coded continues to widen—driving unnecessary financial loss, inefficiency, and physician burnout[12].

Problem 1 : Chronic Undercoding—The "Silent Revenue Killer"

Physicians undercode at alarming rates, eroding practice revenue and obscuring the real complexity of patient care. A 2019 Family Medicine study found **72% of visits were undercoded**, with an average **per-physician annual loss of $57,570** without seeing a single additional patient[1]. This risk is even higher in behavioral health, where cognitive and psychosocial complexity is often poorly captured.

Why E/M Undercoding Happens?

- **Documentation shortcuts:** Busy clinicians often take minimal notes that don't support higher-level Medical Decision Making (MDM)[13].
- **Audit fear:** Many providers default to "safe" 99213 codes and miss justified 99214/99215 opportunities[1].
- **Guideline inertia:** Some remain unaware that coding can be based on total time or MDM since 2021 reforms[14].

Table 1. Evaluation & Management (E/M) Office Visit Codes (2025)

CPT Code	Level	Typical Visit Description
99211	Level 1	Minimal: Nurse-only or brief check-in
99212	Level 2	Problem-focused: Minor issue, straightforward decision
99213	Level 3	Low complexity: Chronic or acute problem
99214	Level 4	Moderate complexity: Multiple chronic or new significant problems
99215	Level 5	High complexity: Serious conditions, high-risk management

Source: AMA CPT Guidelines, 2023.

The Financial Impact of Undercoding

Even a one-level downcode carries major financial cost. For example:

- 99213 → 99214: +$36.91/visit
- 99214 → 99215: +$50–$70/visit on average[15]
- Annual loss: Undercoding just half of a 30-visit day can cost ≈ **$130,000 per physician, per year** (assuming 250 billing days).[16]

Table 2. Medicare Average Reimbursement (2025, Non-Facility)

CPT Code	Medicare Reimbursement
99211	$22.64
99212	$54.99
99213	$88.95
99214	$125.18
99215	$175.64

Source: CMS Physician Fee Schedule, 2025. Non-facility setting.

Table 3. National E/M Coding Benchmarks (Medicare)

CPT Code	National Benchmark (%)
99211	2.64%
99212	2.84%
99213	43.18%
99214	48.40%
99215	2.94%

Source: 2017 E/M Bell Curve & Auditing Sourcebook, DecisionHealth.

Table 4. Modeled CPT Distribution vs. Benchmarks (26 visits/day, 250 days/year)

CPT Code	Non-Facility Price	Daily Visits	Benchmark vs. Actual	Missed Reimbursement Estimate
99211	$22.64	1	2.64% vs. 3.8%	50%
99212	$54.99	1	2.84% vs. 3.8%	50%
99213	$88.95	11	43.18% vs. 42.3%	30%
99214	$125.18	12	48.40% vs. 46.2%	30%
99215	$175.64	1	2.94% vs. 3.8%	0%

Source: CPT codes and descriptions from AMA CPT Guidelines, 2023.
Source: Rates from CMS Physician Fee Schedule Look-Up Tool (2025). Non-facility setting (private practices/outpatient clinics). Assumes 250 billing days per year.
Source: 2017 E/M Bell Curve & Auditing Sourcebook, DecisionHealth. Percentages reflect Medicare distribution for established patient visits.
Source: Modeled using Medicare non-facility rates (CMS, 2025) and national benchmark distributions (DecisionHealth). Assumes 26 daily visits and 250 billing days per year.
Source: mirro.ai Undercoding Revenue Recovery Estimator, 2025 (link).

Revenue Opportunity using Undercoding Estimator:

- Shifting just **30% of 99213 visits to 99214,** and **30% of 99214 to 99215.**
- Generates an additional ≈ **$348.87 per day—**
- $348.87 × 250 days = **$87,216.38 per physician/year**

This is not "new" revenue; it's already earned but l**eft unclaimed due** to coding conservatism, workflow gaps and the time required to properly document higher-level complexity. Undercoding isn't a mere back-office issue: as payer scrutiny rises, unclaimed revenue becomes a direct threat to sustainability and practice quality.

Problem 2: The Documentation Burden

Providers are spending more time documenting care than delivering it. Research in JAMA Network Open (Rotenstein et al., 2023) found that primary care providers devote a median of 36.2 minutes per visit to electronic documentation more than face-to-face patient time.[19] Across a clinic day, this adds up to 3.4 hours of EHR work, plus another 1.2 hours after hours. The result is eroded patient interaction, growing "**pajama time,**" lost billing opportunities, and rising risk of burnout. **Documentation systems intended to streamline workflows now siphon time** and resources from direct care, turning efficiency tools into hidden liabilities.

Problem 3: SDOH and Z-Code Documentation Gaps

Despite regulatory urgency and payer incentives, providers struggle daily to capture and code SDOH reliably. Several barriers stand in the way:

- Limited time for screening during routine encounters
- Lack of workflow-integrated prompts for SDOH and Z-codes
- EHR or billing systems not surfacing SDOH code options
- Persistent uncertainty about how SDOH drives documentation and risk adjustment[3],[30]

The result: undercoding SDOH remains the norm, carrying steep penalties in lost risk adjustment revenue, underpowered population health interventions, and weaker justification for higher-complexity E/M claims[3],[30]. Rising external pressure is only part of the equation; without modern, usable documentation tools, most clinics will continue struggling to capture the true social and economic complexity of their patient populations.

Problem 4: Workforce Shortages and Burnout

Clinician shortages and burnout threaten national access to care. As of 2025, the nation faces acute shortages of mental health and primary care professionals; The U.S. The Department of Health and Human Services show persistent gaps in psychiatrists, addiction counselors, and therapists through 2037. The AMA reports 43.2% of physicians and 93% of behavioral health workers report at least one symptom of burnout[20]. Harvard researchers estimate the national cost at $4.6 billion annually due to turnover and lost clinical hours Coding-related denials surge and revenue strain amplify retention risks.[22] Persistent turnover and shrinking workforce debilitate small and mid-sized practices.

Undercoding quietly siphons **revenue, documentation** demands **consume clinical time**, and **workforce shortages** compound **burnout**.

Together, chronic undercoding, documentation burden, and workforce burnout represent a triple threat to healthcare sustainability. Clinics that don't address these interconnected challenges risk financial instability, compliance penalties, and compromised patient care.

Ambient Clinical Documentation & Coding Intelligence

Emerging digital tools and workflow innovations now enable real-time capture of the true complexity of clinical visits, ensuring revenue is fully reflected in coding and greatly reducing charting burdens. Practices confronting undercoding, heavy documentation demands, and growing audit risk require augmented intelligence solutions that bridge the widening gap between exam room realities and optimal reimbursement.

Ambient Clinical Documentation & Coding Intelligence (ACDCI) integrates ambient listening, advanced natural language processing (NLP), and coding intelligence to transform patient–provider conversations into compliant, audit-ready documentation. These solutions:

- **Capture clinical encounters** and passively record key provider–patient conversations in real time.
- **Structure notes** for accurate, standardized EHR-ready documentation, using generative and ambient AI to transcribe and summarize visits.
- **Surface gaps and missed codes**, identifying documentation or billing omissions to improve claim accuracy, support risk adjustment, and maximize revenue.
- **Integrate seamlessly into existing EHR workflows,** allowing for efficient data transfer and minimal disruption to established clinical practice.

Industry evidence confirms that AI-powered documentation assistants are transforming workflow efficiency, patient satisfaction, and care quality. Physicians report reduced documentation time, less after-hours "pajama time," and more face-to-face patient interaction with ambient AI scribe technology.[23],[24]

Market Outlook and Transformation

The market trajectory highlights a decisive shift:

- Analysts expect **global AI in healthcare** to **reach $187.7 billion by 2030**; the conversational AI segment alone is projected to exceed **$123 billion by 2034.**[27]
- Within behavioral health, the **AI market is projected to nearly double from $55 billion (2024)** to **$115 billion by 2034.**[26]
- The **ambient intelligence market** is forecast to reach **$37.2 billion in 2025**, climbing past **$91 billion by 2030**, with a 20% CAGR, driven by use cases spanning healthcare, buildings, mobility, and more[25].
- Adoption is rapid across leading health systems, with academic and regional networks deploying ambient AI scribes and documentation platforms to address both physician burnout and revenue integrity.

This transition illustrates how AI-driven documentation and coding intelligence is swiftly becoming the operational backbone of modern care delivery, supporting compliance, billing, and workflow modernization.

From Automation to Empathy-Driven Intelligence

Empathy is a clinical necessity in healthcare, yet most ambient and augment intelligence AI solutions stop at efficiency, overlooking the tone, stress, and psychosocial complexity that define real-world care. **mirro.ai bridges this gap** by putting empathy and human nuance at the center of every workflow.

Where most documentation tools stop at basic transcription or compliance, mirro.ai goes radically further:

- **Empathetic AI at Its Core: Powered** by **patented multimodal intelligence**, mirro.ai analyzes not just words but also tone, stress, emotion, and context, producing deeply nuanced, patient-centered documentation.

- **Augmented Care, Not Just Automation:** By layering emotional and behavioral cues atop clinical facts, mirro.ai provides clinicians a real-time empathy engine documenting what's said, how it's said, and why it matters for both care and reimbursement.
- **Coding Optimization:** Maps complexity, time, SDOH factors, and risk to the right CPT/ICD codes; prompts for missed details and ensures every billable event is captured and explained, eliminating undercoding and missed Z-codes. Every note includes explainable coding rationale and an audit trail, enabling confident billing and reducing clawback risk.
- **Empathy-Driven Intake and Triage:** Supports telehealth and behavioral health with **emotion-aware pre-visit** intake, triage, and personalized follow-up reducing attrition and boosting patient engagement.
- **Explainable AI, Privacy, and Assurance:** mirro.ai delivers transparent, click-through audit trails and justifications, all fully aligned with HIPAA, modern privacy, and ethical AI standards. Deterministic, explainable outputs mean every prediction and suggestion can be traced, trusted, and easily validated by your team or regulators.
- **Plug-In, Modular, and Rapid:** Integrate mirro.ai into your existing EHR, telehealth, or triage stack with only a few lines of code. The plug-and-play architecture and user-ready APIs mean companies avoid the "AI iceberg"—all the headaches of governance, compliance, and integration—simply deploying the features needed when and where they need them. Most clinics are live in weeks, not months.

mirro.ai is the **next-generation empathetic augmented intelligence** layering emotional intelligence, behavioral insight, and clinical reasoning into care delivery. With mirro, clinicians capture not just what happened, but how and why it mattered, restoring empathy to the heart of medicine. It's a **comprehensive, empathy-driven contextual and coding intelligence** not just reducing administrative burden, but reshaping care delivery so that empathy, compliance, and revenue protection are baked into every workflow.

mirro in Practice: How It Works

A mid-sized behavioral health clinic was consistently billing most follow-ups at 99213, even when cases involved multiple chronic conditions, medication titration, or social risk factors. Providers were under-documenting complexity due to time pressure, leading to lost revenue and compliance gaps.

How mirro Works

1. Emotional & Contextual Analysis

- mirro listens ambiently during the visit, analyzing tone, stress markers, and psychosocial context (e.g., patient anxiety, unstable housing, family strain).
- It flags these elements as contributors to visit complexity, ensuring they are captured in the note.

2. Clinical & Staff Activity Summarization

- Pulls in actions beyond the face-to-face encounter, like care coordination calls, prescription refills, or recent lab reviews.
- Summarizes these tasks so clinicians can justify higher-level MDM or time-based billing.

3. Real-Time Clinical Cueing

- mirro.ai operates as an ambient clinical intelligence layer, transcribing and analyzing the full provider-patient encounter in real time—without manual note-taking or workflow disruption. As the conversation unfolds, mirro.ai identifies key documentation elements needed for coding and quality care, surfacing them automatically within the session plan for provider review:
    - **Session-Based Planning:** Using patient history and encounter context, mirro pre-populates a checklist of high-impact topics (medication risks, comorbidities, SDOH risk factors) tailored for each visit.
    - **Intelligent Cueing:** When mirro detects clinical details—such as a medication risk conversation, a diagnostic review linked to a new diagnosis, or social factors indicating a billable Z-code (e.g., housing instability, Z59.0)—it tags and highlights these elements in the note and coding workflow.
    - **Comprehensive Capture:** All relevant risk discussions, lab reviews, and SDOH elements are mapped to the correct medical decision-making (MDM) and CPT code levels, supporting accurate code selection and audit preparedness.
    - **Provider Review and Confirmation:** Providers can quickly review all surfaced cues before sign-off, confirming or supplementing details as needed. This enables thorough, justified documentation without extra administrative burden.

mirro.ai ensures every session is thoroughly documented, coded, and audit-ready—empowering providers to deliver complete, empathetic care while maximizing compliance and reimbursement.

4. Coding Intelligence & Claim Prep

- Maps complexity, time, and SDOH to the correct CPT code.
- Provides transparent rationale: "Visit meets 99214 due to multiple chronic problems, med titration, and risk counseling."
- Prepares an audit-ready claim with click-through justification.

5. Retrospective Optimization Reports

- Identifies past encounters where documentation supported a higher code (e.g., 99214 → 99215).
- Generates coder-ready summaries so the practice can pursue legitimate rebills within payer audit windows.

Outcome for the Clinic

- **Baseline:** 70% of follow-ups billed at 99213, 25% at 99214, 5% at 99215.
- **Post-Mirro:** Majority of eligible 99213s correctly upcoded to 99214; complex cases escalated to 99215 when supported.
- **Projected Revenue Lift:**
  - ≈40% of prior 99213s to 99214 adds ~$40–$50 per encounter.
  - On 25 daily visits, this equates to ~$1,000/day or ~$250,000/year per physician while also reducing denial risk and burnout.

AI-enabled and Audit Ready with empathy-first AI in weeks.

Book Demo

mirro.ai/book-demo

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