Algorithmic Claim Reductions & Automated Denials in Employer Health Plans: A Public-Interest Review

Executive Summary

Employer health plans increasingly rely on algorithmic decision tools to score, edit, deny, or reduce medical claims before any human review occurs. These systems operate inside plan administrators' proprietary claims-processing platforms and are not disclosed to employers, beneficiaries, or regulators.

Automated edits now shape coverage determinations, allowed amounts, medical necessity reviews, duplicate-claim flags, and "clinical logic" denials. Yet the logic sets, weighting methods, false-positive rates, and financial incentives behind these systems remain opaque.

This brief describes the structure of algorithmic claim edits, the financial architecture that drives them, and the systemic transparency failures that affect plan members, employer fiduciaries, and public purchasers. It outlines specific risks and establishes a research agenda for Year 1 of the Cost of Care Project.

Background

Most self-funded employer plans use Administrative Services Only (ASO) agreements that delegate claim adjudication to commercial administrators. These administrators increasingly rely on automated "clinical logic engines," "payment integrity tools," and rule-based "edits" supplied by proprietary vendors.

Key characteristics:
• Algorithms run before human review.
• Many denials are issued through combined "bundled edits," making specific reasons invisible.
• Payment reductions and denials may occur without aligning with SPD language.
• Error correction is pushed onto participants, who must appeal without knowing what logic was applied.

Employers typically lack access to:
• the rule sets used;
• audit trails showing whether a human reviewed anything;
• accuracy metrics (false positives);
• the financial incentives behind "savings" programs.

This asymmetry creates fiduciary exposure and systemic pricing inconsistencies.

How Algorithmic Claim Reductions Work

1. First-Pass Payment Edits

These include duplicate claim flags, bundling/unbundling logic, "experimental/investigational" auto-labels, incorrect site-of-service flags, fee-schedule overrides, and downcoding edits. These can

trigger automatic denials before a clinician sees the claim.

2. "Clinical Logic" or "Clinical Validation" Tools

These tools rely on historical utilization patterns, proprietary "clinical correlation" scoring, statistical outlier identification, and automated downcoding. Plans rarely see how these criteria are weighted or validated.

3. AI-Assisted or ML-Enhanced Reviews

Some administrators use machine-learning models that score claims based on predicted overpayment probability, flag codes as "unsupported," route claims to denial pathways, and apply tiered reduction logic. These systems are marketed as "payment integrity" solutions but operate outside SPD obligations.

Observed Systemic Problems

Problem 1: SPD–Algorithm Misalignment

SPDs rarely mirror the internal payment logic. Enrollees appealing denials cannot dispute criteria that are not published.

Problem 2: Delegated Denial Without Clinician Oversight

Many "clinical" denials are algorithmic and not reviewed by a licensed clinician until appeal, if at all.

Problem 3: High False-Positive Rates

Payment integrity algorithms routinely deny claims coded correctly, assume clinical relationships that are not applicable, and override valid modifiers. Appeal success rates in certain categories are often extremely high, indicating systemic error.

Problem 4: Financial Incentives to Deny or Reduce

Vendors and administrators may be compensated based on "savings" generated from denials or reductions. This creates a structural conflict with fiduciary obligations to act in the best interest of plan participants.

Problem 5: Lack of Auditability

Employers cannot see the underlying rule sets, identify which algorithms were applied, access logs of automated versus human actions, or independently verify allowed amounts. This obstructs meaningful oversight.

Public-Interest Implications

Opaque automated claims-processing systems harm families through inappropriate denials and unpredictable costs, unions through higher plan expenses, employers through unrecognized fiduciary risk, and regulators through lack of visibility into algorithmic decision-making in essential benefits.

The growing role of automation in coverage determinations raises urgent questions about fairness, due process, and accountability in health benefits administration.

Proposed Year 1 Research Areas

1. Algorithmic Edit Mapping

Document the most common automated edit categories across administrators.

2. Automated Denial Pattern Analysis
Identify which claim types and services are most frequently affected by AI-assisted tools.

3. SPD–ASA–Algorithm Reconciliation
Compare plan documents against the logic actually used to deny or reprice claims.

4. Appeal Outcome Analysis
Quantify potential false-positive patterns by examining appeal success rates and reversal categories.

5. Transparency Recommendations
Develop policy proposals for disclosure of algorithmic tools, required audit trails, employer access to rule sets, and participant-facing transparency in EOBs.

About the Researcher
Hannah Moore, President of the Cost of Care Project, is a healthcare compliance and pricing analyst with extensive experience reviewing plan documents, SPDs, ASAs, and claims-processing structures across major national administrators. Her work focuses on identifying systemic misalignment, fiduciary risk, and transparency gaps in employer-sponsored health systems.

Call for Collaboration
The Cost of Care Project welcomes collaboration with employers and employer coalitions, unions, researchers, transparency nonprofits, policymakers, and payment integrity watchdogs interested in strengthening healthcare claims integrity and transparency.

For research partnerships or project inquiries, contact: info@costofcareproject.org