
SAG Working Paper Series

WP-SOT-SAG-006

SAG-HC

Structural Authority Constraints in Clinical Operations

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Abstract

Clinical harm frequently originates not from incorrect medical decisions but from structurally non-permitted instantiation of clinical authority. Covering physicians issue binding directives outside specialty alignment. Handoff protocols fail to transfer responsibility to a determinable node. Safety signals are structurally unsurfacable due to hierarchy gradients.

Existing safety frameworks: Swiss Cheese, Crew Resource Management (CRM), Root Cause Analysis (RCA), and duty hour regulation: intervene after authority has formed and begun producing effects. None formalize pre-decisional structural constraints on whether clinical authority should have instantiated at all.

This paper instantiates the Structural Authority Gate within clinical operations, operationalizes invariant measurement protocols, proposes provisional threshold calibration structures, and contrasts SAG-HC with prevailing clinical safety frameworks. SAG-HC does not replace existing safety science. It occupies a

structural layer those frameworks do not address: authority formation permissibility.

1. Introduction and Scope

1.1 The Clinical Authority Problem

Clinical harm is typically analyzed through two lenses: clinical error (incorrect decision under legitimate authority) and malpractice (negligent exercise of authority). Both assume authority was legitimately formed.

SAG-HC primary question

Was clinical authority structurally permitted to instantiate?

Clinical authority forms continuously in healthcare. When it forms under degraded structural conditions, harm may emerge independent of competence, effort, or intent. The failure is not in what was decided, but in the structural configuration that permitted the decision to bear binding force.

1.2 Scope

SAG-HC governs operational clinical authority: discretionary directives whose downstream effects are binding within patient care. This includes: order issuance and medication directives; procedure authorization; handoff responsibility transfer; consultation activation or denial; scope-of-practice activation.

SAG-HC does not govern healthcare policy, insurance authorization, administrative budgeting, or legislative design.

1.3 Relationship to SOT-001 / 002 / 003

SAG-HC inherits the six structural invariants (SOT-001), the gate aggregation rule and non-compensability principle, measurement and threshold derivation requirements (SOT-002), and the Invariant Action Constraint (SOT-003). This document provides clinical operationalization, measurement mapping, and threshold anchors.

2. Clinical Authority Under SAG

2.1 Operational Authority in Clinical Context

Clinical authority is the capacity to issue discretionary clinical directives whose effects are binding and propagate through the care delivery system. This includes: medication orders; procedure authorizations; discharge decisions; consultation activations. Mechanical documentation reports state. Discretionary directives alter state.

2.2 Advisory-to-Binding Threshold (α_b)

Clinical hierarchy often operates through advisory language that functions as binding authority. An attending's "suggestion" to a resident produces consistent compliance due to structural power dynamics.

Under SAG-HC: if nominally advisory directives produce compliance patterns exceeding α_b , they constitute binding authority and must satisfy the Gate. This distinguishes structured supervision preserving invariant integrity from informal authority bypassing structural verification. CRM addresses how authority communicates. SAG-HC addresses whether authority was structurally permitted to form.

3. Clinical Invariant Operationalization

3.1 Verification Integrity

Clinical claims must be checkable against reproducible physiological evidence appropriate to domain cycle length.

Measurement Protocol

- Confirmatory testing rate when clinically indicated
- Diagnostic reversal rate within defined window
- Independent concordance (imaging/pathology)
- Protocol adherence for high-risk determinations

Threshold ($\square_v$)

Emergency medicine: $\leq 5\%$ high-risk decisions without confirmatory step | Inpatient medicine: $\leq 3\%$ | Elective surgery: $\leq 2\%$

Anchors provisional; subject to empirical calibration per SOT-002.

3.2 Record Persistence

Institutional memory must resist untraceable alteration.

Measurement Protocol

- Untraceable modification rate (zero tolerance)
 - Copy-forward deviation from baseline
 - Amendment timestamp discrepancy
 - Audit trail completeness
- Any untraceable modification $\square$ Absent.

3.3 Responsibility Singularity

Decision authority must terminate in a determinable accountable node at all times.

Measurement Protocol

- Explicit attending-of-record documentation
- Handoff completion compliance
- Responsibility ambiguity interval
- Parallel directive issuance

Threshold ($\square_r$)

Emergency: ≤ 5 minutes | Inpatient: ≤ 10 minutes | Chronic: ≤ 24 hours.

Exceedance $\rightarrow$ Absent.

3.4 Temporal Coherence

Order, action, and documentation must align within domain resolution.

Measurement Protocol

- Timestamp discrepancy • Medication reconciliation latency
- Order-to-execution delay

Threshold ($\square_t$)

Emergency: ≤ 15 minutes | Inpatient: ≤ 60 minutes | Chronic: ≤ 24 hours

3.5 Jurisdictional Correspondence

Authority scope must match clinical complexity at directive issuance.

Measurement Protocol

- Out-of-specialty order frequency • Consult activation latency • Credential verification at directive issuance
- Zero tolerance for unauthorized domain penetration without consultation.

3.6 Contradiction Exposure Capacity

Contradictory signals must surface and reach resolution without suppression.

Measurement Protocol

- Near-miss reporting trends • Escalation-to-resolution ratio • Retaliation frequency • Anonymous channel utilization

Threshold triggers

- Suppression events $\square$ zero tolerance • Reporting collapse beyond baseline deviation $\square$ Degraded • Escalation-to-resolution below institutional floor $\square$ Degraded A system that collects reports without documented resolution is structurally degraded.

4. Threshold Configuration

4.1 Domain Cycle Alignment

Domain $\square_v$ (Verification) $\square_t$ (Temporal) $\square_r$ (Responsibility)

Emergency $\leq 5\% \leq 15 \text{ min} \leq 5 \text{ min}$ Inpatient $\leq 3\% \leq 60 \text{ min} \leq 10 \text{ min}$ Chronic $\leq 2\% \leq 24 \text{ hr} \leq 24 \text{ hr}$

Thresholds derive from domain physics, professional standards, and institutional baseline data. Modification requires Gate = Present.

5. Worked Failure Analysis

5.1 Composite Sentinel Pattern

Night coverage case: hospitalist cross-covering cardiology patient. Gate evaluation: five invariants Degraded, one Present, none Absent $\rightarrow$ Gate = Indeterminate.

Binding directive issued under degraded conditions.

Required action: IAC transition and invariant restoration. Structural diagnosis: authority instantiated under degraded structural configuration.

5.2 Libby Zion Case

Authority configuration: junior physician, limited on-site supervision. Responsibility Singularity = Absent. All other invariants Degraded. Gate = Absent.

Diagnostic Differentiation

Composite case $\rightarrow$ Indeterminate | Zion case $\rightarrow$ Absent. Same gate. Different configuration. Different output. SAG-HC functions as diagnostic instrument, not binary stamp.

5.3 IAC Counterfactual (Zion)

With Gate = Absent, permissible actions:

- Maintain supportive care • Restore Responsibility Singularity via attending presence • Escalate supervisory structure • Preserve diagnostic signal

Discretionary pharmacologic escalation prohibited until invariant restoration.

5.4 Regulatory Reframe

Duty hour reform addressed load. SAG-HC identifies structural responsibility failure as upstream cause.

Testable prediction

If authority-formation failures persist despite schedule compliance, structural configuration is degraded.

6. Structural Refusal

Refusal under degraded invariant conditions constitutes structural compliance. Must cite the failing invariant, observable metric, and threshold breach. Negative institutional response to structurally compliant refusal degrades invariant structure.

7. Clinical IAC

When Gate $\neq$ Present:

Permitted

- Stabilization • Containment • Signal preservation • Responsibility restoration

Prohibited

- New discretionary treatment escalation • Authority expansion

Prolonged suspension beyond domain tolerance Ω_i requires redesign.

8. Contrast with Existing Safety Frameworks

Framework Focus Limitation SAG-HC Contribution

Swiss Cheese Barrier failure No authority formation Identifies illegitimate authority layer as upstream cause CRM Communication Authority exercise only Structural gate on authority formation RCA Retrospective No pre-decisional Pre-action diagnostic layer analysis constraint Duty Hour Load reduction Does not ensure Structural configuration Reform Responsibility Singularity correction Credentialing Jurisdictional Periodic, not real-time Six-invariant gate at authority check instantiation

9. Limitations

- Threshold values provisional
- Suppression detection indirect
- π_b politically sensitive
- Prolonged IAC pathology
- Cascading refusal requires structured reassignment protocol

10. Conclusion

Clinical authority is not structurally permitted merely because credentialing exists or schedules comply.

Authority may instantiate only where invariant structural conditions support sustained correspondence between clinical action and patient reality.

Where invariants fail, authority is prohibited. Where authority is prohibited, action is constrained.

Constraint precedes command.