RISK ASSESSMENT BRIEF · HEALTHCARE

From Vulnerability Score to Operational Readiness

How ALIGN Applies the Healthcare Hazard Vulnerability Analysis as a Complete Preparedness Cycle

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The Hazard Vulnerability Analysis (HVA) is the foundational risk assessment tool for healthcare emergency preparedness. Required by the Joint Commission (EC.02.01.01) and recommended by the Centers for Medicare & Medicaid Services as part of the Emergency Preparedness Rule's risk assessment mandate, the HVA provides a systematic method for identifying and prioritizing the hazards, threats, and events that pose the greatest risk to a

healthcare organization's ability to care for patients and sustain operations during an emergency.

Most healthcare HVAs produce a priority matrix. Very few produce a program.

The HVA identifies which hazards are most likely to occur, most severe in impact, and most challenging given the organization's current preparedness level. These findings should directly drive Emergency Operations Plan updates, resource gap remediation, exercise scenario selection, and coalition coordination priorities. In practice, most HVAs are completed once a year to satisfy review requirements, then filed away until the next cycle.

ALIGN treats the HVA as the foundation of a complete preparedness cycle. HVA findings drive planning priorities, coalition integration, exercise design, and continuous improvement, transforming the compliance deliverable into the program driver it was always designed to be.

The Healthcare HVA: What It Requires and What It Produces

The HVA approach, most commonly applied using the Kaiser Permanente model adapted for healthcare, evaluates each hazard across three dimensions that together produce a risk priority score:

- Probability — The likelihood that the hazard will occur based on historical data, geographic vulnerability, and organizational experience, scored from 0 (not applicable) to 3 (high likelihood)

- **Severity of Impact** — The potential impact on human life and health, property and facilities, and business operations, each scored to produce a weighted severity composite
- **Preparedness Level** — The organization's current ability to respond to the hazard, including plans, training, equipment, and experience; this dimension is the direct measure of the gap ALIGN is designed to close
- **Risk Priority Score** — Probability x Mean Severity x (1 − Preparedness) produces a composite score that ranks hazards by the combination of likelihood, consequence, and readiness gap

Joint Commission EC.02.01.01 requires the HVA to inform the Emergency Operations Plan. CMS EP Rule requires the risk assessment to drive the emergency program. ALIGN ensures the HVA actually performs the function both standards require of it.

The ALIGN – HVA Crosswalk

ALIGN PHASE	HVA REQUIREMENT / STEP	HOW ALIGN DELIVERS
A — Assess Diagnose	HVA: Hazard Identification; Probability Scoring; Severity Assessment; Preparedness Gap Measurement; Risk Priority Ranking	Hazard identification, probability and severity scoring, and preparedness gap measurement constitute the ALIGN Assess phase's risk component. ALIGN extends the HVA by adding decision architecture mapping, evaluating not just which hazards pose the greatest risk, but how the organization's current decision systems would function under the demands of each high-priority HVA scenario.

ALIGN PHASE	HVA REQUIREMENT / STEP	HOW ALIGN DELIVERS
L — Link Coordinate	HVA-Informed Coalition Priorities; CMS Community Integration; ESF-8 Resource Mapping; Healthcare Coalition Hazard Planning	Mapping HVA high-priority hazards to healthcare coalition capabilities and ESF-8 resources applies the CMS community integration requirement using HVA findings as the priority driver, ensuring that coalition coordination plans address the specific hazards HVA identified as most likely and least prepared.
I — Integrate Build	HVA-Driven EOP Updates; Joint Commission EM.02.01.01; CMS Policies and Procedures; HIPAA Emergency Mode Plans; Resource Gap Remediation	Updating Emergency Operations Plan annexes and HIPAA contingency plans based directly on HVA risk priority rankings, ensuring that planning resources are concentrated on the hazards HVA identified as most consequential and that plan updates address the specific preparedness gaps HVA scoring revealed.
G — Generate Stress Test	HVA Scenario-Based Exercises; Joint Commission EM.03.01.01; CMS Exercise Requirements;	Building exercise scenarios from HVA high-priority hazards and scoring performance against HVA-established preparedness gaps applies

ALIGN PHASE	HVA REQUIREMENT / STEP	HOW ALIGN DELIVERS
	Preparedness Gap Validation	Joint Commission and CMS exercise mandates using HVA findings as the scenario driver. A successful ALIGN exercise answers: has the organization's preparedness level for this HVA-priority hazard actually improved since the last assessment?
N — Normalize Sustain	Annual HVA Update Cycle; Joint Commission Annual Program Review; CMS Annual EP Review; Continuous Preparedness Improvement	Feeding exercise findings and program changes back into the next HVA cycle closes the preparedness loop, ensuring that improvements in preparedness scores, changes in hazard probability, and new coalition resources are reflected in the updated HVA rather than treated as disconnected program activities.

Five Ways ALIGN Transforms the HVA from Compliance Deliverable to Program Driver

1. HVA as Planning Architecture Driver

The Joint Commission requires that the HVA inform the Emergency Operations Plan. In most healthcare organizations, 'inform' means the HVA is referenced in the EOP rather than driving specific plan updates. ALIGN treats HVA risk priority rankings as EOP design inputs: each high-priority hazard with a significant preparedness gap generates a specific plan annex review, resource gap remediation action, or coalition coordination update.

2. Decision Architecture Alongside Hazard Scoring

The HVA measures the organization's preparedness for specific hazards. ALIGN's Assess phase measures how the organization's decision architecture would actually function under those hazard scenarios, evaluating whether incident command activation, clinical-administrative coordination, and communication systems would perform under the operational demands of the HVA's highest-priority events.

3. Coalition Resource Integration

HVA high-priority hazards with low preparedness scores often reflect resource gaps that individual organizations cannot close alone. ALIGN's Link phase maps these HVA-identified gaps against healthcare coalition resources and ESF-8 capabilities, building coordination plans that access community resources rather than treating gaps as solely the organization's problem to solve.

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4. HVA-Calibrated Exercise Scenarios

HSEEP requires exercises to be based on the organization's actual risk environment. ALIGN uses HVA risk priority rankings to select exercise scenarios, prioritizing the hazards that are both most likely and most challenging given current preparedness levels.

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5. Preparedness Score Improvement Tracking

ALIGN's Normalize phase tracks preparedness score changes across HVA cycles, providing healthcare leaders with a longitudinal view of program improvement that connects HVA findings, exercise outcomes, plan updates, and resource investments into a coherent picture of capability development over time.

Conclusion

The HVA is the right tool. Most healthcare organizations are not using it to its potential, completing the matrix, filing the results, and returning to the next cycle without consistently translating findings into program improvement.

ALIGN treats the HVA as the foundation of a complete preparedness cycle. The risk assessment becomes the program driver. The preparedness gap becomes the planning priority. And each subsequent ALIGN phase builds the operational capability the HVA measures, so the next assessment shows a score that reflects genuine improvement, not the same gaps with updated documentation.

ABOUT SENTINEL RESILIENCE PARTNERS

Sentinel Resilience Partners provides Hazard Vulnerability Analysis facilitation, HVA-driven EOP development, healthcare coalition integration, and HSEEP-aligned exercise programs for health systems and healthcare coalitions. ALIGN engagements are structured at four tiers: Audit, Build, Validate, and Sustain.

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