



A PRAXISONE PERSPECTIVE

Signals of Safety

How everyday data becomes early warning in behavioral healthcare — responsibly, and with human judgment in control.

Executive summary

Every behavioral health environment is already generating the signals of safety — the early indicators that risk is rising for a patient, a unit, or a member of staff. The difficulty has never been a shortage of data. It is that the data arrives fragmented, noisy, and scattered across systems and shifts, so the signals that matter are buried among the ones that don't. Adding more alarms only makes this worse: in general healthcare, between 72% and 99% of clinical alarms are false or require no action, and the fatigue that follows causes clinicians to tune out — sometimes with fatal consequences. This paper explains what a safety signal actually is, how fragmented data becomes reliable early warning through a disciplined pipeline, and the principles that keep such a system responsible — *signals, not surveillance*, with a licensed human in control of every decision.

1 What we mean by a “signal”

In behavioral health, a signal is any observable indicator that risk is changing: a safety observation that was due and missed; a risk-assessment score trending upward; a new incident on the unit; a medication event; a documentation gap; a sudden change in a patient's behavior; a staffing level that has dropped below what the acuity demands.

None of these is exotic, and each is already recorded somewhere. Individually, most are unremarkable. Assembled, and read in context, they are the difference between seeing a crisis approach and reviewing it afterward. The raw material of foresight is not missing. It is scattered.

2 The trap: more data is not the answer

Faced with risk, the instinct is to monitor more and alarm louder. Healthcare has run that experiment at scale, and the results are a warning rather than a model.

72%-99%

of clinical alarms are false or require no clinical intervention. A single hospital unit can generate tens of thousands of alarms in under three weeks — and the resulting alarm fatigue has been linked to hundreds of patient deaths reported to the FDA.

Agency for Healthcare Research and Quality, Making Healthcare Safer III, 2020

The mechanism is simple and dangerous: when everything alarms, nothing does. Clinicians become desensitized to a constant stream of nuisance alerts and begin to tune them out — and in doing so, they risk missing the rare alert that was real. More volume does not produce more safety. Past a point, it produces less.

The lesson for behavioral health is decisive. A safety-signal system that simply adds noise will make safety worse, not better. The goal is not more signal. It is the *right* signal, in context, at the right moment — and markedly less noise.

3 From data to foresight: a disciplined pipeline

Turning raw data into a signal a clinician can trust is a sequence, not a switch. PraxisOne describes that sequence in five stages — **Data → Context → Risk → Action → Evidence** — but the discipline of the sequence matters more than the labels.

Data — unify the fragments. Behavioral health data is among the most fragmented in medicine, split across the Electronic Medical Record and many other systems and historically walled off further by 42 CFR Part 2. Crisis clinicians routinely meet patients with almost no history in front of them. The first step is simply bringing the streams into one place — something recent interoperability rules increasingly require for treatment, not merely permit.

Context — a number is not yet a signal. The same score, the same missed check, the same change means different things for different patients, units, and moments. Context — who, where, when, and compared to what — is what converts a data point into a signal. Without it, you have only a threshold and a guess.

Risk — prioritize, don't flood. The purpose of scoring risk is not to label a patient; it is to rank attention, so the most important thing rises to the top and the rest recedes. A responsible system surfaces what needs attention now and stays quiet about what does not — the direct antidote to Section 2.

Action — a signal that goes nowhere is just information. Foresight becomes safety only when a signal carries a recommended next step, a named owner, and a time — and a human decides whether and how to act. This is the closed loop that separates a warning from a dashboard.

Evidence — record everything. Every signal, action, owner, and timestamp is captured. This is what makes the system auditable, teachable, and defensible — and what lets an organization learn from near-misses instead of only from tragedies.

4 Proven in medicine, underused in behavioral health

The idea that measurable signals can warn of deterioration before it becomes a crisis is not novel. In medical settings, early-warning scores are in routine use, and as predictors they work.

Up to 48 hours

In hospitals, early-warning scores can identify patients at risk of cardiac arrest or death up to two days in advance (AUROC 0.74–0.93) — but the evidence is equally clear that a score only prevents harm if a person acts on it.

Smith et al., Annals of the American Thoracic Society, 2014

Two honest caveats make the case rather than weaken it. First, behavioral health's signals are different in kind — more behavioral and operational than vital-sign — and they remain largely unwatched in the spaces between retrospective reviews. Second, and more important: prediction alone does not improve outcomes. The research on early-warning scores is consistent that the score is only as valuable as the human response it triggers. A signal changes nothing until someone acts on it — which is exactly why foresight must be a closed loop with a person inside it, not a model that predicts and stops.

5 Responsible by design: signals, not surveillance

For behavioral health, how a signal system behaves matters as much as what it detects. The line between a safety layer and a surveillance system is not vague — it is a set of explicit commitments:

- **Human oversight.** Signals inform; licensed clinicians and administrators decide. The system never takes an action on a patient by itself.
- **Purpose limitation.** Signals exist to protect patients and support staff — not to monitor employees for its own sake. A rising-risk alert about a unit is a call for help, not a performance review.
- **Privacy and consent.** HIPAA and 42 CFR Part 2 are respected; sensitive data is handled with the segregation and consent the law and the patient require; protected health information is not used to train shared models.
- **Explainability.** Every signal shows its reasoning — the contributing factors behind it — so a clinician can weigh it rather than simply obey it.
- **Auditability and governance.** The system is overseen, reviewed, and correctable, with a record that can be examined.

A safety-signal system built on these commitments earns trust. One built without them forfeits it — however accurate it may be.

6 What good looks like

Drawn together, the design principles of a responsible safety-signal system are few and demanding:

- Reduce noise before adding signal.
- Give every data point context before calling it a risk.
- Prioritize ruthlessly — surface what needs attention now.
- Attach every signal to an action, an owner, and a time.
- Keep a licensed human in control of every decision.
- Make every signal explainable and every action auditable.

7 The signals are already here

The signals of safety are already in the building — in the observations, the assessments, the incidents, the schedules, and the small changes that precede the large ones. The task is not to generate more of them. It is to hear the right ones, in context, in time — and to put a person in a position to act while it still matters.

Behavioral health has spent decades reviewing its signals in hindsight. The tools now exist to listen to them as they happen — responsibly, and without turning care into surveillance. That is the whole of the shift: from reacting to what happened, to acting on what is happening.

About PraxisOne

PraxisOne is the operating intelligence layer for behavioral healthcare. We connect the clinical, operational, and behavioral signals that already exist across an organization's environment, identify what requires attention, and turn intelligence into accountable, auditable action — with human oversight at every step. Our platform, Haleux, is delivered through Haleux Care, which brings governance to the front line of patient care and documentation, and Haleux Assure, which operationalizes QAPI as a continuous, evidence-backed discipline.

To see how a responsible safety-signal layer could work in your environment, visit praxisoneinc.com or request a demonstration.

References

1. Agency for Healthcare Research and Quality (AHRQ). Making Healthcare Safer III: A Critical Analysis of Existing and Emerging Patient Safety Practices — Alarm/Alert Fatigue. 2020.
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