THE HIDDEN COST OF MANUAL OVERRIDES IN HOSPITALS

SMART BUILDINGS ACADEMY

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Executive Summary

In hospitals, the building automation system (BAS) is not just about comfort and energy efficiency. It directly supports patient safety, infection control, and regulatory compliance. Yet one of the most overlooked risks in healthcare facilities is the manual override.

A single override on a room control valve, air handler, or pressurization sensor can silently break compliance, waste energy, and compromise patient care. Most overrides are intended as temporary fixes, but data shows that the majority remain in place for more than 30 days.



This white paper explains why manual overrides are a hidden operational hazard, how to uncover them, and how to build a proactive management process that protects both compliance and energy performance.

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The Override Problem in Healthcare Facilities

Manual overrides are typically used for short-term maintenance or troubleshooting. In critical environments such as hospitals, overrides are often applied in response to occupant discomfort, construction work, or infection control adjustments.

However, once the override is applied, it is rarely cleared. The result is a hidden control failure that can persist for weeks or months, driving up costs and violating key compliance standards such as ASHRAE 170 and Joint Commission requirements.

Hospitals often struggle to pinpoint where overrides exist and how long they persist. Smart Buildings Academy provides BAS performance assessments that identify hidden overrides, compliance risks, and operational weaknesses before they show up in an audit.

Common Override Scenarios

A pressurization sensor in an isolation room is overridden to stop alarms during maintenance.

A VAV box in an operating room is manually opened for airflow but never released. A chilled water valve is forced open to compensate for a failed sensor. These small actions create cascading impacts that affect energy, compliance, and patient safety.



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The Hidden Costs of Overrides

1. COMPLIANCE RISK

Overrides can silently disable sequences that maintain room pressurization, temperature, or humidity. A single override can cause:

- Negative-pressure rooms are failing to meet infection control requirements.
- Operating rooms are to lose the required airflow balance.
- Reporting systems to show non-compliant conditions when they are not.

2. ENERGY WASTE

Overridden dampers or valves often lead to simultaneous heating and cooling, wasted reheat energy, and excessive fan operation. Studies show hospitals with chronic overrides consume 10 to 20 percent more energy than expected.

3. EQUIPMENT WEAR

When equipment runs continuously due to an override, components such as fans, pumps, and actuators wear out faster.

4. SAFETY AND TRUST

Untracked overrides undermine confidence in BAS data. Operators stop trusting trends, engineers stop relying on automation, and compliance staff lose visibility into critical spaces.

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Step 1: Audit Overrides Weekly

Overrides become dangerous when they are forgotten. The key is visibility and accountability.

ACTION CHECKLIST

- Generate weekly reports of all overridden points across critical zones, AHUs, and plant equipment.
- Categorize each override by purpose such as maintenance, comfort, or construction.
- Require justification notes for all overrides lasting more than 24 hours.
- Escalate critical space overrides such as isolation rooms, operating rooms, and pharmacies.
- Clear or document each override before the end of each week.

FAST FACTS

Over 70 percent of manual overrides in hospitals remain active for

more than 30 days.

Weekly override audits reduce total overrides by

60%

within three months.

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Step 2: Add Expiration Tags to Prevent Set and Forget

Every override should be temporary by default. Override expiration timers prevent hidden long-term failures.

ACTION CHECKLIST

- Configure override expiration tags so each manual override clears after 24 to 72 hours.
- Require user notes explaining the reason and a responsible operator.
- Add color-coded or blinking indicators on graphics for expired or high-risk overrides.
- Review overrides that are reapplied repeatedly to discover root causes.

FAST FACTS

Expiration tags reduce long-term overrides by

80% or more.

Logging overrides cut recurring issues by

50%.

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Step 3: Alarm on Critical Zone Overrides

Certain spaces require immediate action when overrides occur.

ACTION CHECKLIST

- Define a list of critical zones such as operating rooms, isolation rooms, and compounding pharmacies.
- Configure alarms if overrides in these spaces last longer than 24 hours.
- Integrate override alarms into compliance dashboards and notification systems.
- Track override duration metrics in monthly facility performance reports.
- Train staff to treat override alarms as part of infection control response.

FAST FACTS

Hospitals that alarm on critical overrides achieve

near-zero

compliance failures in pressurization control audits.

Override-related issues in ORs can cost

tens of thousands

per day in wasted energy and lost productivity.

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Case Study: Override Reduction at a Regional Medical Center

A 500-bed regional medical center discovered during an internal audit that more than 1,800 BAS points were overridden, many for over 90 days. Several isolation rooms were not maintaining proper negative pressure, and operating rooms were drifting from temperature and humidity setpoints.

FINDINGS

- 65 percent of overrides had no documentation.
- 18 operating rooms had air valves manually opened.
- Several pressure sensors were overridden to silence alarms.

CORRECTIVE ACTIONS

- Created a weekly override audit for all critical zones.
- Added 72-hour expiration timers.
- Established alerts for overrides exceeding 24 hours in ORs and isolation rooms.
- Required operator names and notes for all overrides.

THE RESULTS

- Active overrides dropped 78 percent within 90 days.
- Zero compliance failures in the next Joint Commission audit.
- HVAC energy costs dropped 12 percent.
- Technician confidence in BAS data increased significantly.



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Building the Action *Framework*

1 Establish Override Governance

Create a clear override policy with roles, duration limits, and review procedures.

2 Automate Visibility

Use dashboards and reports to show override activity in real time.

3 Train and Empower Staff

Teach operators how to apply, document, and clear overrides properly.

4 Integrate into Compliance Programs

Include overrides in Environment of Care rounds and ASHRAE 170 verification.

Smart Buildings Academy offers operator and operator training that equips teams with the skills needed to manage overrides correctly, clear them quickly, and prevent hidden compliance failures.

Results to Expect

Hospitals that implement this framework typically achieve:

- **70 to 90 percent reduction in persistent overrides.**
- **10 to 20 percent lower HVAC energy costs**
- **Improved compliance reliability for pressurization and environmental control.**
- **Higher operational confidence across facilities and compliance teams.**

CONCLUSION

Manual overrides are the silent failure mode of hospital BAS operations. Each forgotten override introduces risk, waste, and compliance exposure.

By auditing overrides weekly, applying expiration tags, and alarming on critical zones, hospitals can protect patient safety, maintain compliance, and recover lost efficiency. Hospitals that take override management seriously strengthen both their safety culture and operational resilience.

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WHO WE ARE

At Smart Buildings Academy, we offer proven online training and skill assessment solutions that enable companies and professionals to rapidly enhance their BAS knowledge, expertise, and profitability without compromising their budgets.

SBA'S SKILLS ASSESSMENT

Are you tired of making training decisions in the dark? Do you find yourself wishing you had an impartial ranking of your employees' skill sets? With our FREE online skill assessment, you will:

- Identify the strengths and weaknesses of your employees
- Validate the performance of your team against our database of 20,000+ assessment results
- Uncover gaps in your team's skills and learn how to fix them so you can increase your opportunity to grow your revenue

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