

WHITEPAPER



The Foundation for Supporting Critical Operations

Federal Healthcare Facilities



Federal medical facilities hold a critical place in our country's healthcare system. These facilities treat our active duty and veteran populations and are among the leading-edge research centers in the world. Providing that level of care in the face of budgetary pressures requires reducing costs without sacrificing quality. Capital investments in environmental management are often the last priority, pushing the core elements of those systems well beyond their intended service life.



Mark O'Reilly, Federal Leader, Trane



Executive Summary

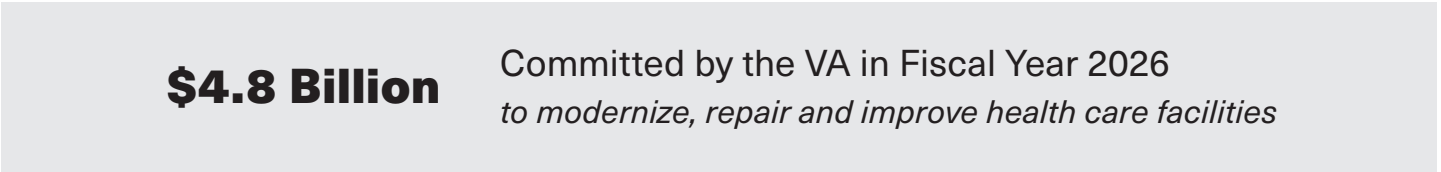
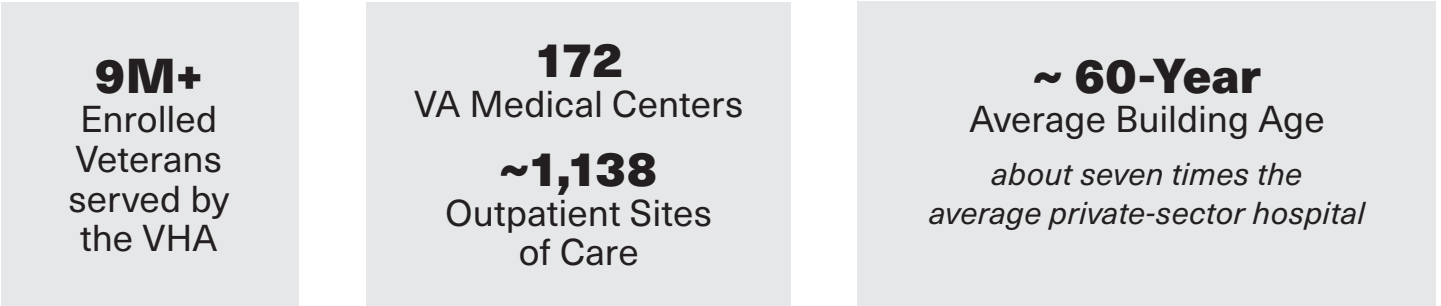
Federal healthcare operates at a scale few organizations can match. The Veterans Health Administration (VHA) alone serves more than 9 million enrolled veterans through 172 medical centers and more than 1,100 outpatient care sites, making it one of the largest integrated health systems in the United States.¹

Fulfilling the mission of caring for those who are currently serving or have served our country depends on physical infrastructure that is often decades older than its private-sector counterparts. Veterans Affairs (VA) buildings average roughly 60 years old, about **seven times** the age of the average private-sector hospital. Meanwhile, 69% of the department's main hospitals are at least 50 years old.²

Modernizing this infrastructure is more than a maintenance challenge; it is a strategic imperative. Aging systems can continue operating for years, but reliability declines over time, the risk of disruption increases, and emergency replacements can consume already limited capital. For federal leaders, the issue is not simply how to keep facilities running, but how to prioritize investments across large portfolios in a way that protects continuity of care, strengthens operational readiness, and supports responsible stewardship of public funds.

Connected technology, secure cloud solutions and disciplined lifecycle planning can help meet that challenge. Together, they give federal healthcare leaders greater visibility into asset conditions, building performance, and infrastructure risk across facilities, helping them shift from reactive maintenance to more proactive, enterprise-wide decision-making.

Federal Healthcare by the Numbers



Federal Healthcare is at a Crossroads

Federal healthcare facilities sit inside large national hierarchies where capital planning happens far above the facility level. Local engineering leaders often hold deep knowledge of their buildings but little authority over the long-term investments that keep them running.

Most federal healthcare facilities fall under one of two departments: the Department of Veterans Affairs or the Defense Health Agency within the Department of Defense. These facilities sit at the bottom of large, nationwide structures, often managed on a regional or enterprise basis. As a result, decision-making can be slow, acquisition and procurement are often shaped by policy and legal requirements, and local authorities may have limited control over long-term capital investment.

Aging equipment can run for years without stopping, but when it finally does, restarting older systems may be slow and uncertain. Those structural realities are compounded by growing demand and competing priorities. The

PACT Act has expanded veteran eligibility, while expectations around patient experience, cybersecurity, and sustainability continue to rise. At the same time, limited budgets force hard choices about where funding can have the greatest impact. In FY 2024, the Veterans Health Administration deferred more than \$600 million in medical equipment purchases to remain within budget.³ When funding for critical clinical equipment is constrained, building infrastructure may be even harder to prioritize.

The result is a familiar but increasingly fragile pattern: facilities continue relying on aging systems that may operate beyond their intended service life, even as maintenance becomes more complex, recovery from failure becomes less certain, and the risk of disruption grows. What may appear manageable at the site level can represent a significant enterprise-wide risk when repeated across hundreds of facilities.

Facility Resiliency Starts with Data

In federal healthcare, even minor disruptions can affect patient care. Despite this, many sites still manage systems reactively, responding to failures after they occur rather than anticipating risk. Across an enterprise of hundreds of facilities, that approach leaves national decision-makers without a clear, current picture of where the greatest operational risks exist.

Strengthening physical resiliency starts with connected, data-informed facility management. Smart building technology unifies systems such as HVAC, building automation, lighting, and Internet of Things (IoT)-enabled sensors, giving facilities teams greater visibility into how each building performs. Analytics can help identify abnormal conditions and early signs of failure so teams can intervene before an outage affects an operating room, a lab, or a pharmacy. Digital twin modeling adds another layer of foresight, allowing teams to test changes in a virtual replica of a facility before adjusting in a live clinical environment.

At the enterprise level, connected infrastructure provides a single source of truth. Agency-wide dashboards, standardized deployment, and unified monitoring allow leaders to compare real-time conditions across facilities, help identify at-risk assets, and direct resources where they will have the greatest impact. Connected building



platforms and modern building automation systems can help leadership gain visibility across facilities and make more informed operational decisions. Trane's Tracer® Ensemble® platform and Tracer® SC+ technologies are examples of solutions designed to support this approach.

Smart building technology can also help address workforce constraints. With staffing shortages affecting facilities and engineering teams nationwide, automation and analytics can help direct limited resources to the most critical issues, enabling skilled team members to focus where their expertise matters most.

The Role of Governance in Modernization

Modernizing federal healthcare infrastructure is not only a facilities challenge; it is a governance challenge. On-site engineering teams have often extended the life of legacy systems through reactive maintenance and deep operational knowledge. But that local success can also mask broader systemic risk from central planners responsible for capital allocation across an enterprise.

Effective governance helps close that gap. When leaders can compare asset health, operational performance and infrastructure risk across multiple facilities, they can move from reactive crisis response to more proactive lifecycle planning. That visibility supports more consistent prioritization of capital investments and helps ensure limited funds are directed to the assets and systems most critical to continuity of care.



This governance structure becomes even more important as authority and accountability evolve within the Veterans Health Administration. As decision-making moves closer to the facility level, local directors and national planners need access to consistent, trustworthy data. Standardized governance helps ensure that localized decisions remain aligned with broader agency priorities, available funding and long-term modernization roadmaps.

FedRAMP and Secure Cloud Enablement

Enterprise-wide visibility depends on connecting facilities to the cloud, and in federal environments that path runs through the Federal Risk and Authorization Management Program (FedRAMP). FedRAMP is the government-wide standard for securely authorizing cloud products and services for federal use. For any cloud-based building technology, FedRAMP is the gateway.

Cloud connectivity can also support predictive maintenance, advanced analytics, and enterprise-wide performance monitoring capabilities that may otherwise be difficult to implement at scale.

Secure cloud-based building technology can help reduce the technical burden of maintaining insight into equipment performance while supporting real-time visibility across portfolios. For federal healthcare leaders, that means a stronger foundation for more informed planning, risk identification, and operational decision-making.

Trane is working toward FedRAMP-Ready status for Trane® Cloud, its secure cloud platform for building data and applications.

Designed to meet federal security expectations, it will provide:

- ✓ **Centralized visibility into capital assets across sites**
- ✓ **Simpler navigation to help reduce the time and effort required to find critical information**
- ✓ **More consistent, real-time building and system data to support better decision-making**



Budget Stewardship & Lifecycle Planning

Unlike commercial healthcare organizations, where infrastructure investments may be evaluated through profitability metrics, federal healthcare organizations must focus on risk reduction, operational needs, long-term asset performance, and responsible stewardship of taxpayer resources.

Federal decision-makers must be able to look across their facilities to see where the biggest risks to patient care exist, so that the limited dollars available can be efficiently spent. The best way to provide this enterprise-level view is a system connected to all facilities and capable of providing in-depth assessment of the health, lifespan and redundancy of individual assets and plants.



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This reality makes lifecycle planning increasingly important. The VA reported more than \$18 billion in deferred maintenance and repairs in fiscal year 2025, citing maintenance budgets that have not kept pace with its growing portfolio and inflation as one factor behind the increase⁴. Despite the increase, capital remains finite. The advance-appropriations cycle that funds VA medical care, often viewed as a constraint, can be used as a strategic planning tool to help allocate dollars where they will make the most impact.

Flexible funding and procurement mechanisms can also help stretch available dollars further. Energy-as-a-service and performance contracting can align well with federal

budget structures, helping enable facility improvements without large upfront investments. These models can help deliver more predictable operating costs while preserving capital for clinical priorities.

Deferring infrastructure investment may increase operational costs over time while allowing risk to grow. As systems age, unexpected failures become more likely, potentially disrupting operations and requiring expensive emergency replacements that may have been avoided through planned lifecycle investment. Lifecycle cost framing helps turn budget stewardship from a reactive scramble into a more proactive discipline.

Technology and AI as Mission Enablers

Digital tools and artificial intelligence can help federal healthcare organizations make faster, more informed decisions about facility operations. Rather than relying only on periodic or manual assessments, leaders can use continuous data collection and advanced analytics to identify risk earlier, improve planning, and better target limited resources.

Predictive maintenance is especially valuable in high-acuity clinical spaces such as operating rooms, labs and critical care units, where an unplanned outage can jeopardize patient care and disrupt facility operations. Continuous monitoring also helps facilities improve over time instead of operating on a set-it-and-forget-it basis. Systems can be adjusted as conditions change, helping strengthen reliability, support compliance reporting, and give facilities, finance, and leadership a more transparent view of performance.

Federal healthcare organizations must also evaluate technology through a different lens than many commercial healthcare providers.

“Smart infrastructure for government buyers needs to be secure, reliable and capable of long-term upgrade over the lifespan of the equipment. It must be interoperable with other brands to help navigate compliance with Federal Acquisition Regulation (FAR) and Unified Facilities Criteria (UFC) guidelines,” said O'Reilly.

These principles of secure, reliable, and connected infrastructure have already delivered measurable results across healthcare. Healthcare organizations are using connected infrastructure and energy strategies to help reduce disruption and strengthen resilience. At Munson Medical Center, in Traverse City, MI, an on-site cogeneration system (also known as combined heat and power) gave the hospital its own reliable source of power, strengthening resilience during outages and reducing dependence on the grid⁵.



Smart infrastructure provides real time, objective insight into asset operations. It allows for deep dives as well as high-level review. Having this type of capability is essential to keeping critical facilities online and available for its many patients.

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A Path Forward: Agency-Wide Facility Strategy

For federal leaders, the challenge is often translating insight into coordinated, enterprise-wide action rather than a series of isolated projects.

These five steps can help guide an agency-wide facility strategy:

- 1 Assess where you stand.** Use audits and connected data to identify gaps, risks and at-risk assets across the enterprise.
- 2 Prioritize mission-critical investments.** Direct limited dollars to the facilities and systems where failure most threatens continuity of care.
- 3 Align stakeholders.** Coordinate across engineering, sustainability, contracting and clinical leadership on goals, funding and execution.
- 4 Leverage available funding and procurement vehicles.** Tap federal contract vehicles, performance contracting and energy-as-a-service to accelerate improvements.
- 5 Measure and sustain.** Use real-time data and recurring reviews to sustain gains, demonstrate stewardship and continuously improve.

Trane helps federal healthcare organizations develop and execute enterprise-wide infrastructure strategies by bringing together connected building data, infrastructure and asset planning, capital and funding strategies, stakeholder alignment, procurement planning and long-term lifecycle management. Through established federal procurement pathways, including the GSA Schedule, Trane helps support the delivery of infrastructure improvements that can strengthen mission readiness and continuity of care.

Leveraging Federal Healthcare Facilities to Advance Care

Federal healthcare facilities are far more than a collection of buildings, equipment, and systems. They are strategic assets that influence readiness, stewardship, and the ability to deliver consistent, high-quality care.

As facilities age and demand continues to grow, federal healthcare leaders need greater visibility into infrastructure performance, risk, and opportunity. They need secure technologies that support informed decision-making across complex organizations, coupled with modernization strategies that align limited resources with mission priorities.

A proactive, data-driven approach to infrastructure can help leaders improve reliability, direct limited dollars where they matter most, and anticipate risk before it reaches the bedside.



About the Expert



Mark O'Reilly, *Federal Vertical Market Leader, Trane Technologies*

As an Air Force veteran, he helps enable direct sales to federal entities through his own experience in working with all branches of the military and with the diverse acquisition authorities of the US Government. He is a member of the Federal Team of CHVAC Americas and lives with his family in New Braunfels, Texas.



To learn more about how Trane can support federal healthcare decision-makers advance their mission, visit trane.com/healthcare and explore Trane's federal government solutions at trane.com/government.

Endnotes

1. [GAO-23-106001 \(2023\)](#)
2. [GAO-23-106001 \(2023\)](#) + VA FY 2025 budget materials; note the "seven times" comparison is from Manhattan Institute, "[Making Use of VA Hospital Overcapacity: Expand Access to Reduce Costs](#)"
3. Federal News Network, "[Veterans Affairs approves nearly \\$600 million in infrastructure improvements](#)" (2026)
4. U.S. Department of Veterans Affairs. FY 2025 Agency Financial Report, Section II: Financial Results. "Deferred Maintenance and Repairs"
5. Trane, "[Cogeneration Cuts Munson Medical Center's Electric Bill By 50 Percent](#)" case study

Disclaimer: *This is for informational purposes only. Trane believes the facts and suggestions presented here to be accurate. However, final design and application decisions are your responsibility and will affect actual financial and energy efficiency results. Trane disclaims any responsibility for actions taken on the material presented.*



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