Transforming Healthcare Provider Resilience, Competitive Advantage, and Efficiency With AI

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Introduction

Healthcare providers in the US are operating under sustained financial and operational pressure. Rising labor costs, workforce shortages, declining reimbursement, and growing regulatory complexity are all contributing factors. Shifting payer dynamics are adding further strain, including Medicaid redeterminations and Medicare policy changes scheduled for 2026 and 2027.

As insured volumes fluctuate and care increasingly shifts toward higher-acuity, lower-margin settings, providers must deliver high-quality, equitable care while doing more with less. In this environment, AI-driven efficiencies are no longer optional.

This paper explores how providers can leverage AI at scale to build resilience, protect margin, and sustain clinical excellence amid ongoing industry disruption.

Industry background:
Providers under pressure

Provider organizations are absorbing the downstream effects of payer instability and policy shifts. As ACA subsidies may expire in 2026 and Medicaid eligibility requirements expand, millions of individuals are expected to lose or transition coverage. This disruption is likely to drive higher uncompensated care, increased emergency department utilization, longer revenue cycle timelines, and greater variability in patient volumes and acuity.

Medicare policy changes in 2027 are expected to further compress margins while increasing demand for acute and complex services.

In response, many providers are pursuing new revenue streams and clinical specializations to attract and retain patients. Doing so requires not only staying on the cutting edge of medicine, but also delivering modern, frictionless patient interactions. This approach makes it easier for patients to access care, navigate the system, and remain engaged across the care continuum.

Providers must balance these competing demands while continuing to invest in quality reporting, population health, digital access, and clinician support, often with limited capital flexibility.

Today's provider landscape

Healthcare providers face compounding challenges across nearly every operational domain:

- **Revenue cycle & financial operations:** Increasing denial rates, complex payer rules, manual reconciliation, and delayed reimbursement strain cash flow and inflate administrative cost.

- **Clinical operations & workforce:** Persistent staffing shortages and burnout require providers to optimize workforce deployment while managing rising patient acuity and throughput demands.

- **Care delivery & patient experience:** Patients expect convenient, transparent, and coordinated care, even as providers navigate capacity constraints and care variation.

- **Data fragmentation & technical debt:** Clinical, financial, and operational data remains siloed across EHRs, billing systems, departmental tools, and legacy platforms, limiting enterprise-wide insight.

- **Payer & network relationships:** Value-based contracts, utilization management requirements, audits, and reporting obligations require timely, shared intelligence that is often unavailable.

- **Regulatory & reporting burden:** Providers face increasing scrutiny and reporting demands that require accurate, auditable, and explainable data pipelines.

Across these domains, fragmented data and manual processes drive cost, slow decisions, and pull staff away from patient care.

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How Teradata Supports Strategic Transformation

For years, healthcare providers have leveraged Teradata's in-database analytics with ClearScape Analytics® to develop production-ready, scalable machine learning models that support operational and financial decision-making. More recently, Teradata has emerged as a leader in context-aware generative AI, seamlessly integrating large language models with enterprise clinical, operational, and contract data.

As healthcare providers operate under sustained margin pressure, operational efficiency and intelligent automation have become essential. To remain financially sustainable while maintaining access, quality, and clinician engagement, health systems must use advanced data and AI capabilities to uncover meaningful patterns across care delivery, workforce utilization, physician contracting, and service line performance.

Key imperatives include:

1. **Flexible AI agents with contextual awareness:**
   Move beyond rules-based bots and rigid robotic process automation (RPA) to AI agents that support and extend clinical, operational, and administrative teams. These agents leverage real-time insights from **Teradata Vantage** to provide timely, context-aware intelligence, such as identifying misaligned on-call coverage, flagging documentation gaps that impact revenue, or surfacing emerging capacity constraints before they affect patient access.

2. **Cost containment and AI-driven automation:**
   Focus AI investment on high-impact provider processes, including physician contracting and on-call coverage management, care coordination and discharge planning, supply and implant cost oversight, revenue cycle operations, and regulatory and quality reporting. By integrating AI capabilities directly with data in Vantage, provider leaders gain deeper visibility into cost drivers and utilization patterns across service lines. The objective is to reduce avoidable expense, protect margin, and improve operational efficiency without increasing clinician burden or compromising patient care.

3. **Accessible data and insights:**
   Healthcare leaders need fast, trusted insights to improve outcomes, manage costs, and operate resilient organizations. A key part of Teradata's AI strategy is the Model Context Protocol (MCP) Server. The MCP Server enables clinicians, administrators, and operational leaders to combine and analyze both structured and unstructured data using natural language queries, without reliance on scarce technical resources. Critically, the MCP Server provides this insight while maintaining enterprise-grade governance, security, and trust, allowing organizations to scale AI adoption with confidence.

A new operating model for insight and innovation

AI-driven, intent-based experiences are transforming how organizations turn data into value. Users can ask questions and receive timely, relevant insights without waiting for new reports or development cycles, supporting both standardized workflows and on-demand exploration.

For healthcare systems, these capabilities reduce friction between data and decision-making, enabling faster answers, earlier issue identification, and quicker testing of new ideas. The result is higher productivity, accelerated innovation, and stronger support for clinical, operational, and research priorities at scale.

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Key Takeaways and Next Steps

AI that understands the operational context and automates routine tasks can significantly reduce administrative burden across revenue cycle, compliance, and operational functions. Less time spent on repetitive administrative work frees teams to focus on higher-value work. As healthcare evolves, every patient and clinician workflow will increasingly be paired with AI-powered "agents" that enhance communication, responsiveness, and satisfaction.

Now is the time to prepare. Modernizing your data and analytics infrastructure today positions your organization to absorb the growing volume of AI-driven data and analytic demands. This foundation allows pilots and proofs of concept to quickly scale into business-critical capabilities.

Teradata can help you get started. Our **healthcare** experts work with organizations to assess readiness, define high-impact use cases, and build a practical roadmap to value, so you can move forward with confidence and speed.

About Teradata

At Teradata, we believe that people thrive when empowered with trusted information. We offer the most complete cloud analytics and data platform for AI. By delivering harmonized data and Trusted AI, we enable more confident decision-making, unlock faster innovation, and drive the impactful business results organizations need most. See how at **Teradata.com**

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