Rethinking AI's ROI in HLS beyond the 'use case trap'

The best unit of measure to quantify ROI in the healthcare and life sciences domain is process transformation, not isolated use cases.

Executive summary

AI in healthcare and life sciences is no longer about 'if' but 'how to scale with real ROI.' Yet most organizations remain stuck in the 'use case trap', chasing isolated pilots that show quick wins but fail to scale because they ignore broader processes and service delivery dependencies. The evidence is clear: the highest ROI comes not from standalone AI use cases but from embedding AI into end-to-end processes and service delivery, where it drives cost savings, faster and more affordable care, and higher quality star ratings over a 3–5 year term post-go-live.

In this point of view, we look at various ways to redefine AI ROI for Healthcare and Life Sciences organizations using globally accepted definitions of use cases, process, SOP, and service delivery, and shows how leading organizations are shifting from 'force-fitting AI' to 'relevancy-driven AI' that transforms care and operations at scale.

Why AI ROI 'doesn't add up' for many organizations?

Independent analysts' research consistently highlights a troubling pattern:

- Gartner has repeatedly noted that many AI initiatives fail to move beyond pilots due to a lack of integration with workflows, governance, and operating models.
- Forrester research shows that while healthcare leaders strongly believe AI can improve outcomes and efficiency, most organizations lack a structured path from experimentation to enterprise value.
- HFS Research describes this gap as a failure to connect AI investments to 'real operational and service delivery change' rather than technical success.

> **The common underlying challenge is not AI capability. It is where and how AI is applied and measured.**

The 'use case trap' in healthcare and life sciences

Many organizations start their AI journey by identifying 'good AI candidates', essentially use cases like prior authorization, clinical documentation, form processing, or coding that are technically feasible and show early success in a pilot.

But when these use cases are scaled across the enterprise, a harsh reality emerges:

- They often fail to deliver expected ROI because they don't account for system dependencies (e.g., downstream workflows, data quality, clinician adoption).
- They get stuck in 'pilot purgatory,' where small wins don't translate into enterprise value.
- The conversation becomes binary: 'success' (we deployed it) vs. 'failure' (we didn't see ROI), rather than a continuous improvement journey.

> **This is the 'use case trap'. Optimizing a single task while ignoring the broader processes and service model, leading to suboptimal ROI and wasted investment.**

According to **Forrester (2025),** organizations are drowning in discussions about individual AI use cases and agents while missing the bigger transformation story. This myopic focus, often driven by vendors, prevents leaders from developing the comprehensive transformation plans they need.

According to **HFS Research (2025),** for one in two enterprises, many AI solutions remain at the experimentation stage (POC, pilot) and fail to scale. Although operational efficiency is widely cited as AI's primary role, productivity gains will soon become table stakes rather than a differentiator.

Why does this happen in Healthcare and Life Sciences?

Healthcare delivery is process-driven, regulated, and interdependent:

- Clinical workflows cross multiple systems
- Administrative decisions impact patient outcomes
- SOPs enforce safety, compliance, and auditability

Use cases rarely operate in isolation, yet most AI programs are funded and measured as if they do.

Aligning on globally accepted definitions

To avoid semantic confusion, the following definitions align with healthcare regulatory, operational, and analyst interpretations and health IT frameworks (ISO, HL7, IEC, etc.):

Use Case: A defined scenario describing how a specific stakeholder (like a clinician, member, pharmacist, provider, etc.) interacts with systems to address a targeted clinical, operational, or regulatory need.
Example: AI-assisted prior authorization decisioning for imaging requests.

Process: An end-to-end sequence of interrelated activities that transforms healthcare inputs into outcomes across clinical care, operations, or research.
Example: The full prior authorization process (end-to-end) from provider order to payer decision and patient scheduling.

Standard Operating Procedure (SOP): A formally documented, auditable set of step-by-step instructions governing how a process is executed to ensure consistency, safety, quality, and regulatory compliance.
Examples:

- CMS-aligned SOPs governing utilization management and appeals.
- Outpatient specialty care delivery, including scheduling, pre auth, visit, documentation, billing, and follow-up.

How leading organizations with proven AI ROI are doing it differently

Organizations that are demonstrating real ROI with AI are not starting with "Which use case can we apply AI to?". Instead, they:

1. Start with strategic service delivery (e.g., "How can we make specialty care faster, more affordable, and higher quality?").
2. Identify the processes that need transformation (e.g., prior authorization, care coordination, revenue cycle).
3. Map the SOPs and use cases within those processes, and then apply AI (along with RPA, APA, automation, human-in-the-loop, and AI agents) where it adds the most value.

In summary, use cases are the entry point, processes are the unit of measure, and service delivery is the ultimate outcome. Let's also understand this with a few real examples:

A payer example: AI is embedded across the entire utilization management process. Outcomes are measured by:

- Faster authorization turnaround times
- Reduced administrative cost per member
- Improved member experience
- Higher CMS Star Ratings (CMS explicitly links operational efficiency and member experience to star rating outcomes).

A provider example: AI is integrated across the revenue cycle and care coordination processes. Outcomes are measured by:

- Lower denial rates
- Faster cash realization
- Reduced clinician administrative burden
- Improved patient satisfaction scores

A life sciences example: AI is embedded across clinical trial execution processes. Outcomes are measured by:

- Faster site activation
- Improved patient recruitment and retention
- Fewer protocol deviations
- Accelerated time-to-submission (FDA and EMA guidance increasingly emphasize data quality, traceability, and process integrity over isolated analytics).

Reframing the unit of measure for AI ROI

> **To avoid the use case trap, the best unit of measure for AI ROI in healthcare and life sciences is this: AI ROI compounds when processes change, not when tools are added.**

Here's how to think about it:

Layer	Role in AI ROI	Verdict
Use Case	**Execution and experimentation** (e.g., AI for prior auth, AI scribe)	Necessary, not sufficient
SOP	**Control and compliance** (e.g., SOP for prior auth, SOP for coding)	Essential safeguard
Process	**Value realization and scale** (e.g., prior auth process, revenue cycle, clinical trial process)	Primary unit of measure
Service Delivery	**Enterprise outcome** (e.g., specialty care delivery, chronic disease program)	Ultimate proof of ROI

The right starting point: Escaping the use case trap

Sustainable AI ROI in healthcare requires reversing the traditional adoption model.
The correct sequence is:

I. Start with service delivery outcomes
II. Transform End-to-end processes
III. Govern with SOPs and controls
IV. Apply AI contextually:
    a. Alongside automation and human-in-the-loop
    b. Increasingly through AI agents
    c. Always within clinical and regulatory guardrails

This ensures AI is applied by relevance, not force-fitted as a standalone solution.

Five crucial CTO recommendations

I. **Don't start with AI:** Begin with where service delivery is broken: The delays, denials, cost leakage, and poor experience. AI should bridge the gap, not define the problem.
II. **Measure value across time horizons:** Expect early time-to-value signals within 12 months to sustain funding, but anchor success on 3–5-year process-level ROI. Quick wins build confidence. Process transformation builds enterprise value.
III. **Embed AI into processes, not tasks:** Redesign critical workflows like prior authorization, care coordination, and clinical trials, to be AI-enabled by design, not incrementally automated.
IV. **Operationalize trust through SOPs:** Update SOPs to explicitly define AI and human accountability (e.g.: AI recommends, humans decide). This is essential for scale, safety, and regulatory acceptance.
V. **Redefine ROI beyond cost:** Measure AI impact across:
    - **Clinical value:** Outcomes, safety, quality
    - **Operational value:** Throughput, cycle time, workforce productivity
    - **Governance value:** Fairness, explainability, compliance

> **Financial ROI is the result of getting the above right, not the starting justification.**

Conclusion: AI ROI in healthcare and life sciences

AI in healthcare and life sciences must not be measured by isolated use cases alone. The most meaningful ROI is achieved when AI is embedded into end-to-end processes and service delivery, where it drives outcomes like:

- Cost savings over 3–5 years
- Enhanced service delivery
- Increased star ratings and quality scores

The best unit of measure is the process, not the use case. Use cases are the entry point. Processes are the unit of measure. And service delivery is the ultimate outcome.

By shifting from 'force-fitting AI' to 'relevancy-driven AI', Healthcare and Life Sciences organizations can move beyond the use case trap and unlock sustainable, enterprise-level ROI, harnessing the power of AI.

About Brillio

Brillio is a digital technology services company that drives AI-first engineering and design-led experiences for global enterprises. Born digital in 2014, its consulting-led services span Customer Experience, Data & AI, Product Engineering, and Digital Infrastructure. With an industry-leading NPS of 71, Brillio accelerates time to market through its proprietary BrillioOne.ai platform, powered by AI-ready talent with deep domain expertise.

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