

Applying AI Solutions to Health Care: A Thoughtful Approach

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Introduction

From streamlining administrative processes to improving patient care, artificial intelligence (AI) has been transforming health care in exciting and innovative ways.

AI promises to significantly improve health outcomes, for example, by facilitating early diagnosis, optimizing treatment, supporting drug discovery and reducing the administrative burden for clinicians. Although AI has the potential to improve health care access, quality and cost efficiency, regulatory and implementation challenges have made the health industry relatively slow to adopt AI-driven solutions, especially compared to other industries.

A conservative approach to adopting AI is wise, given the high stakes of patient care. AI solutions must address barriers related to patient safety, security, provider acceptance, access to high-quality data, patient population data and ethical concerns.

Overcoming these barriers requires expertise in program implementation and management, evaluation and data governance. Aptive's track record in these areas and experience partnering with federal agencies, including very large agencies like the Department of Veterans Affairs (VA), has informed the company's approach to bridging operational needs with advanced technologies like AI.

Implementing Strategic AI Programs

Implementing an AI program requires a thoughtful and well-documented strategy, particularly when applying AI solutions to tedious and high-volume processes. To ensure clients adopt technical solutions successfully, Aptive developed a structured implementation strategy that:

1. Defines the problem and ideal outcome(s)
2. Compares potential solutions
3. Develops the implementation strategy collaboratively (conduct a readiness assessment)
4. Develops and launches a minimal viable product – an initial version of the solution
5. Engages stakeholders to inform subsequent releases, or versions
6. Monitors impact

1. Defining the Problem and 2. Comparing Solutions

Defining the problem and ideal outcomes is the first step in Aptive's strategy for implementing any change or process automation. Having outlined the problem, any constraints and ideal benchmarks, it is important to conduct a field scan to understand which AI solutions, or alternatives, exist. In some cases, for instance, AI may not be necessary and ultimately require more time and resources to develop than other, pre-existing solutions.

Robotic process automation, for example, excels at structured tasks using a pre-programmed set of rules, while AI is better suited to handling unstructured data and can help make predictions. Both technologies are useful but understanding their unique tradeoffs within the context of budgetary and other constraints can help determine which solution is best for the problem at hand. Aptive conducts a thorough field scan to ensure the team identifies and adequately evaluates all possible solutions.

3. Collaborating to Develop an Implementation Strategy

Relevant stakeholders within a federal agency should collaborate in identifying the problem, constraints and optimal solution, as this facilitates development and buy-in for the implementation strategy. This approach

aligns output with agency goals and ensures the agency is meeting compliance standards. In many cases, AI solutions require cloud-based services, and the Federal Risk and Authorization Management Program (FedRAMP) provides a standardized approach to assess security and authorize cloud computing services.

Before implementing any approach, it may benefit an agency to conduct a readiness assessment to determine the available resources, barriers and stakeholder perspectives related to changing and adopting an AI solution. This step can help agency leadership address concerns and overcome barriers earlier to ensure an AI solution is adopted and implemented more effectively.

4. Developing and Launching a Minimum Viable Product

After choosing a solution and completing a readiness assessment, the next step is to develop, test and deploy a minimum viable product. An agile approach allows the development team to deliver the highest-value benefit by regularly integrating and deploying additional functionality based on stakeholder feedback.

At this stage it is critical to engage stakeholders through presentations and work groups to understand documentation and additional feature needs. These discussions can inform user guides, frequently asked questions and release notes to ensure the AI solution is adopted and implemented properly. In previous work, the Aptive team integrated the communications app, Slack, to help monitor processes and alert relevant team members of potential issues as they arose.

5. Engaging Stakeholders to Inform Subsequent Releases

Automating processes including alerts and tests is key to establishing a scalable framework. Establishing automated, outcomes-based tests to validate data and assess model performance can help monitor and evaluate implementation by quantifying the accuracy and efficiency of each release. After establishing successful outcomes through a pilot, the final stage is to scale the initiative appropriately while monitoring outcomes.

6. Monitoring Impact

Generally, key outcomes of AI implementation are a reduction in manual labor; more accurate and complete data; faster response times; detection of waste, fraud and abuse; and freeing employees to work on high-level tasks. For perspective, the Office of Information and Regulatory Affairs recorded over [142 billion active information collections in 2024, which cost the federal government more than \\$187 billion in person-hours to collect and archive those data](#). Implementing an AI or other automated solution can reduce costs and free employees to focus on higher-level tasks.

Using the strategy outlined above, Aptive implemented an AI solution to automate claims form processing at the Veterans Benefits Administration (VBA), which resulted in 45% of all inbound mail being automatically processed and attached to Veterans' records the same day, with 98% accuracy. Using AI/machine learning technology, Aptive was able to reduce the time it took VBA to process a claim from 60 days manually to just one day.

Aptive's solution increased cost efficiency and service delivery and created the opportunity for about 200 VBA claims assistants to receive training and promotions to claims examiner and/or claims processor roles.

Evaluating AI Solutions

Creating a robust strategic plan is critical to both the successful implementation and proper evaluation of an AI solution. Systematically evaluating health care initiatives is essential for determining how effective and efficient interventions are and for identifying opportunities to improve health systems to better meet patient needs. Furthermore, program evaluations demonstrate impact to stakeholders, which builds trust in AI solutions and provides the data needed for evidence-based decision support.

As part of a continuous improvement strategy, stakeholders and analysts should create evaluations with sustainability and scalability in mind to support successful implementation across systems. This is particularly pertinent for evaluating AI solutions within health care settings, which often experience lower performance post-implementation compared with AI performance within experimental contexts. Additionally,

Impact of Aptive's AI Implementation



75% of claims automated



25 different form types processed automatically



45% of inbound VBA mail automatically processed and attached to Veteran records the same day



Training and promotion opportunities for ~200 VA claims assistants

AI algorithms are complex and sensitive to environmental changes, which lead to declining performance.

Aptive's approach to program evaluation is data-driven and tailored to specific program goals and strategic objectives. A team of experts in program evaluation and measurement, data science and epidemiology partners with agency program leaders and stakeholders to define evaluation questions, identify data sources and establish timelines as part of the evaluation plan.

Currently, Aptive partners with the Veteran Health Administration's (VHA) Office of Suicide Prevention to establish and support the evaluation of emergent suicidal crisis services that fall under Comprehensive Prevention, Access to Care, and Treatment (COMPACT) Act legislation. Aptive has worked closely with VHA to establish data management best practices and develop

evaluation metrics to streamline program assessment and provide avenues for future automation and AI solutions as the COMPACT Act program matures.

Aptive considers both data quality and accessibility when defining evaluation measures to ensure evaluation plans are accurate and scalable for continuous monitoring of AI-based solutions. The team understands that one of the primary reasons AI-driven health care solutions perform sub-optimally when deployed is that models were trained with data that is not reflective of the real-world patient populations specific to the settings in which they are implemented. The Aptive evaluation framework allows for setting-specific assessments that reflect both program processes and patient needs.

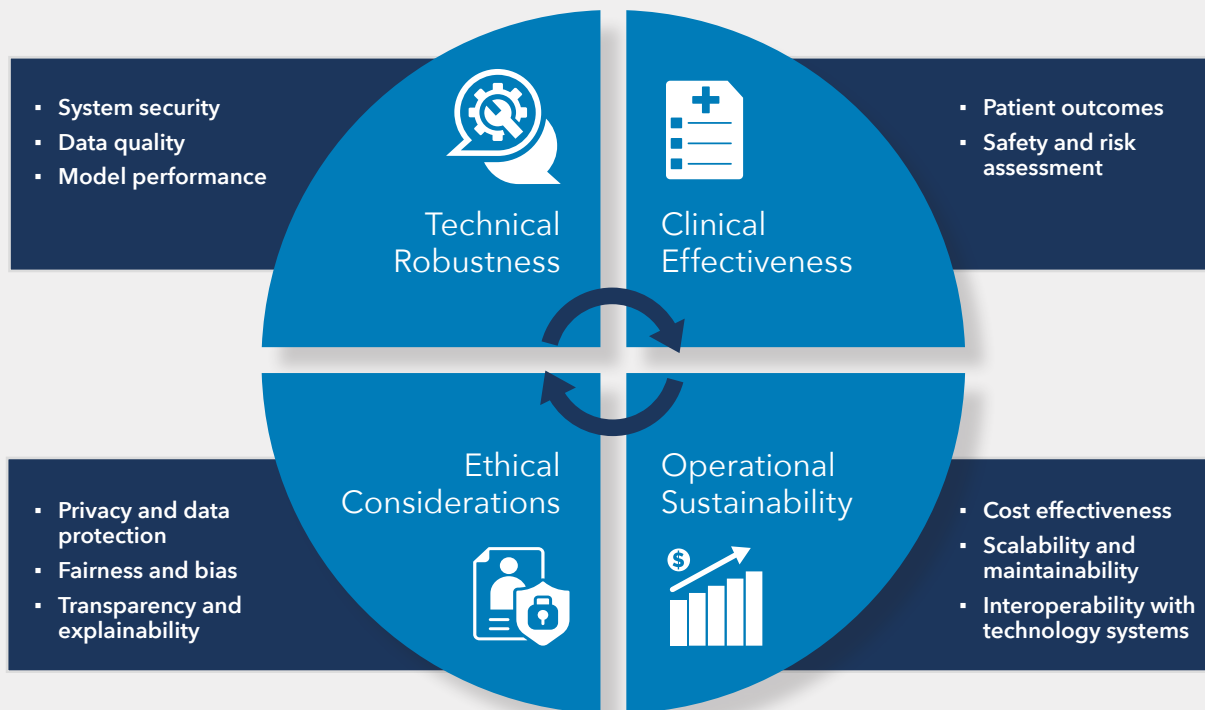
Evaluation analyses should be consistent to assess performance trends and enable the early detection of performance decay requiring AI algorithm adjustments. This consistency is critical to ensuring AI-based health solutions stay effective and relevant in the ever-evolving health care landscape. Continuous improvement initiatives should aim to evaluate

additional or evolving data sources to identify data points to incorporate into AI algorithms. This step can improve the effectiveness and efficiency of interventions.

For the Clay Hunt Suicide Prevention for American Veterans Act, Aptive adopted a setting-specific approach for evaluating program efficacy, cost effectiveness and Veteran satisfaction. The Aptive team serves as an independent, third-party evaluator for VA mental health care and suicide prevention programs under the act. Evaluation measures include clinical outcomes derived from electronic health records, patient-reported outcome measures and qualitative data collected from mental health clinicians.

Aptive analyzes the data to reflect the Veteran population using complex models that account for co-occurring mental health diagnoses, physical comorbidities and sociodemographic factors. VA mental health programs have used annual results from the team's analyses for decision support related to program effectiveness trends over time and emerging mental health initiatives.

Key Dimensions of Continuous Evaluation Framework for AI Health Care Solutions



Maintaining Data Governance and Compliance

Effective data governance provides the foundation for successfully implementing AI, particularly as organizations manage increasing volumes of complex data as their own strategic assets. While AI systems offer powerful capabilities, their success depends entirely on well-governed, high-quality data that meets rigorous standards for conformance, completeness and plausibility – key categories defined by the Kahn Framework for data quality assessment.

Organizations often underestimate the infrastructure required to maintain high-quality data to implement AI. Success depends not only on technological sophistication but also on systematic approaches to assessing and improving data quality. To address these challenges, the Kahn Framework provides a structured methodology through three essential categories:

1. **Conformance:** Ensuring data adheres to specified formats
2. **Completeness:** Confirming all required elements are present
3. **Plausibility:** Validating alignment with real-world expectations

Given the complexity of modern AI applications, traditional static governance frameworks prove inadequate. Dynamic governance must incorporate both verification and validation contexts.

Verification includes internal consistency checks, automated format validation and cross-reference verification between related elements. Validation involves comparison against external benchmarks, domain expert review and real-world outcome assessment. In health care applications, for example, verification ensures patient record consistency, while validation confirms alignment with established medical knowledge.

Beyond these foundational considerations, modern AI systems introduce new complexities in maintaining data quality. Multimodal AI systems require quality assessment across diverse data types while maintaining consistent standards. Autonomous AI agents demand enhanced, real-time data quality monitoring. Distributed learning environments necessitate quality assessment across multiple locations and stakeholders. Additionally, open-source AI models demonstrate how rapid iteration cycles can achieve significant outcomes, requiring governance frameworks to adapt accordingly.

To address these evolving challenges, organizations can measure governance effectiveness through a comprehensive set of metrics aligned with the Kahn Framework's core categories. Conformance metrics track value ranges and format adherence and compliance scores to ensure data meets specified standards. Completeness metrics assess required field presence and dataset coverage to verify all necessary information is available. Plausibility metrics evaluate temporal consistency and logical relationships to validate that data aligns with real-world expectations and business rules.

Translating these metrics into action, implementation requires a systematic approach through five key services:

1. **Policy Development:** Establish quality standards and validation protocols.
2. **Quality Monitoring:** Implement automated checking and tracking.
3. **Training and Culture:** Build expertise in assessment frameworks.
4. **Technical Integration:** Deploy quality monitoring tools and automation.
5. **Continuous Improvement:** Monitor metrics and refine methods based on outcomes.

When executed effectively, this comprehensive approach to data governance delivers measurable benefits, including reduced variability in quality assessments, enhanced trust in AI systems, improved model performance and accelerated innovation through trusted data sharing.

This approach to governance has been instrumental in our work with the VA Office of Research and Development's Field Enterprise Support Services to prepare VA investigators to use AI, collaborate and showcase their innovations in a responsible and safe manner.

The path forward requires balancing technical excellence with ethical considerations. As AI systems increasingly influence public-facing decisions – from health care diagnostics to financial services – maintaining data quality becomes both an operational necessity and ethical imperative. Organizations that implement rigorous quality standards across all dimensions position themselves to build public trust, ensure ethical AI deployment and drive responsible innovation that serves both organizational and public interests.

Conclusion

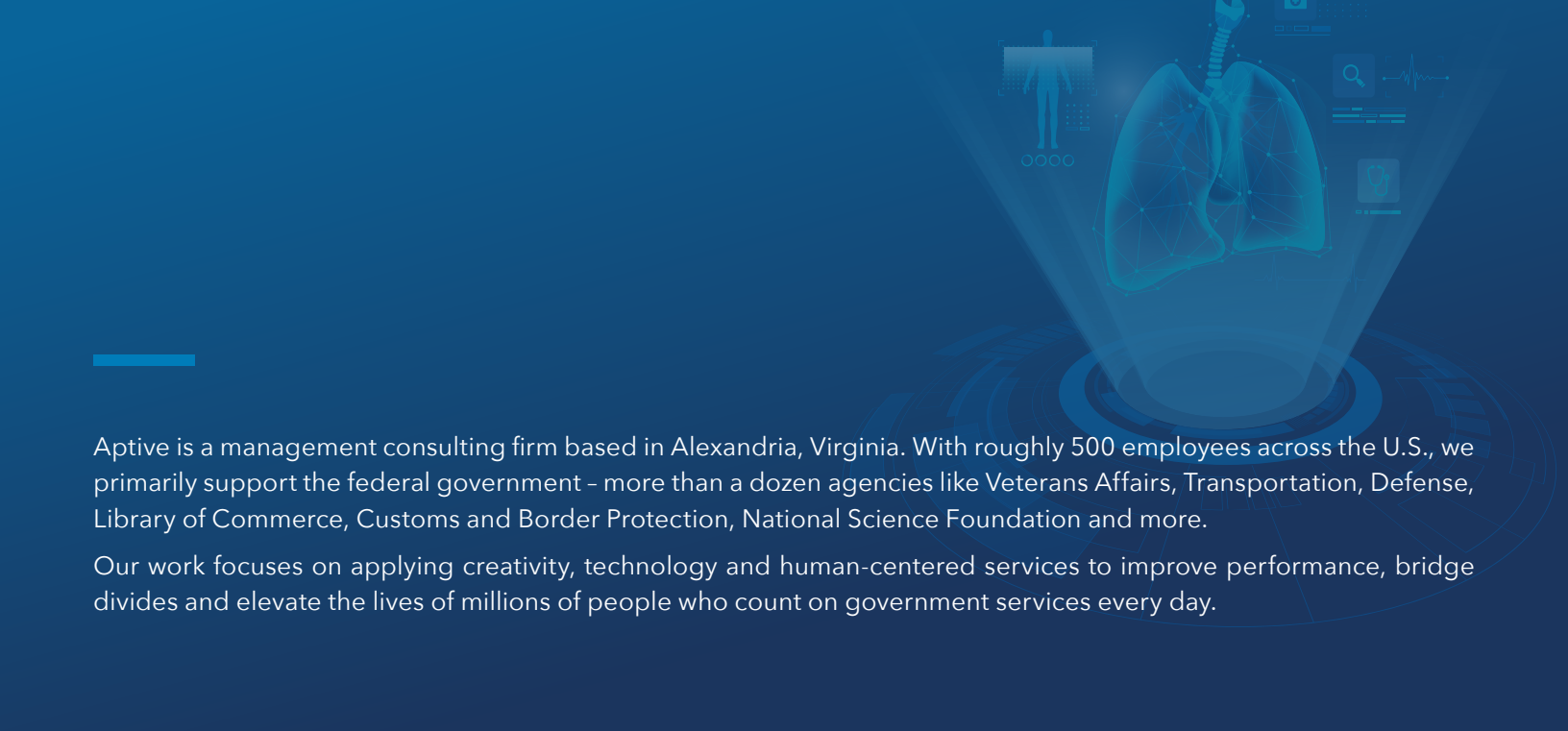
Responsible innovation requires more than just technology – it also demands careful planning, skilled management and ongoing evaluation. Drawing on experience implementing AI solutions across federal agencies, Aptive brings deep expertise in guiding organizations through change, measuring outcomes and protecting data integrity. This comprehensive approach has helped Aptive's partners achieve concrete results: more efficient workflows, streamlined operations and reduced costs, without compromising quality or compliance.

Aptive's commitment to data-driven decision making ensures every solution delivers meaningful impact. The team has seen firsthand how the right AI implementation can transform critical sectors like health care, from enhanced patient care to reduced administrative workloads. Working closely with partners, Aptive helps them navigate the complexities of AI adoption, connect innovation to core mission objectives and build adaptable systems ready for tomorrow's challenges.



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Our work focuses on applying creativity, technology and human-centered services to improve performance, bridge divides and elevate the lives of millions of people who count on government services every day.

Business Details

AWARDS

- Top Workplace (The Washington Post) 2024, 2023, 2022, 2021
- HIRE Vets Platinum Medallion Award (Dept. of Labor), 2023, 2022, 2021
- DAV Patriot Employer (Disabled American Veterans), 2023
- CEO of the Year (Washington Exec), 2023, 2024
- Fast 50 (Washington Technology), 2023
- Patriot Employer of the Year (Disabled American Veterans), 2024

PARTNERSHIPS

- Microsoft Gold Certified Partner, Data Analytics
- UiPath
- Hyperscience Gold Partner
- Snowflake Managed Service Provider
- Google Cloud
- Digital Ocean Partner
- Amazon Web Services
- Medallia

PRIME CONTRACT VEHICLES

Governmentwide MACs, IDIQs and GSA Schedules

- OASIS SB Pool 1
- CIO-SP3
- GSA MAS
- OPM Recruitment and Branding

Agency Specific IDIQs and BPAs

- DOD DRAID BOA
- DOE SCOS BPA
- DOT Engineering Recruitment Firm Services BPA
- DOT Outreach and Communications Support BPA
- DOT STEPC IDIQ
- FAA eFAST
- FDA BOOM
- HHS Administration for Community Living IDIQ
- Library of Congress IDIQ
- NIH PICS III
- SAMHSA IDIQ
- VA T4NG
- VA VECTOR

SUBCONTRACT VEHICLES

- NASA ESIP BPA
- Navy BUMED OPRSS IDIQ
- NIH HBCU PEI IDIQ
- OASIS+ SDVOSB track
- VA IHT
- VA ICSP IDIQ
- VA OSDBU Conference Event Support Services BPA

CERTIFICATIONS

- ISO 9001:2015
- ISO 20000
- ISO 27001:2022
- CMMI SVC L3
- CMMC

CLEARANCES

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