Persivia

AI in Care Management

Executive Summary

This white paper explores the transformative impact of Artificial Intelligence (AI) on care management in the healthcare industry. With the exponential growth of healthcare data, AI offers advanced tools and methodologies to derive actionable insights, personalize care, and streamline management processes. Gartner's defined use cases highlight AI's potential to enhance patient care, experience, and organizational efficiency.

Traditional care management faces challenges in handling the increasing volume and complexity of patient data, hindering effective decision-making and timely interventions. AI technologies, such as machine learning and predictive analytics, address these limitations by uncovering patterns, predicting health risks, and optimizing care pathways. Persivia is a healthcare technology company revolutionizing the industry by providing a comprehensive, AI-driven platform that helps healthcare providers, payers and public health agencies improve patient outcomes through value-based care (VBC) models. The Persivia Platform – CareSpace® – is a single integrated AI-driven platform that supports all VBC models and integrates data from all sources through the entire care continuum. It includes a variety of AI-driven workflow tools and data integration capabilities to establish a complete view of the patient and populations and manage cost-effectively. Persivia's industry-leading capabilities in Artificial Intelligence and Risk Stratification simplify, combine, and analyze data from all sources – thereby helping care providers make real-time decisions at the point of care.

The paper underscores AI's role in reducing hospital readmissions, minimizing costs, and improving patient satisfaction. The outlined strategies and real-world examples demonstrate how AI will be a cornerstone in delivering patient-centric care in the evolving healthcare landscape, ensuring improved outcomes and organizational efficiency.

978-856-4600

sales-info@persivia.com

www.persivia.com

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Introduction

AI will improve the Value and Quality delivered through Care Management

In recent years, the healthcare industry has witnessed exponential growth in data generation, presenting both opportunities and challenges in managing and leveraging this information effectively. With the advent of AI, healthcare professionals now have access to advanced tools and methodologies that can analyze vast amounts of data, derive actionable insights, and personalize care management approaches.

This white paper aims to explain how AI-powered solutions can streamline care management processes, while offering comprehensive strategies to address the complexities of patient care. From predictive analytics and personalized interventions to resource optimization and administrative efficiencies, AI will be a key pillar of how organizations will deliver patient centric care.

Gartner defines the following Use Cases for how AI can be used to improve patient care, the patient experience and organizational performance and efficiency thru the considered use of AI. The figure below and the following table layout the use cases and their expected benefits.

AI Use Cases Along the CM Spectrum

Identification	Stratification	Engagement	Management	Outcomes and Reporting
• Emerging/rising risk modeling	• Patient prioritization modeling	• Auto-compose clinical messages • Automate healthcare outbound consumer messaging • Automate patient care navigation	• AI-generated next best action • Auto-generate assessments, patient education and summaries	• Augment data analysis and interpretation

Source: Gartner
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Gartner

Care Management Use Case	Value Derived
Risk Modeling	An analysis to uncover hidden trends in data to identify members/patients for care management programs based on their likelihood of becoming future high-cost claimants or chronic disease patients or escalating in their current conditions. This can lead to potential future cost savings through avoided events.
Patient Prioritization Modeling	An algorithm that ranks members/patients for outreach, allowing care managers to prioritize their caseload, increasing efficiency and ensuring that the highest-value potential members will be targeted.
Auto compose clinical messages	Automated generation of the first draft of clinical documentation such as clinical notes to reduce the burden on care managers and increase efficiency
Automate healthcare outbound consumer messaging	Automated generation of member/patient messaging of various sophistication levels, ranging from consideration of preferred language and clinical profile to aspects of SDoH and cultural and emotional sensitivity. This aims to reduce the burden on care managers and improve member satisfaction/willingness to engage.
Automate patient care navigation	A conversational assistant to support patients with care navigation (e.g., checking insurance eligibility, appointment scheduling and rebooking, preoperative care requirements, service availability) aiming to reduce friction, increase efficiency and raise member satisfaction.
AI-generated next best action	An algorithm that analyzes a variety of data to suggest the personalized next best action for a member/patient or a care manager to complete to maximize outcomes or engagement.
Autogenerate assessments, patient education and clinical summaries	Automated generation of hyperpersonalized care management program assessments, education materials and “visit” summaries to reduce the burden on care managers and increase satisfaction for both the clinicians and member/patients.
Autogenerate benefits summaries	Automated generation of hyperpersonalized summaries of benefit plans and certificates of coverage to increase member satisfaction and engagement and reduce the burden on navigators and managers.
Augment data analysis and interpretation	Enabling technologies that allow for ease of data preparation, report generation, insight gathering and analysis from a spectrum of end users with varying skill sets, data comfortability and literacy seeking to increase efficiency and ease decision making.

Source Gartner

The Need for AI in Care Management

Traditional care management often faces hurdles in effectively handling the increasing volume and complexity of patient data, leading to challenges in decision-making, resource allocation, and timely interventions. AI technologies, including machine learning, natural language processing, and predictive analytics, possess the capability to harness this wealth of data, uncover patterns, and predict potential health risks or outcomes with unprecedented accuracy.

Moreover, AI-driven algorithms have demonstrated the capacity to assist healthcare providers in identifying high-risk patients, tailoring treatment plans, and optimizing care pathways, thereby reducing hospital readmissions, minimizing healthcare costs, and improving overall patient satisfaction.

Persivia brings AI to their Best-in-Class Care Management platform – CareSpace®

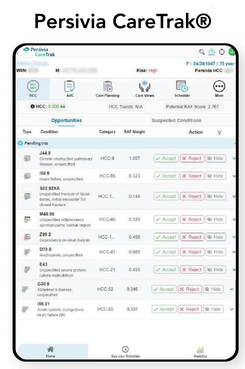
CareSpace® brings a level of capabilities to care management and care coordination that is currently unmatched in the industry. No current vendor has similar or competitive capabilities. CareSpace® allows care managers to create and manage tasks across the full spectrum of the available data covering:

- **Clinical data**
- **Claims data**
- **Patient reported data**
- **HIE delivered data**
- **SDOH data.**

The standard work flows available in CareSpace® include

- The ability to analyze all data in real time
- Risk stratify and prioritize patients
- Detect and generate alerts based on high quality evidence
- Generate goals and tasks for both patients and their care givers and care managers
- Track those goals and tasks across large populations and care teams
- Create customized Care Plans
- Communicate bidirectionally with patients and their care teams.

The Persivia Soliton™ AI engine evaluates each data element as it progresses through the system and applies the appropriate AI models to support the goals of improved care and organizational efficiency across the 8 domains described by Gartner above.



AI and ML Models

Persivia Soliton™ AI engine includes state-of-the-art Natural Language Processing (NLP) models to process unstructured clinical notes and generate automated messages. The NLP models' part of our system are adept at handling medical terms in the clinical domain that most other NLP models can't understand. These models can ingest large clinical notes, segment important information, identify cross-sectional and longitudinal hidden relationships/patterns, enrich our databases, generate assistive alerts and prospective actions.

The AI engine specifically handles incomplete and imbalanced data to generate actionable insights. Our models are a combination of rule based, supervised and semi-supervised machine/deep learning algorithms that constantly evolve and become better as more data is ingested. Unlike traditional models, these models (including Large Language Models) have been trained on the domain specific clinical data to produce domain specific insights. Domain specific models are important as medical/clinical terms can constitute 25% of the total words, these words are not handled effectively by generic models leading to imprecise or incomplete insights.

$17.89 PMPM
ACO Gen Savings
Persivia ACO over Average ACO

65%
Reduction in Re-admissions, All-cause, 30-day

up to 90%
Accuracy in predicting high-cost cohorts through ML based Predictive Modelling

85%
Increase in Efficiency through Automated Risk Stratification

4% vs 2.2%
Average Savings in BPCI-A
Persivia vs. Nat'l Average

★★★
100%
RAF Scores Improved

120%
HCC Capture Improved

98%
Accuracy in extracting HCC codes from physician Notes through NLP

The AI engine provides cost and outcome predictions including but not limited to risk stratification, readmissions, disease course, and total costs by using tailored predictive models (logistic regression, neural networks, decision trees, random forests, Bayesian networks, and ensemble models). Together these models have helped our clients achieve operational efficiency as shown in the above diagram.

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Conclusion:

In conclusion, within the US healthcare industry, the transformative potential of Artificial Intelligence (AI) continues to have a significant impact on improving care coordination. Persivia's comprehensive platform with deep ML and AI capabilities improves patient care, the patient experience, and organizational performance and efficiency.

In addition, this paper highlights the need for AI in care management and points out the limitations of traditional methods of care management, especially in handling complex patient data and inefficiencies associated with increased volumes due to the high flux of patients. Machine Learning, predictive analysis, and other AI technologies can harness the huge volume of data to uncover patterns, predict health risks, and optimize care pathways. And this is where Persivia's CareSpace® comes in. Persivia's CareSpace®, powered by Soliton™ AI engine in the healthcare industry, stands as the Best-In-Class Care management platform, offering unmatched capabilities. It provides comprehensive data aggregation, care management, quality management, population health analytics, risk adjustment, provider engagement, and patient engagement capabilities, helping healthcare organizations succeed in value-based care.

Overall, AI's integration in Care Management processes has streamlined operations, improved outcomes, and patient care, and boosted organizational efficiency. The comprehensive strategies outlined in this paper, coupled with Persivia's CareSpace®, underscore the pivotal role AI will play in delivering patient-centric care in the evolving landscape of healthcare.

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sales-info@persivia.com

www.persivia.com

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