AAFP

American Academy of Family Physicians Innovation Labs Report

AI Assistant for Clinical Review and Value-Based Care

Primary Care AI Evaluation With Navina

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Artificial Intelligence Assistant for Clinical Review and Value-based Care

By Steven E. Waldren, MD, MS, and Edmund Billings, MD

Objective

Since 2019, the American Academy of Family Physicians has been engaging with family physicians and technology vendors to better understand how technology innovations can address administrative burdens, decrease physician burnout and optimize primary care delivery. This report describes physicians' perspectives on using an artificial intelligence assistant designed to reduce the burden of clinical review, expand the use of patient information and improve documentation to meet the requirements for risk adjustment in value-based payment models.

In 2022, an initial proof of concept review based on 10 physicians' use of the AI assistant showed that it saved time, provided thorough clinical review and supported improved value-based care success. The following report describes more recent and comprehensive efforts in 2023 to validate these findings across a broader cohort of physicians and organizations.

Participants and Methods

The subject of this report is an AI assistant used by 1,836 primary care clinicians (physicians and their care teams) from 10 organizations in approximately 683,200 patient visits. Key performance metrics from the AI system collected across all the organizations include patient summary review rates, recommendation address rates and recommendation acceptance rates. Physicians were surveyed on the impact of the AI assistant on their practices (Appendix A). All 10 organizations were represented by the 58 physician respondents.

Results

Key performance metrics showed that physicians reviewed the AI assistant's patient summary in 85% of their visits, addressed the assistant's recommendation 87% of the time and accepted those recommendations 84% of the time. Recommendations were rejected by the clinician 9% of the time. Survey respondents reported a mean time savings per visit of 9 minutes, which was a 38% reduction in visit preparation time, and they reported a 45% increase in feeling better prepared for their visits. Respondents reported that the AI assistant met all the chart review and VBC risk-adjustment value propositions to a great or large extent. Regarding administrative burden and burnout, they reported a 29.5% decrease in chart review burden, a 23% decrease in burnout on a validated one-question burnout inventory[1] and a 21.7% increase in overall practice satisfaction.

Conclusion

These results confirm the initial evaluation, adding to the practical evidence that an AI assistant can greatly save physicians time, relieve burden, reduce physician burnout and increase satisfaction. The assistant's problem-oriented summary was used in the majority of visits. Its recommendations on suspected diagnoses and conditions were reviewed and accepted most of the time. The AI assistant for clinical review is a category defined by its key characteristics of efficient clinical review and accurate diagnosis capture and risk adjustment. Such AI assistants leverage the latest advances in AI, such as natural language processing, transformer models and medical knowledge graphs. This allows an AI engine to ingest data, structure and classify data and provide clinical insights via diagnosis abstraction. Physicians report that an AI assistant for clinical review they view as trustworthy and provides insights via a user experience that is deeply integrated and layered in their electronic health record workflow is essential. Physicians' experience using an AI assistant for clinical review suggests it is a critical innovation for primary care physicians to streamline the clinical review and transition and thrive in VBC.

Making a Case for an AI Assistant
Clinical Review and Visit Preparation Burden
Family physicians spend more than 1.5 hours per clinic day (13% of their time) conducting chart reviews to support their care.[2] The time is often thoroughly inadequate, particularly for the patients who need it most and are most at risk. Physicians are squeezing chart reviews into their day between visits, before clinics, at night or on weekends. Physicians' care teams can help "prep the chart," but the physician still needs to read all new information themselves. Their EHRs and document management systems frequently require many clicks and time to search, navigate, open and read documents. Questions primary care physicians frequently ask include:

- What is new in this patient's history?
- What is pertinent to today's visit?
- Am I missing a diagnosis or other clinical elements?
- Am I identifying all care gaps, quality metrics and risk adjustment factor score gaps?

Physicians feel rushed and have the feeling of potentially missing something. Clinical review burden negatively affects the quality of their care and erodes their professional satisfaction.[3,4]

VBP Models Add New Opportunities and New Requirements
The AAFP supports strengthening investment in primary care through well-designed VBP models.[5] Integral to a successful shift to VBP is the movement away from fee-for-service and towards a greater share of revenue derived from prospective, population-based payments typically paid on a per patient per month (or per quarter) basis. Knowing all patients have different levels of need, these payments must be adjusted to accurately reflect the anticipated cost of caring for patients, a process commonly referred to as risk adjustment.

Public and private payers incorporate a variety of risk-adjustment methodologies. AAFP policy states, "Risk adjustment methodologies should incorporate clinical diagnoses, demographic factors and other relevant information such as social determinants of health without exacerbating health care disparities *or expanding the administrative burden on primary care practices* [*emphasis added*]."[5] While many dimensions of risk adjustment merit further scrutiny, our focus in this report is to support accurate risk adjustment in a manner that does not introduce new burdens to primary care practices already facing significant challenges associated with administrative requirements of multiple payers, including prior authorization.[6]

Physicians and their care teams must comprehensively and accurately document all patient encounters to ensure patient needs and acuity are appropriately reflected in all prospective, population-based payments under VBP. Given that primary care practices frequently contract with more than 10 payers using different risk-adjustment methodologies, documentation must be done in a manner that can be easily translated to a wide range of public and private payers.

Innovation: AI Assistant for Clinical Review and VBC
AI assistants greatly reduce physician burden by efficiently performing administrative tasks that allow physicians to focus on caring for their patients. An AI assistant for clinical review helps physicians review all disparate records and summarize the patient's history and care to support their current visit. The AI assistant reviews the entire chart and accessible records, including labs, diagnostics,

> **Lab Partner: Navina**
> Navina is broadly recognized as an early innovator of AI-driven clinical review supporting VBP. Since 2018, they have partnered with family medicine and primary care practices to develop the AI assistant functionality to support clinical review, chart review and visit preparation. The solution is readily adoptable, software-only and does not require any new hardware. The Navina AI Assistant was evaluated on the EPIC, eClinicalWorks and athenaOne EHRs.

referrals, consult notes, discharge summaries and scanned documents, and provides them with a problem-oriented summary of the chart. The AI assistant can create this summary in minutes, eliminating the need for an individual to search and click through multiple records and/or documents. The assistant identifies missing

diagnoses, suspected conditions and gaps in care and provides actionable recommendations to the physician. In short, the AI assistant enables efficient pre-visit planning, accurate diagnosis capture and improved risk-adjustment accuracy, greatly reducing physicians' burdens.

Survey Details
Initial Proof of Concept
The AAFP's initial proof of concept evaluation was based on interviews with 10 physicians using Navina's AI-powered technology. In that review, regarding clinical review burden, the participants reported a 61% decrease in their preparation time for visits. Regarding VBP, one of the practices reported a 23% increase in diagnoses found and documented and a 38% increase in risk-adjustment scores. Participants said they felt better prepared and more present with their patients. These results suggested that an AI assistant of this category may be an essential tool for primary care physicians participating in VBC programs, which is the basis for the updated evaluation that is the subject of this report.

Methods
The AAFP surveyed primary care and family physicians using Navina's AI Assistant within their practices. A gift card was offered to each participant who completed a survey. Fifty-eight respondents across 10 distinct organizations and practices responded to the survey (Table 1). Practices were categorized by size (i.e., <50, 50-300, 300+), VBC status (i.e., not in VBC, transitioning or advanced) and amount of time "live" using the AI assistant (i.e., under 6 months and over 6 months).

Table 1. Practice Participants by Size, Status and Time Live with AI Assistant

Organizations	Providers	VBP Status	Time Live with AI Assistant Technology
Practice 1	<50	Transitioning	Over 6 months
Practice 2	<50	Advanced	Over 6 months
Practice 3	<50	Transitioning	Under 6 months
Practice 4	<50	Transitioning	Under 6 months
Practice 5	<50	Transitioning	Under 6 months
Practice 6	50-300	Transitioning	Over 6 months
Practice 7	50-300	Transitioning	Over 6 months
Practice 8	50-300	Transitioning	Over 6 months
Practice 9	300+	Advanced	Over 6 months
Practice 10	300+	Advanced	Over 6 months

The survey instruments (Appendix A and B) asked participants and leaders to rate their experiences and outcomes before and after using the AI assistant. Survey responses also gathered insights to understand the level of use of the patient summary and diagnosis recommendations described in the key performance metrics section below, as expressed with the following:
- Percent of patient summaries reviewed: The percent of visits where the physician reviewed the summary.
- Percent of recommendations addressed: The percent of recommendations where some action was taken.
- Percent of recommendations accepted: The percent of recommendations that were accepted.
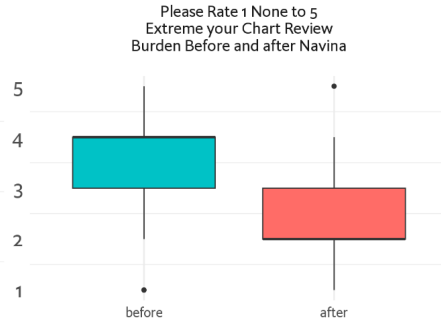- Weighted average of all clinics

Survey Results
Below are survey results from 58 clinicians in 10 practices before and after using the AI assistant.

Graphs 1-5. Pre- and Post-experience and Outcomes Using AI Assistant

Reduced chart review burden

29.5 %

Please Rate 1 None to 5
Extreme your Chart Review
Burden Before and after Navina

	before	after

Percent increase in feeling prepared for the visit

45.4%

What Percentage of Visits Do you Feel Fully Prepared for Before and after Navina

	before	after

Decreased burnout

23%

which of the Items Below Describes you Best Before and after Navina

	before	after
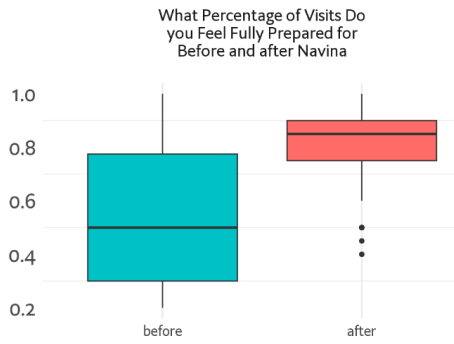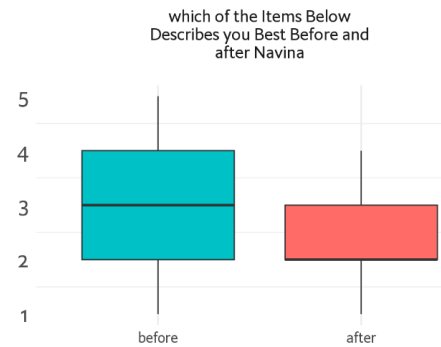
Improved satisfaction
21.7%

How Satisfied are you with
your Overall Practice Before
and after Navina

	before	after
10.0		
7.5		
5.0		
2.5		
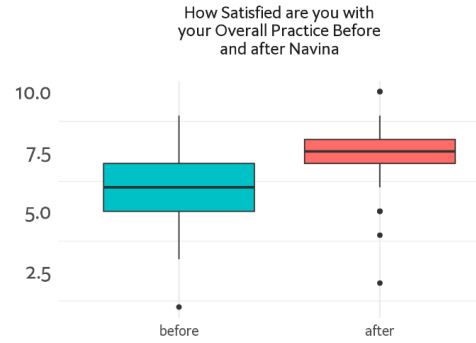
Mean time savings per visit
9 minutes

Visit preparation time reduced by
38%

On Average How Much Time
Does it Take you in Minutes
to Adequately Prepare for a
Complex Patient Visit Before
and after Navina

	before	after
60		
40		
20		
0		
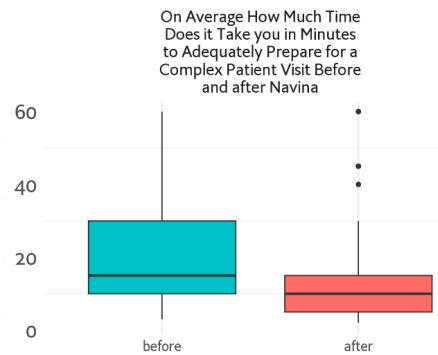
Graphs 6-8. Clinical Review and VBC Value Propositions

Provides Confidence that i Am not Missing Something
Presents Data Making it Easier to Find What i Need
Prepares Me for My Visits
Is Easy for Me to Access and Use
Improves My Workflow with Other Staff Members e g m as Coders Mr as
Improves My Daily Work Experience
Helps Me Find Data Within Ehr and Outside of the Ehr
Helps Me Accurately Capture more Patient Diagnoses
Enables Easier Chart Review
Decreases Searching Clicking and Opening Documents

0   1   2   3   4

98%
Enables easier chart review
(average of 4.32)

98%
More accurately capture diagnoses
(average of 4.36)

82%
Would recommend an AI assistant

How likely are you to recommend to a friend?

Disagree
17.9%

Strongly Agree
53.6%

Agree
28.6%
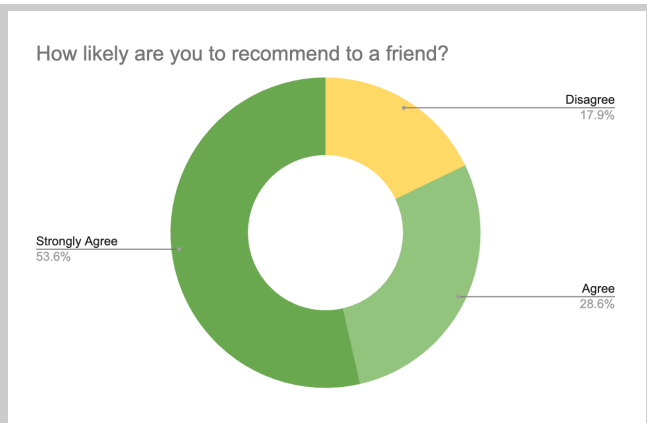
Below are key performance results from 10 practices, 1,836 physicians and 683,200 patient visits after using the AI assistant. All results are based on weighted averages of all clinics weighted by staff size.

Graph 9. Patient Summaries Reviewed and Recommendations Addressed and Accepted

85%	87%	84%
Patient summaries reviewed	Recommendations addressed	Recommendations accepted

Recommendation address actions

Hold Rate
2.0%
Ignore Rate
5.0%
Reject Rate
9.0%

Accept Rate
84.0%
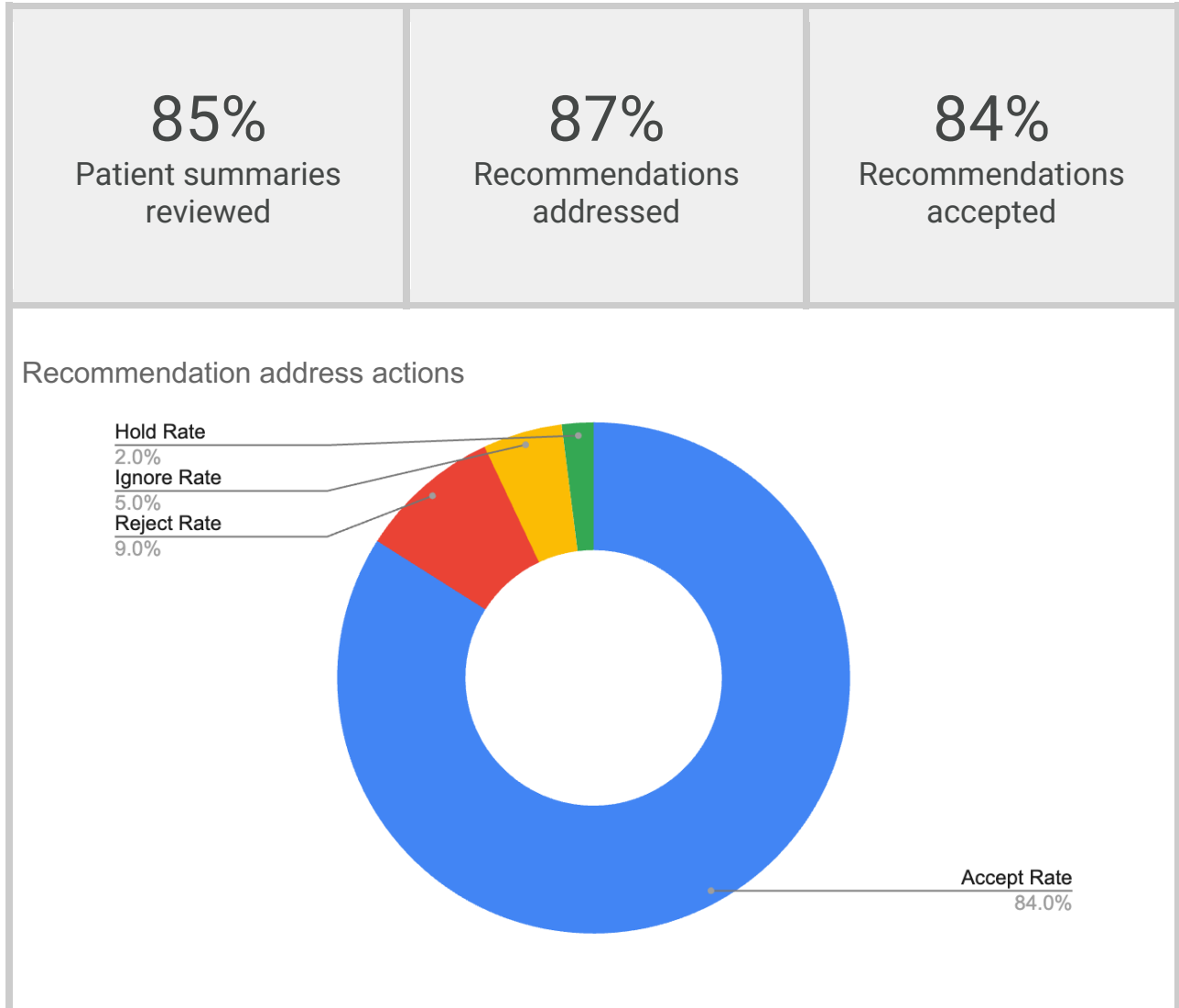
Conclusion
Our broader evaluation in this report is consistent with the prior proof of concept evaluation, adding to the evidence that an AI assistant can significantly save physicians time, relieve burden and burnout and increase physician satisfaction. The assistant's problem-oriented summary was used in the majority of visits. Its recommendations on suspected diagnoses and conditions were reviewed and accepted most of the time. The AI assistant for clinical review is a category defined by its key characteristics of efficient clinical review and accurate diagnosis capture and risk adjustment. Its major components are a natural language processor transformer model and a medical knowledge graph. The AI engine provides data ingestion, document structure and classification, clinical insights via diagnosis abstraction from free text and a clinical inference engine. These are used to create a user experience that is deeply integrated and layered in the physicians' EHR workflow and AI, which can be explainable and trustable.

Using an AI assistant for clinical review is an important innovation for primary care physicians to streamline clinical review and documentation requirements of VBP to thrive in an efficient, patient-focused VBC delivery model. Based on the insights gained through this and other related initiatives, the AAFP has developed guidance to support family and other primary care physicians in understanding and evaluating the most appropriate solutions for their practice environment.

References
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2. Arndt BG, MD, Beasley JW, Watkinson MD, et al. Tethered to the EHR: primary care physician workload assessment using EHR event log data and time-motion observations. *Ann Fam Med*. 2017;15(5):419-426.
3. Friedberg MW, Chen PG, Van Busum KR, et al. Factors affecting physician professional satisfaction and their implications for patient care, health systems, and health policy. *Rand Health Q*. 2014;3(4):1.
4. National Academies of Sciences, Engineering, and Medicine. National Academy of Medicine. Committee on Systems Approaches to Improve Patient Care by Supporting Clinician Well-Being. *Taking Action Against Clinician Burnout: A Systems Approach to Professional Well-Being*. Washington, DC: National Academies Press; 2019.
5. American Academy of Family Physicians. AAFP guiding principles for value-based payment. https://www.aafp.org/about/policies/all/value-basedpayment.html. Accessed January 4, 2023.
6. Moore K, Mullins A, Pogones S, et al. The quest for administrative simplification: what's being done. *Fam Pract Manag*. 2021;28(4):8-11.

Appendix A

Physician Evaluation: AI Assistant for Chart Review and VBC

As a participant in the AAFP Innovation Lab, we would greatly appreciate learning about your experience before using Navina and after. Below are a series of questions that ask you to think back to how you were practicing before and then after Navina.

Physician Name	
Practice Name	
Location	
AAFP member since	

What is your role with your practice? Please select all that apply:
- ❏ Owner
- ❏ Partner
- ❏ Employee

Please rate the following statements about using Navina:
1. Not at all
2. A little
3. Somewhat
4. To large extent
5. To great extent
NA

	1	2	3	4	5	N/A
Is easy for me to access and use						
Enables easier chart review						
Prepares me for my visits						
Improves my daily work experience						
Helps me accurately capture more patient diagnoses						
Presents data making it easier to find what I need						
Decreases searching, clicking and opening documents						
Helps me find data within EHR and outside of the EHR						
Provides confidence that I am not missing something						
Improves my workflow with other staff members (e.g. MAs / coders / MRAs)						

Please rate your chart review burden before and after Navina: 1. None 2. Mild 3. Moderate 4. Excessive 5. Extreme	Before	After
What percentage of visits do you feel fully prepared before and after Navina? 0% 25% 50% 75% 100%	Before	After
On average, how much time does it take you to adequately prepare for a complex patient visit before and after Navina?	Before	After

Burnout & Satisfaction

Which of the items below describes you best before and after Navina: 1) "I enjoy my work. I have no symptoms of burnout." 2) "I am under stress, but I don't feel burned out." 3) "I am definitely burning out." 4) "I think about work frustrations a lot. It won't go away." 5) "I feel completely burned out. I may need to seek help."	Before	After
Comment:		
How satisfied are you with your overall practice before and after Navina: Scale of 1 to 10 with 10 being most satisfied	Before	After
Comment:		

Net Promoter Score

How likely is it that you would recommend Navina to a friend or colleague? Scale of 1 to 10 with 10 being most likely?	
What would you say to a colleague about Navina:	

Appendix B
Leader Evaluation: AI Assistant for Chart Review and VBC

As a participant in the AAFP Innovation Lab, we would greatly appreciate learning about your experience before using Navina and after. Below are a series of questions that ask you to think back to how you were practicing before and then after Navina.

Physician Name	
Title	
Practice Name	
Location	
AAFP member since	

Why did your organization decide to implement Navina:

Please rate your organization's level burden for these specific tasks at your organization, before and after the use of Navina:
1. None
2. Mild
3. Moderate
4. Excessive
5. Extreme

	Before	After
Chart review for visit preparation		
Capture accurate patient risk adjustment scores (RAF & HCC)		
Capture diagnoses		
Physician coder handoffs		

Please rate the following statements about Navina in impacting your organization:
1. Not at all
2. A little
3. Somewhat
4. To large extent
5. To great extent
NA

	1	2	3	4	5	N/A
Ensures more accurate diagnosis capture						
Helps our VBC outcomes by improving RAF accuracy						

Improves workflow between physicians, Coders /& MRAs						
Allows physicians to effectively manage their patient data						
Makes it easier for clinicians to find what they need						
Creates an efficient coder-physician workflow						

How likely is it that you would recommend Navina to a friend or colleague? Scale of 1 to 10 with 10 being most likely?	
What would you say to a colleague about Navina?	