

Stop Physician Burnout! Use AI and ML Enabled Digital
Platforms

NAACOS Fall Conference 2023

Chair: Dr [Tom Kloos](#), Atlantic ACO and Optimus
Speakers:

Dr [Jim Barr](#), Atlantic and Optimus ACO

[Dr Nathan Moore](#), BJC ACO;

[Anna Taylor](#), MultiCare Connected Care

Atlantic & Optimus Healthcare Partners ACOs 2023-2024 Strategic Priorities

*Helping physicians and practices **Care Better** for their patients.*

*Helping patients **Care Better** for themselves.*

*Helping people **Care Better** for each other.*

ACO Innovation Workgroup

Purpose of ACO Innovation Workgroup

- **Description**

This workgroup will evaluate new technologies, processes and solutions that can improve the **performance** of ACO practices. Performance includes the Triple AIM of high-**quality** outcomes, patient **experience**, and **affordable** healthcare. The fourth AIM is improving the efficiencies and impact of ACO practice care teams. Solutions must **un-burden the physicians, practitioners and practice care team members while achieving the Triple AIM.**

- **Support the design and development of SMART Practices**

*Automation, efficiencies, impact and scale **that compliment the personal touches of physicians and care team members.***

ACO practices for success and opportunities

These efforts will prepare in new value-based within new healthcare of



5 ACO Use Cases for Innovation Workgroup:

1) Delivery of Patient Insights at the Point-of-Care

A platform that aggregates patient data from payer claims, pharmacy claims, labs, census bureau, and diverse EMR clinical/administrative extracts. Analysis is then performed, and a desktop pop-up occurs when a patient chart is opened identifying that patient's coding gaps, quality gaps, social vulnerability index and ADTs over the past 12 months.

In addition, a schedule view provides morning huddle insights, and a patient drilldown view displays all patient information in an organized format (less EMR foraging).

Performance dashboards allow management of patient attributions, provider and team platform adoption, quality performance, practice and provider level performance, cost and utilization reporting, and drilldowns to the individual patient level for outreach.

Outcomes:

- 10% improvement in risk score accuracy after first 6 months
- 7.5% improvement in quality performance after first 6 months
- Provider testimonies of saving 30 minutes per day



5 ACO Use Cases for Innovation Workgroup:

2) Acute, Chronic and Health Maintenance Management

A “digital nurse assistant” that supports evidence-based patient management through a personalized mobile app. The platform utilizes secure texting for workflows including:

- **Patient Communications** - for appointment or testing reminders, gaps-in-care management, acute visit follow-up assessments, symptom assessment, physician & provider alerts, chronic disease management, and the option of remote patient monitoring and CCM services.
- **Physician & Provider Communication** – for patient alerts and evidence-based reminders/ decision support, for providers to request a reminder from the platform to re-test a patient in a specific time period, to notify patients testing was all negative, ...
- **Practice Team Communications** – for patient scheduling, appointment and testing reminders, managing patient requests, managing provider requests for team member actions

Outcomes: >90% of patient communications within the platform did not need to be elevated to the physician, provider, or practice team. Provider and Patient experience:

Best thing the ACO has ever done for me!!

ok, will do. thank you. and I do like this app very much! great idea.

5 ACO Use Cases for Innovation Workgroup:

3) Behavioral Health Collaborative Care Model

A collaborative care patient engagement and management mobile behavioral health platform.

Services include:

- Customized patient mobile app to perform BH screenings, education, coaching and self-management efforts.
- Urgent/Crisis services
- A virtual behavioral health care manager to monitor patients within the platform's patient registry, perform patient outreach and escalate specific cases for more attention.
- A psychiatrist to help review patient escalations, offer the primary care provider care treatment recommendations, and if needed coordinate patient referral for in-person professional care (payer BH networks, tele-BH options).
- Ongoing collaboration with the primary care practice clinical coordinator and physicians/providers as needed.
- Billable CoCM services for patients that qualify



Unburdened practice

5 ACO Use Cases for Innovation Workgroup:

4) Medication Therapy Management

A predictive analytic platform with evidence-based medication information to assist with identifying and managing patients at high risk for hospitalization, acute care utilization, and poor health outcomes related to medication therapy.

Services include:

- Risk Prioritization Analysis of ACO attributed patients – improving the accuracy and efficiency of ACO Clinical Pharmacist touches, improving patient outcomes and preventing patient harm.
- Focused Patient Action Plans
 - For ACO Clinical Pharmacist interventions
 - For provider and practice team interventions
 - For Integrated Care Team management (case managers, workers, community health workers)
- Eliminate the need for additional pharmacy FTEs



5 ACO Use Cases for Innovation Workgroup:

5) Spiritual Health Collaborative Care Model

Services include:

- Spiritual Health Questionnaire (SHQ2)
- Spiritual Health Assessment (SHA)
- Spiritual Care Plan (SCP)
- Integration between the ACO's
Spiritual Health Specialist (Chaplain)
and the Clinicians





MultiCare

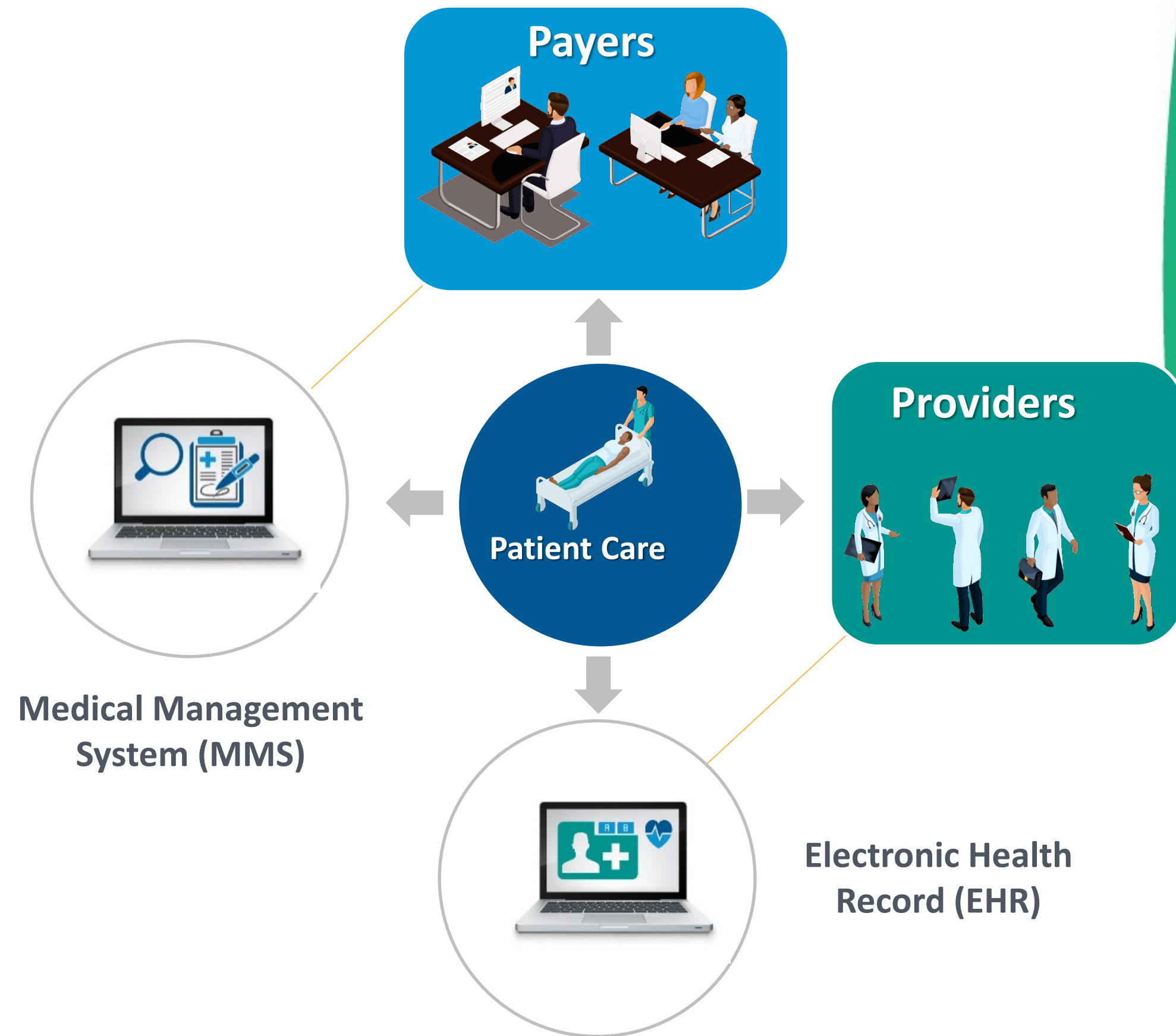
Connected Care™

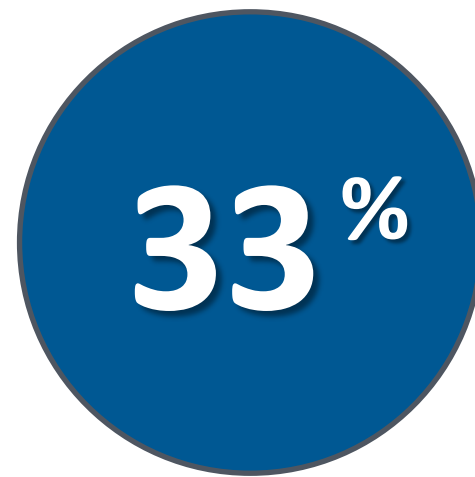
Automating Prior Authorization Utilizing Open Standard APIs (FHIR)

A Case Study

Prior Authorization A Multi-Dimensional Challenge

- Different technical workflows and tools
- Administratively burdensome for everyone
- Can delay necessary care for patients



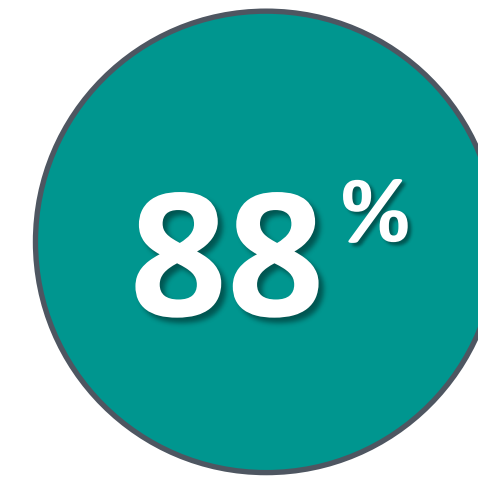


Report Adverse Events for Patients

33% of physicians reported that prior authorization delay led to a **serious adverse event**.*



*This includes **hospitalization** (25%), and **disability** or even **death** (9%) for a patient in their care.



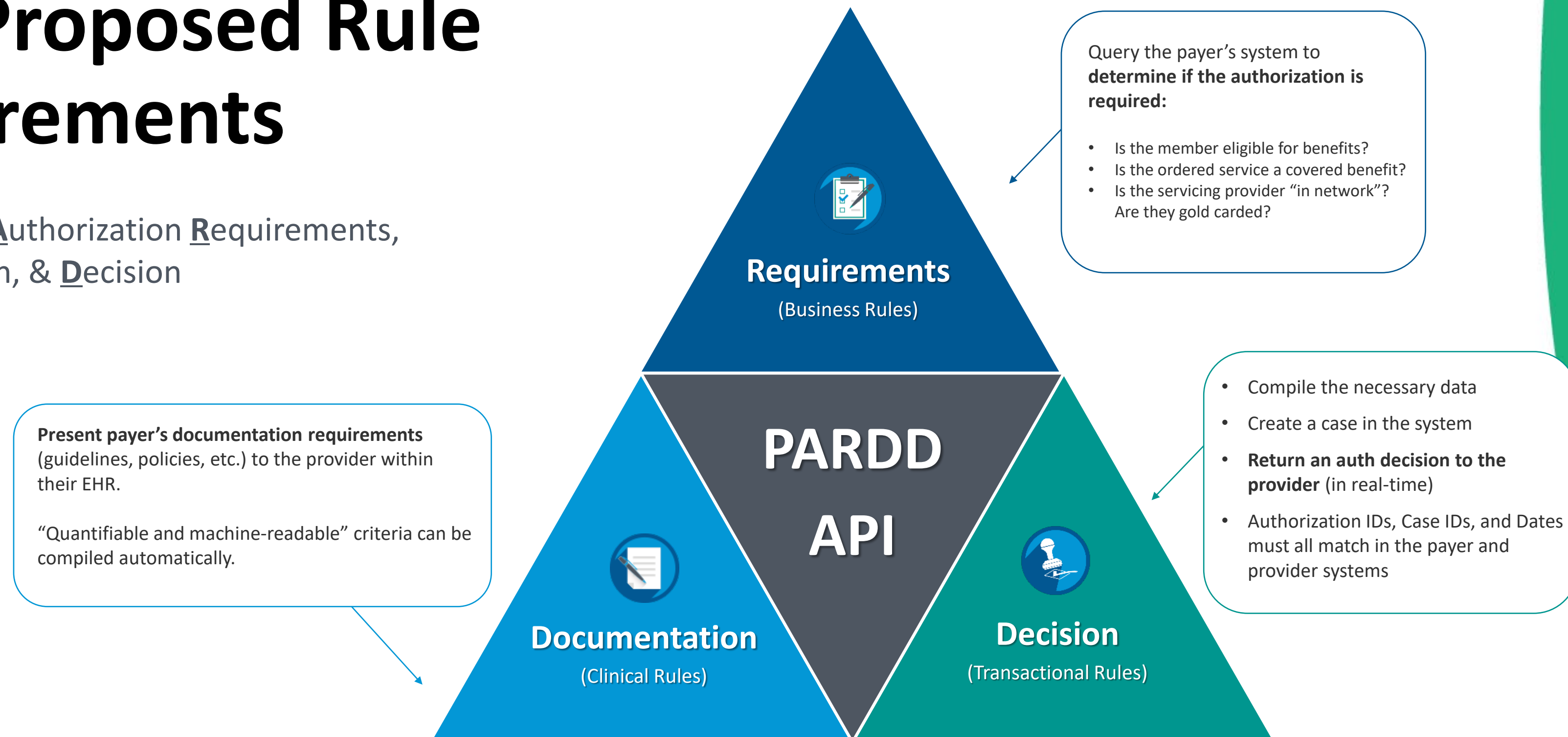
Say the Administrative Burden is High

88% of physicians in the survey reported that the administrative burden associated with prior authorization is **high** or **extremely high**.

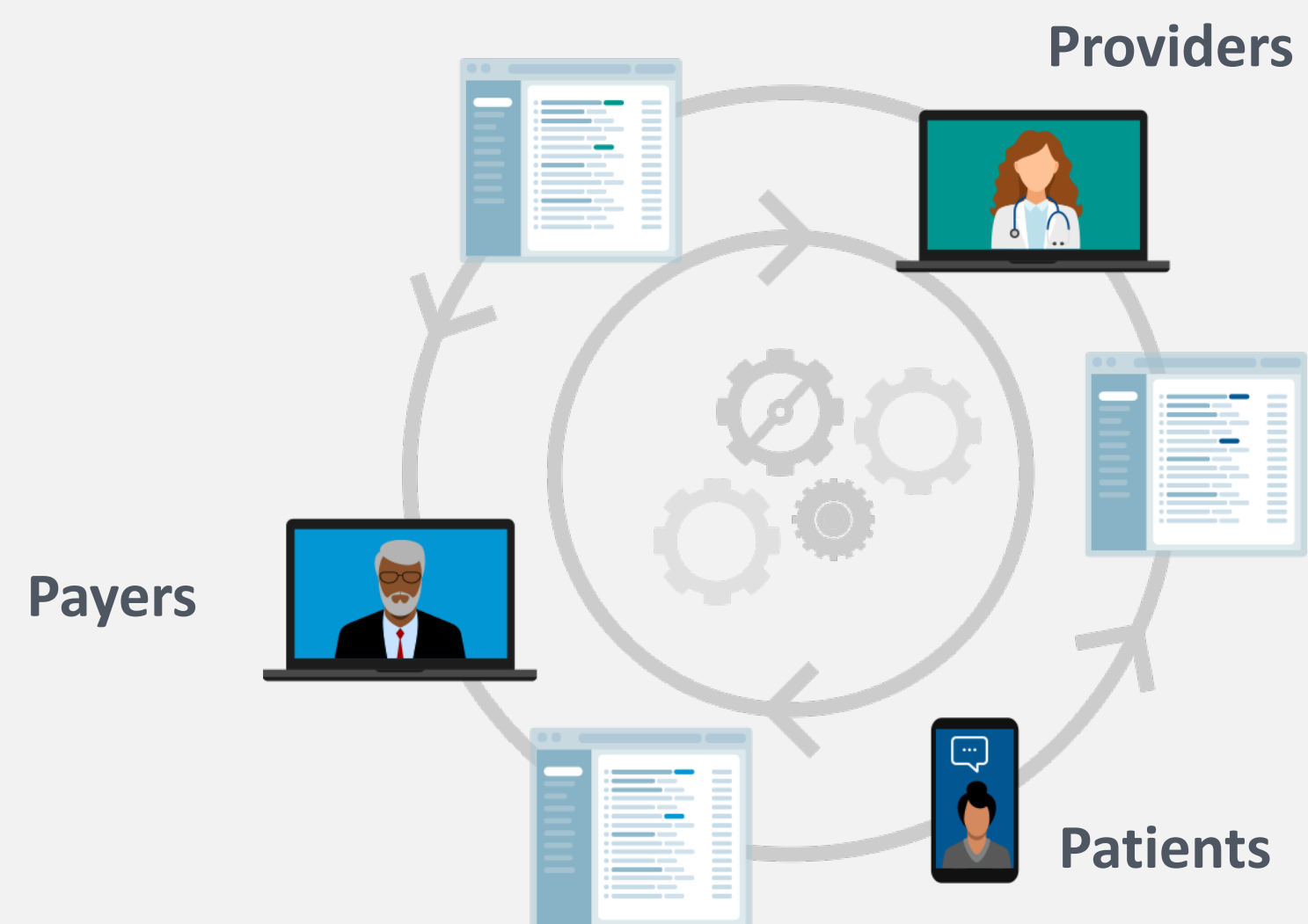


CMS Proposed Rule Requirements

PARDD: Prior Authorization Requirements, Documentation, & Decision



Interoperability



- Access, exchange, and cooperatively use data among stakeholders
- Enables seamless and secure exchange, and utilization of health care information

HL7[®] FHIR



Fast Healthcare Interoperability Resource[®]

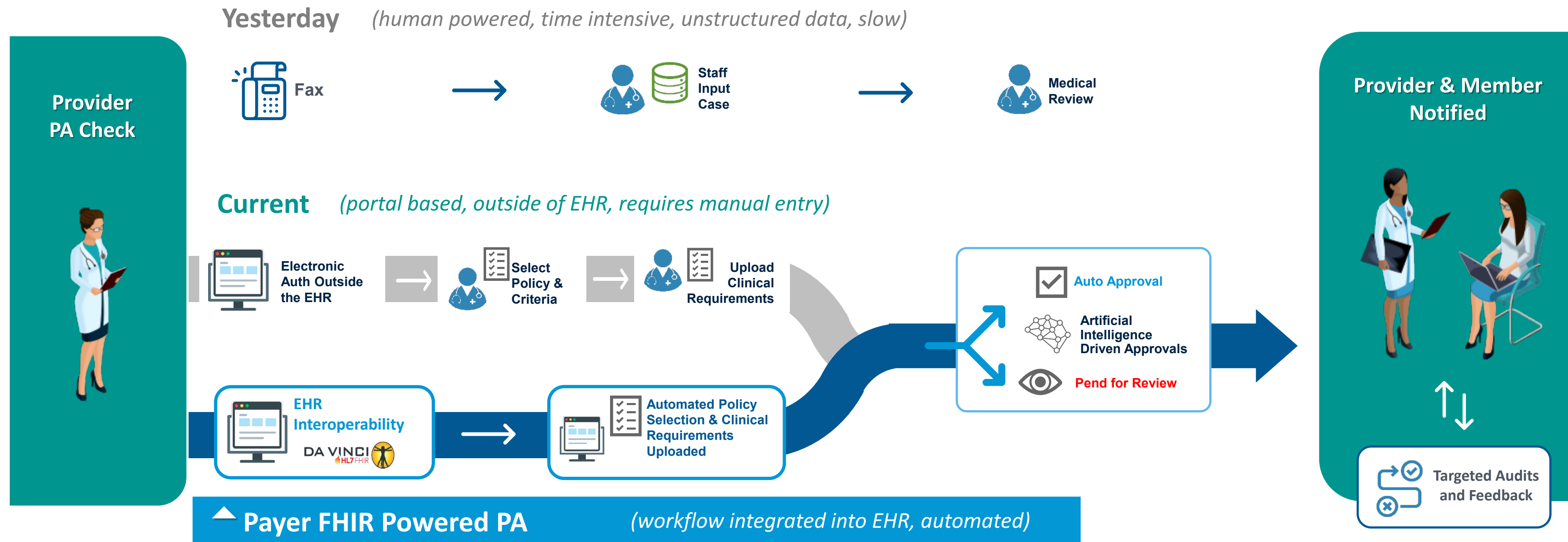
- Produced by the HL7[®] organization
 - Specification for the exchange of the resources
 - Content model in the form of “resources”

HL7[®] Da Vinci Project Membership



- The HL7[®] Da Vinci Project is a national consortium bringing payers, EHRs, and providers together across the U.S.
- Collaborated to create the HL7 Da Vinci Implementation Guides (IGs)
- Working to accelerate adoption of the HL7 Da Vinci standard to support value-based care data exchange

Prior Authorization Transformation



Driving PA Automation with Rules Engines

Member & Provider



- PA Code Check
- Eligibility Check
- PA Exceptions



PA & Eligibility Check

- Auto Approve OR Pend Policy
- Policy Criteria Met / Not Met



Applicable Medical Policy and Clinical Requirements



- Automation Rules
- AI + NLP



PA Submission



Decision Engine

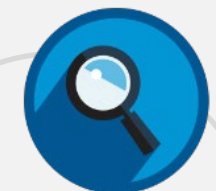


Determination

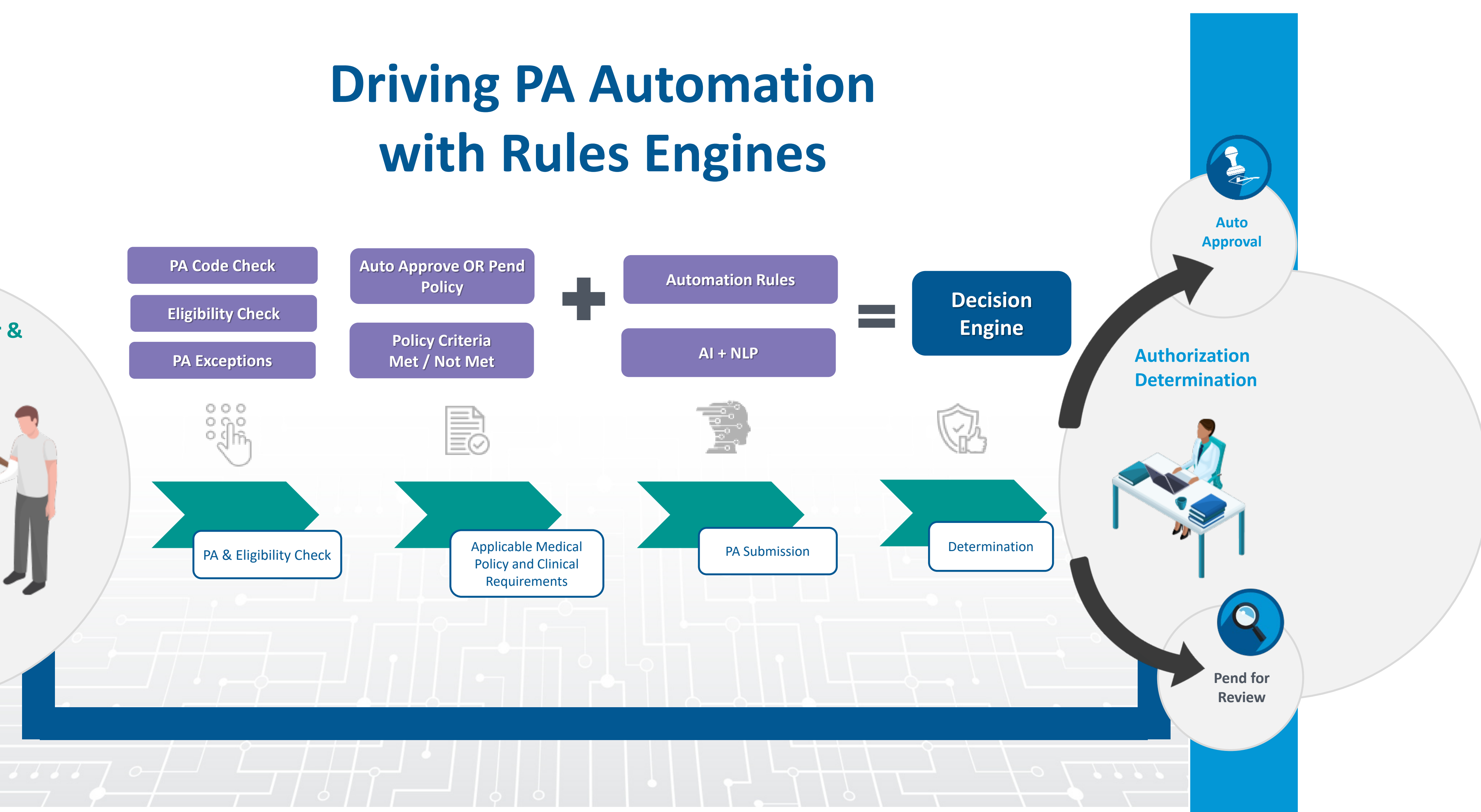
Authorization Determination



Auto Approval

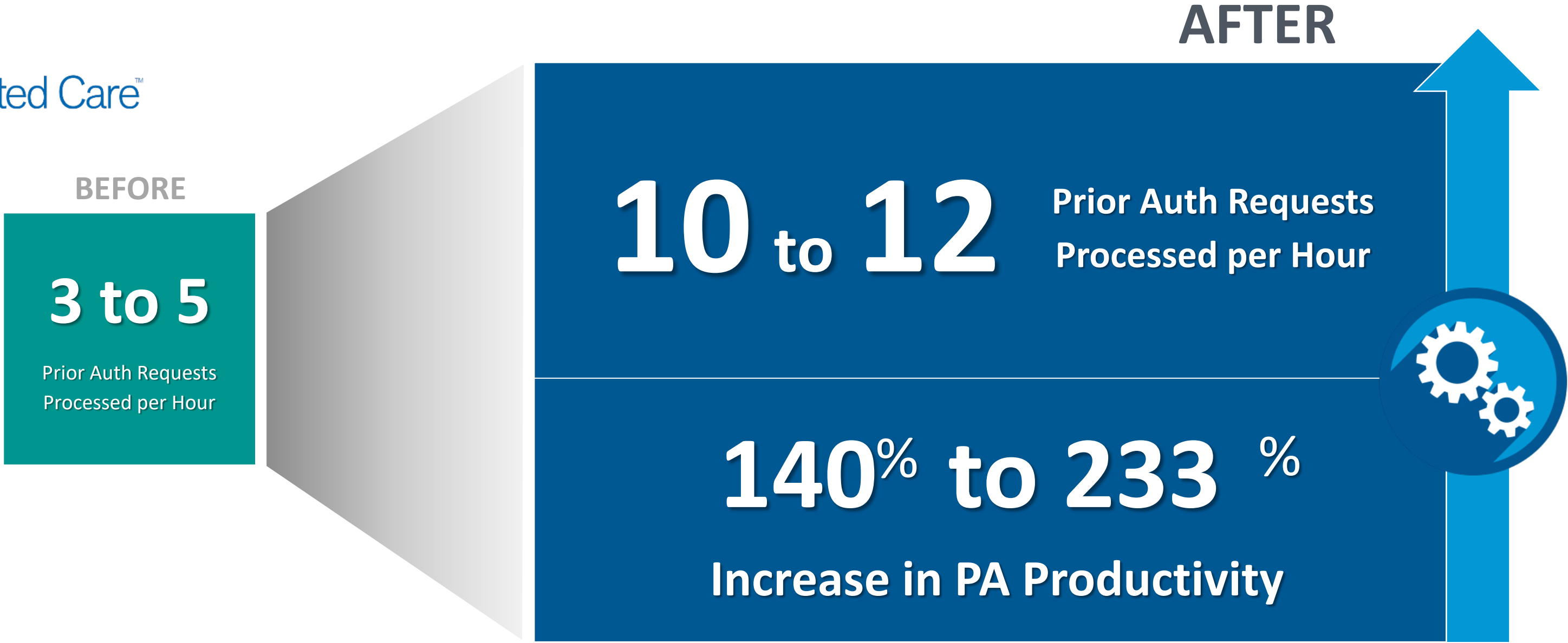


Pend for Review



Provider Utilization Management Team Feedback

After 90 days of usage at MultiCare...



Payor SmartAuth Metrics



41 %

Auto Approved*

No human review required.



Over 300

submissions where no PA was required and the provider had the response within the EHR almost immediately



**Regence Nurse Review
Time Studies**

IN PROGRESS

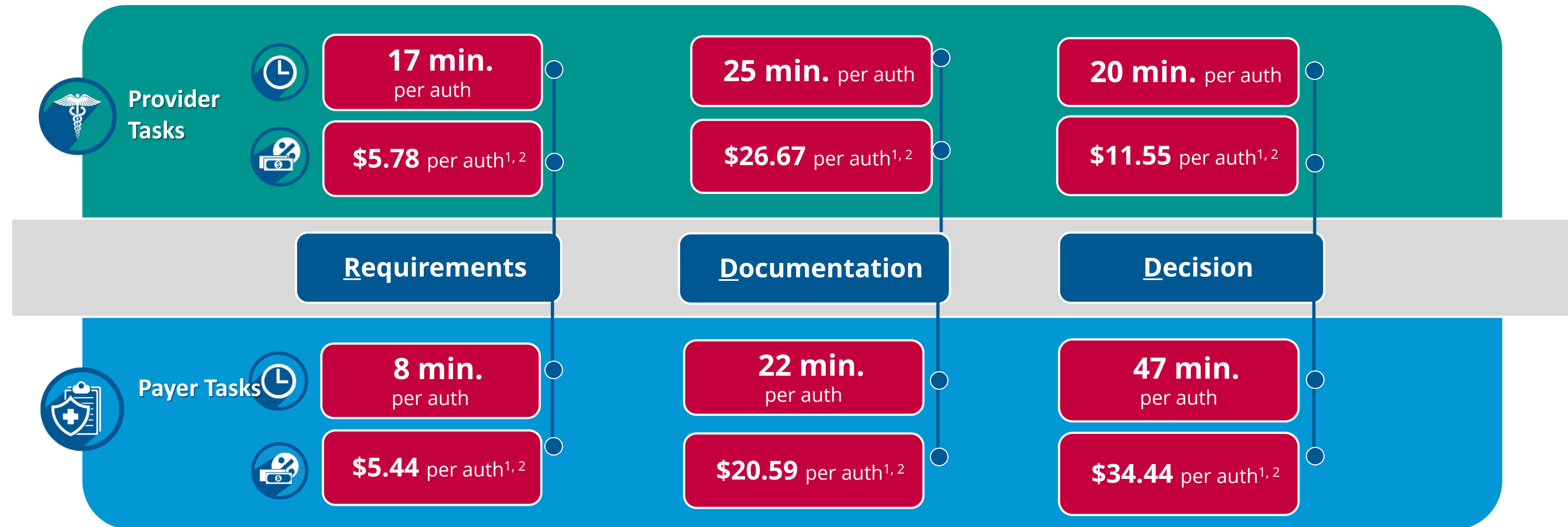


**Evaluation of Codification
Accuracy & Efficiency**

IN PROGRESS

* Based on 100 PAs submitted by MultiCare

Preliminary Findings/Analysis



1. Financial data uses hourly rates from the CMS Proposed Rule.

2. Financial data uses task time & frequency data proprietary to MCG. List of tasks excludes peer-to-peer, external review, appeals, and follow-on authorizations.

Using Machine Learning to Enhance Advance Care Planning

Nathan Moore MD

BJC Accountable Care Organization

St. Louis, MO

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Background

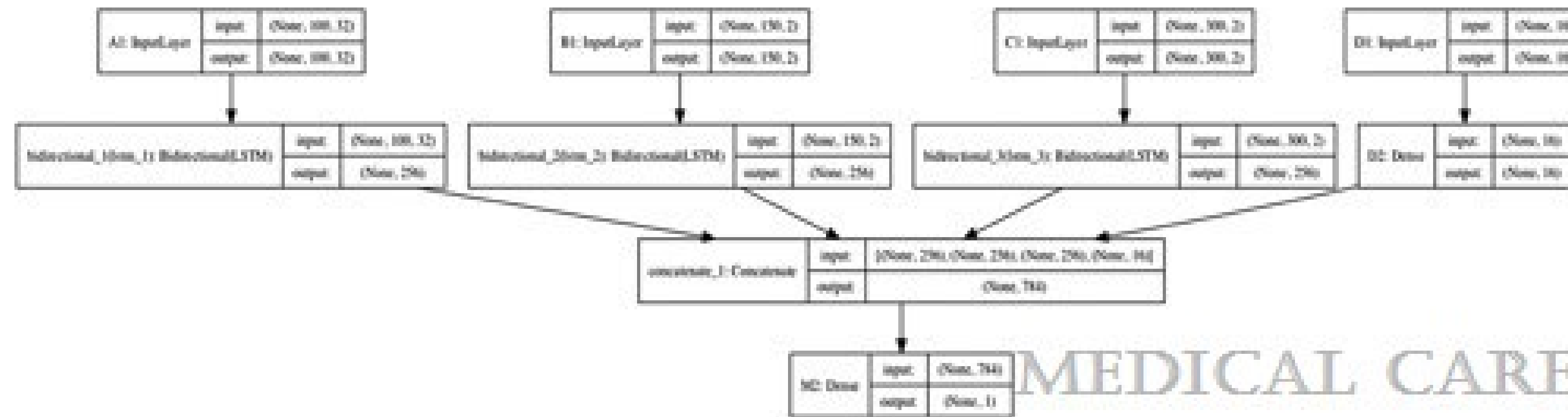
- Advance care planning is critically important for improving quality of care, increasing patient/family satisfaction, and reducing unnecessary costs
- ACP and palliative care are significantly underutilized in nearly every health system in the US
- Major barriers:
 - Accurate identification of high-risk patients
 - Engaging providers to participate in goals of care discussions

High Risk Inpatient Identification: Machine Learning

Epic data is obtained 24 hours after admission analyzing 500+ variables including:

1. Diagnoses
2. Vitals
3. Labs
4. Medications/therapies

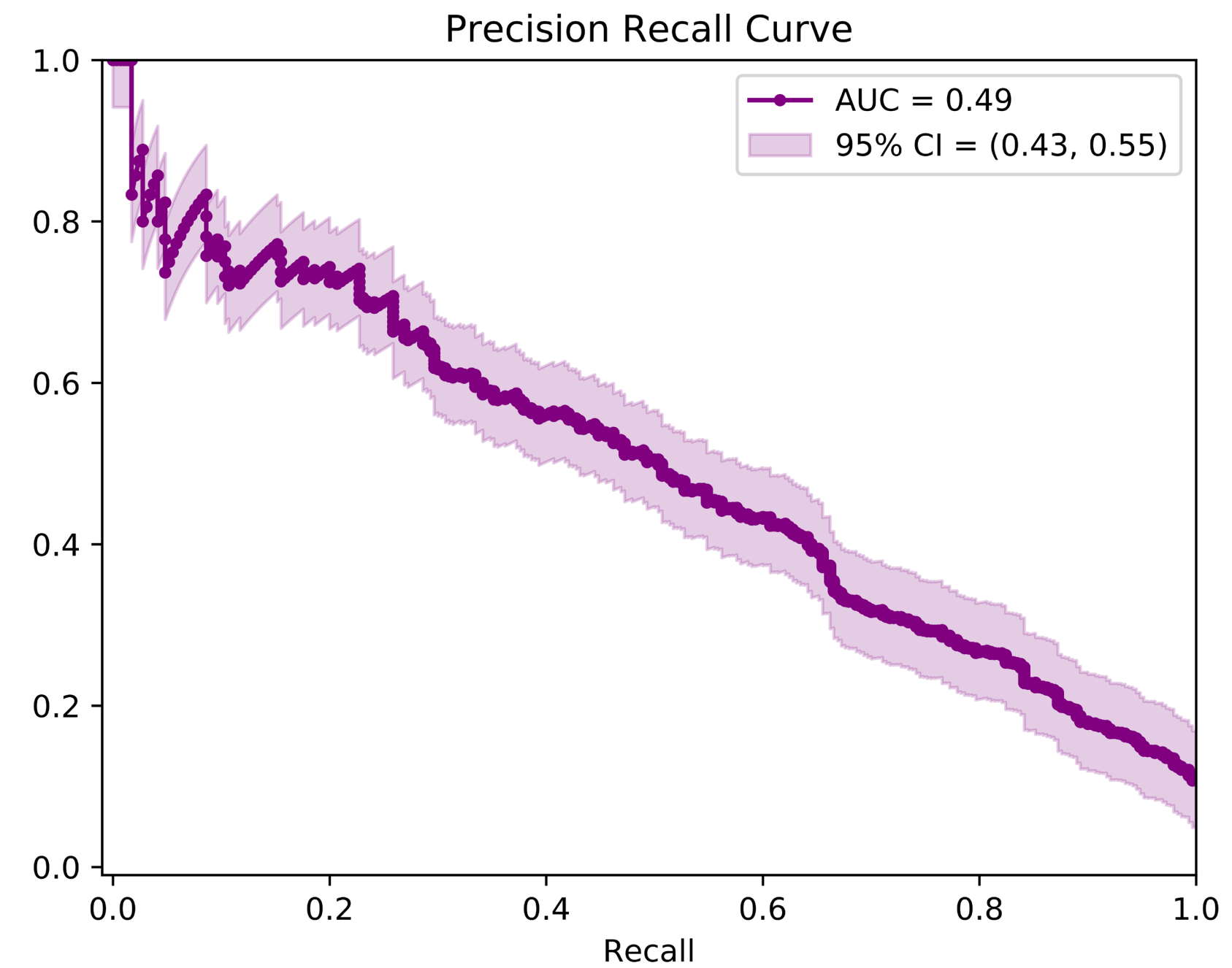
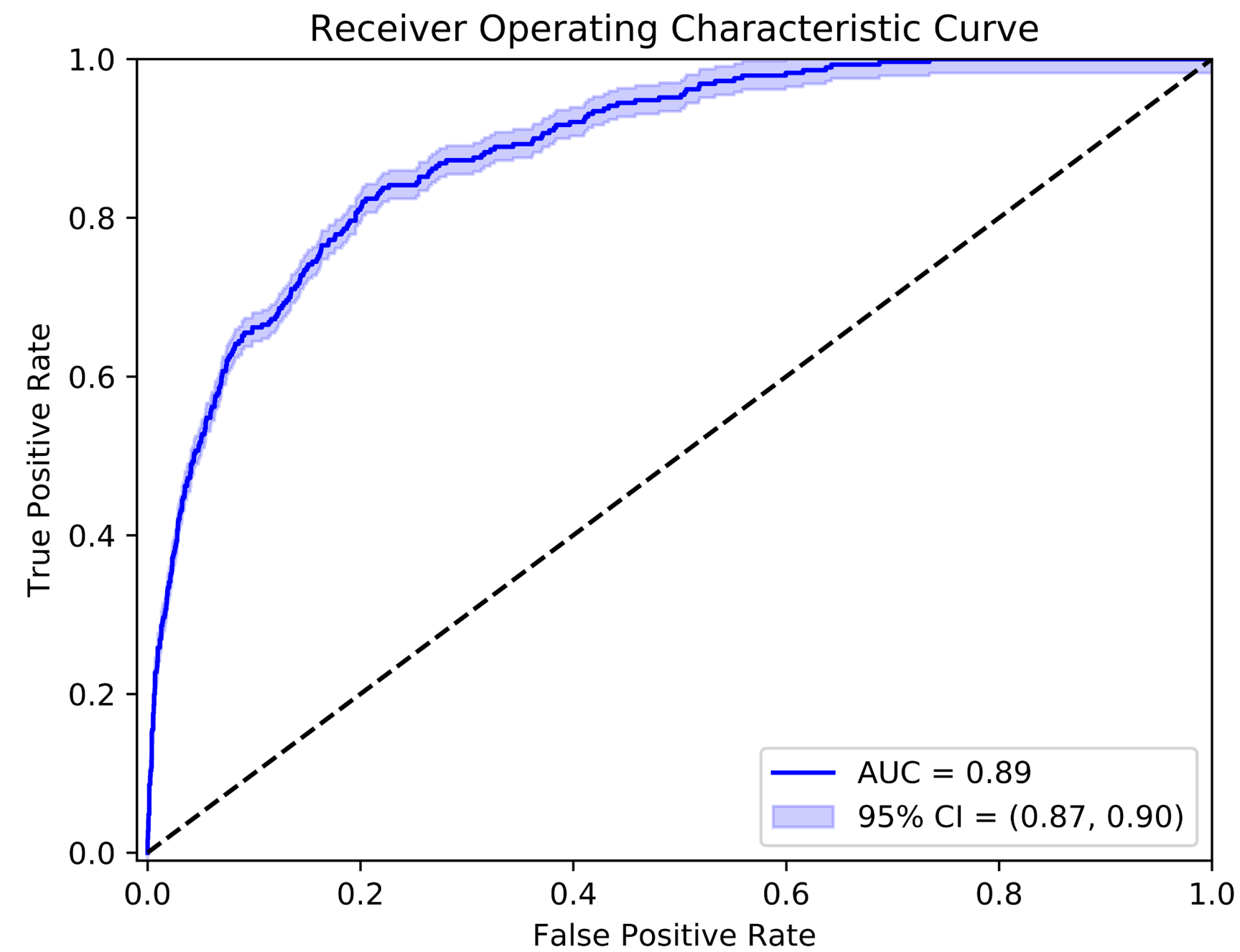
Model Structure



- Three bidirectional long short-term memory (LSTM) models
- 100 most recent diagnosis, procedure, and medication codes (A);
 - 150 most recent laboratory test names and values (B)
 - 300 most recent vital sign names and values (C).

A fourth neural network model (D) was comprised of demographic and social history variables.

Prediction Performance



Death or hospice occurred in 1.4% of low encounters, 5.2% of medium encounters, and 18% of high risk encounters.

Inpatient TGI Pilot

- Hospitalist Service
- Non-ICU
- Full code, no documented goals of care
- Jan – July 2021
- Community hospital

Basic Demographics

| | Control (N=353) | TGI Intervention (N=189) |
|-----------------------|--------------------|-----------------------------|
| Age (years) | | |
| Mean (SD) | 77.4 (10.6) | 77.5 (10.6) |
| Race | | |
| White | 305 (86%) | 164 (87%) |
| Black | 42 (12%) | 22 (12%) |
| Other | 6 (2%) | 3 (2%) |
| Gender | | |
| Female | 178 (50%) | 97 (51%) |
| Male | 175 (50%) | 92 (49%) |
| COVID Status | | |
| COVID- | 322 (91%) | 171 (90%) |
| COVID+ | 31 (9%) | 18 (10%) |
| Charlson Score | | |
| Mean (SD) | 7.66 (3.28) | 7.60 (2.79) |

Outcomes

- 87% response rate
- Palliative care consults 33% of time

Outcomes

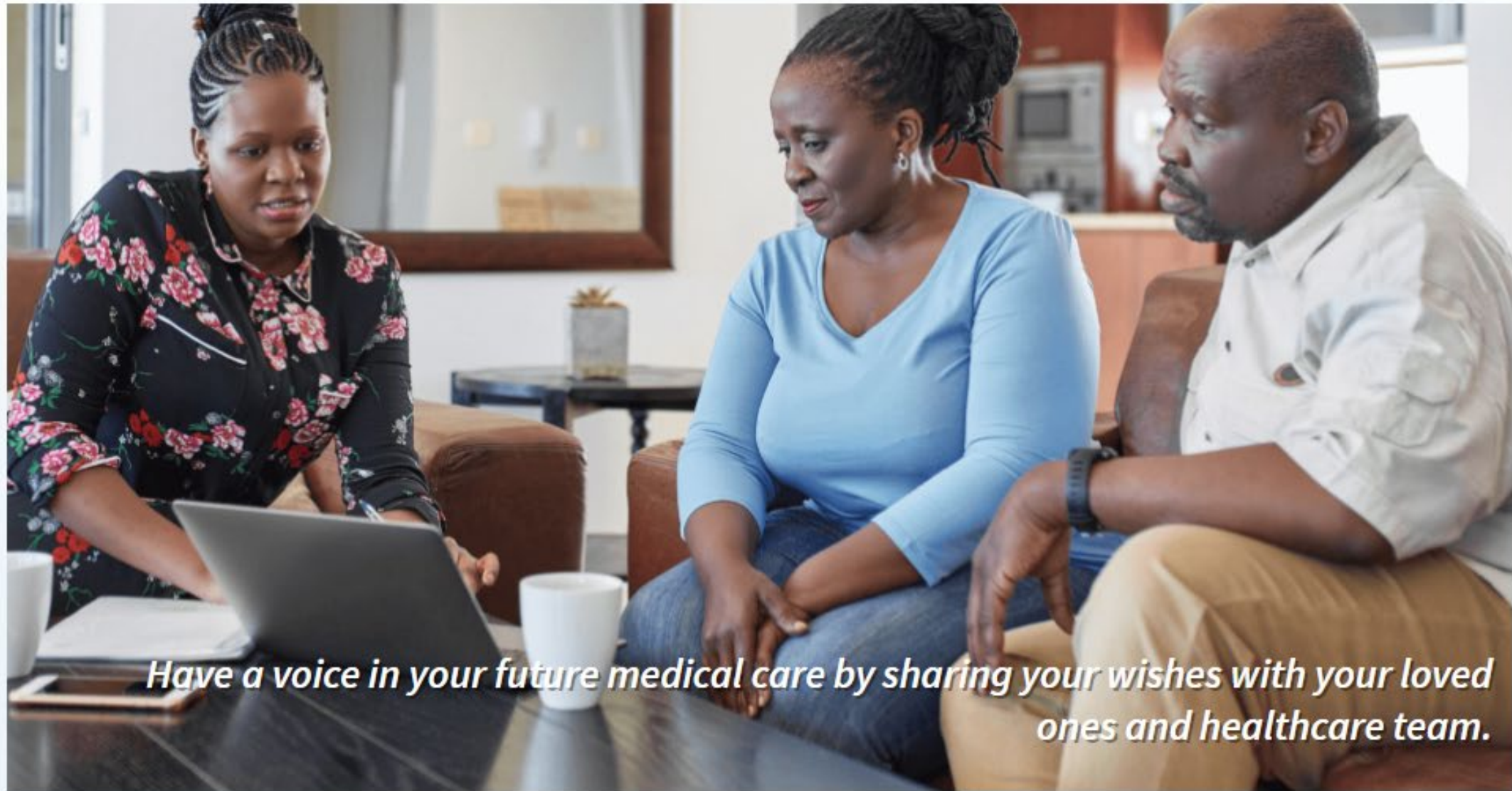
| | | Cont rol | TGI | P- valu e |
|---|---------|-------------|---------|-----------------|
| Documented Goals of Care/ ACP Discussion | | 14% | 58% | <0.001 |
| Discharge Code Status | Control | TGI Group | P-value | |
| Full Code | 92% | 80% | <0.001 | |
| Comfort Care Only | 2% | 3% | | |
| Limited Code | 6% | 17% | | |

Outpatient TGI

- Generate list of high risk patients for PCP practices quarterly
- Build in Advance Care Planning as part of Annual Wellness Visits
- Outpatient palliative care services for ACP and end of life/symptom management
- Home-based palliative care for patients who need significant support

MyChart Integration

Advance Care Planning



Have a voice in your future medical care by sharing your wishes with your loved ones and healthcare team.

Health Care Agents ⓘ

You currently have no health care agents.

Planning Documents ⓘ

If a document should be removed, send us a message.

Documents On File

There are no documents of this kind to display.

Add a document

Please name the document you upload as precisely as possible to aid our team in handling it appropriately. Common documents include: Advance Directives and Living Will, Power of Attorney, and/or three documents that must be signed by a physician before uploading - Physician Orders for Life-Sustaining Treatment (POLST), Transportable Physician Orders for Patient Preferences (TPOPP), and Out-of-Hospital DNR (OHDNR).

[Back to the home page](#)

Helpful Resources

These resources may help you make care decisions and prepare for conversations with your family, friends and doctors. These links are for different situations and you likely will not need all of them. Note: all content and information on the websites are provided by outside organizations for informational purposes only. It is not intended to be relied upon as medical and/or legal advice and is not a substitute for legal advice and/or healthcare advice. BJC Healthcare and Washington University have no control over, or responsibility for, such content or any personal or financial information you provide to these websites.

- Prepare for Your Care**
Step-by-step program with video stories to help you have a voice in your medical care.
- The Conversation Project**
Helping people share their wishes for healthcare.
- Get Palliative Care**
Living with a serious illness? Advice to improve quality of life along with curative efforts.
- Missouri Bar Association**
Durable Power of Attorney for Healthcare forms and information from the Missouri State Bar.
- Illinois Bar Association**
Illinois State Bar information on healthcare decisions.

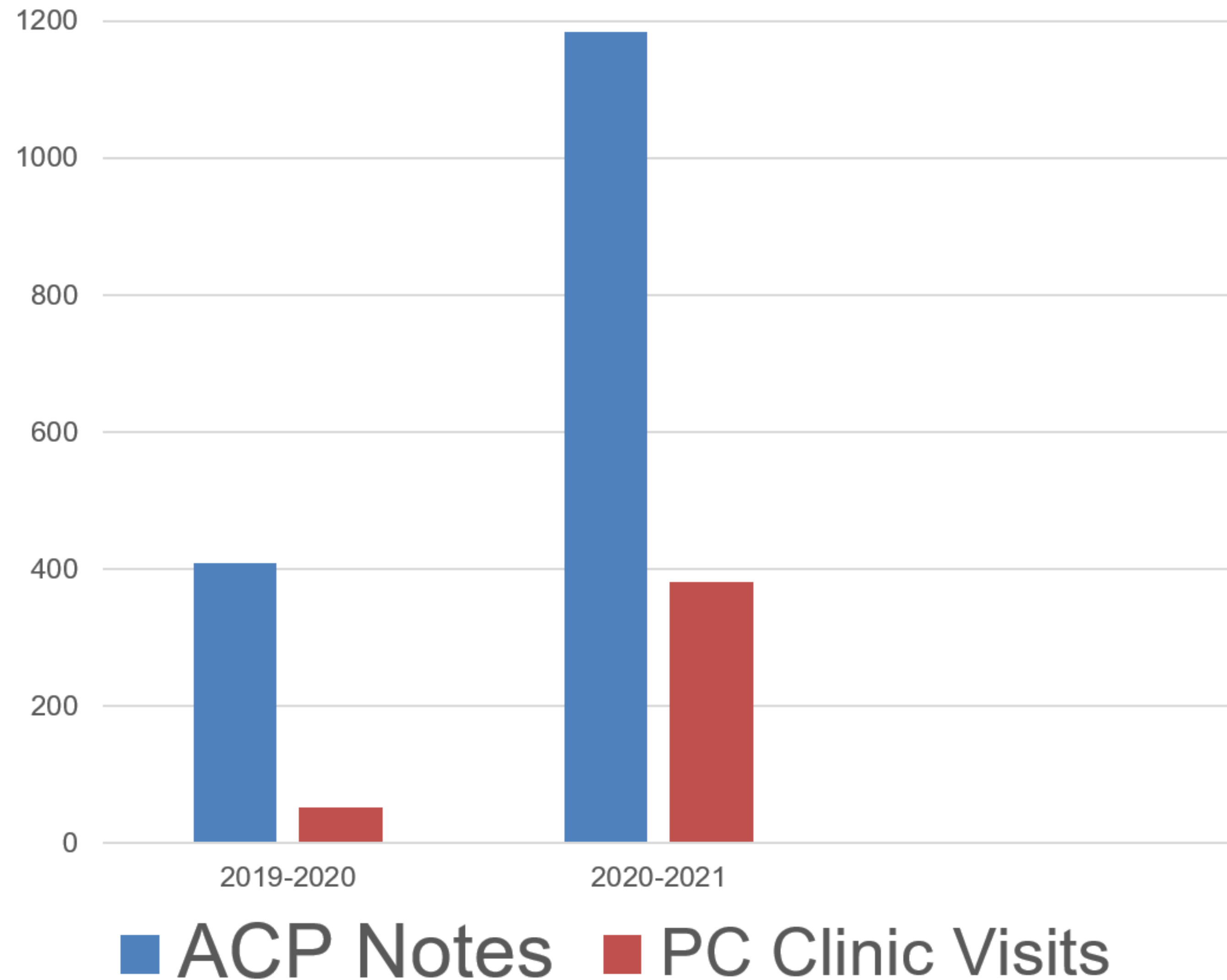


Christopher L. Schenewerk, MD

By some miracle, I got them into assisted living and we are considering hospice care.

Aug 18, 6:15 AM

BJH Advance Care Planning and PC Clinic Growth



Communication Skills Academy

- Communication skills sessions utilizing highly trained standardized patients
- Sessions typically last 4 hours and consist of 6 providers with a standardized patient and highly trained instructor
- Clinical vignettes are tailored for each specific audience (e.g. hospitalist, outpatient PCP, intensivists, etc.)
- We have trained over 300 providers

Lessons Learned

- Machine learning algorithms can be critical for automating identification of high priority patients or conditions
- Work backwards - algorithms are useless without appropriate clinical workflows and training
- Strive for high signal:noise to drive provider engagement