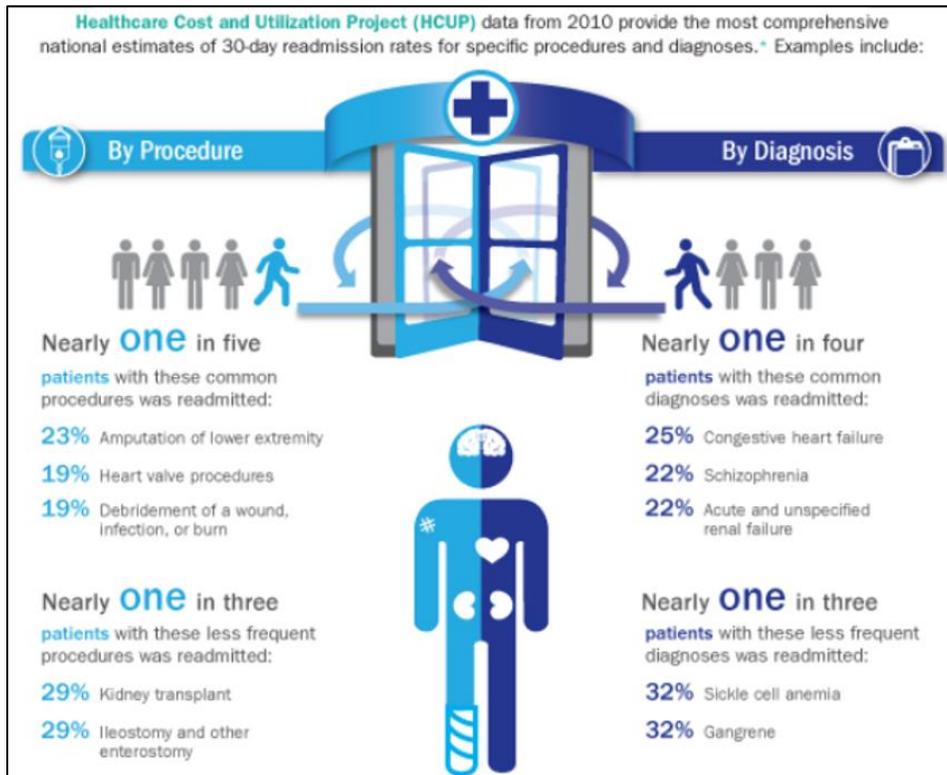


## Providing Better Patient Healthcare and Reducing Hospital Readmissions Rate with Artificial Intelligence Models

**PROBLEM WE ARE TRYING TO SOLVE:** Hospital readmissions costs are estimated at \$26 billion annually (Wilson, 2019). Readmission also causes untold suffering and anxiety to patients and their families. Hospital readmissions can indicate a breakdown in caregiving when transferring a patient from one care setting to another.<sup>1</sup> **Blue Cross NC's purpose statement "we will not stop until healthcare is better for all" compels us to focus on better serving our members and the healthcare providers who care for them.**



Source: [HCUP-US Statistical Briefs Chronological \(ahrq.gov\)](https://www.ahrq.gov/hcup-us-statistical-briefs-chronological), briefs #153 and #154

### **OUR APPROACH: Identify individuals at risk for hospital readmissions using AI**

Blue Cross NC's Innovation Garage team developed CarePath, an advanced deep learning factory approach for creating predictive models that identify target populations at risk for hospital readmissions. This enables a more focused, personalized patient intervention that is implemented during the transition from the hospital to the home.

This model applies a readmission risk score to members currently undergoing inpatient procedures. Members are further prioritized by:

- Probability of readmission (20% or greater)
- Low PCP engagement
- 8+ Medications

Every model produced by CarePath receives clinical review and approval via the CarePath Medical Council, a governing body for ethical use of AI. CarePath models produce *explainability reports* which reveal the basis for the model's prediction and are scrutinized for potential for bias or harm.

**OUR FOCUS: Understand predictors for hospital readmissions to identify target populations**

We leveraged the innovative partnerships with our network of Value Based providers to:

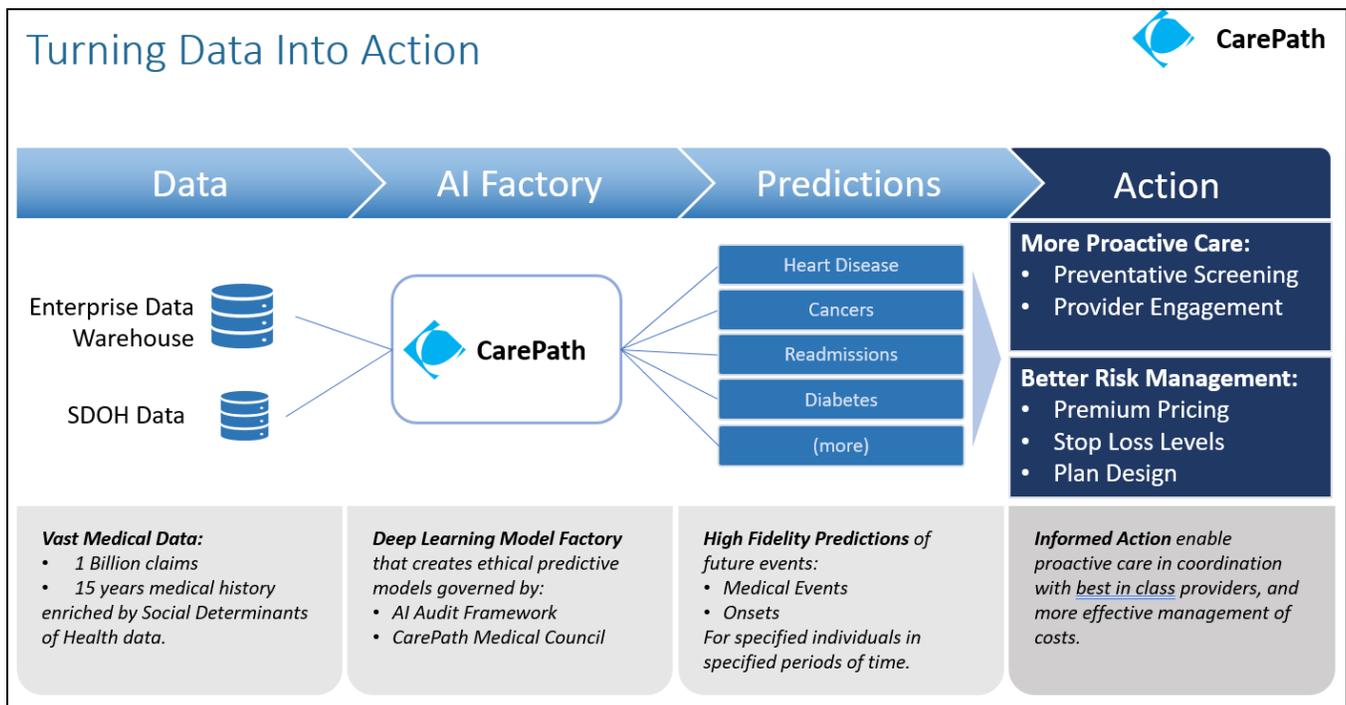
- Provide actionable data
- Decreased 30-day readmission rates
- Increased primary care engagement

**THE SOLUTION: CarePath, a deep learning ecosystem creating predictive models for healthcare operations**

CarePath deep learning models predict medical onsets and events for specified individuals in specified periods of time to enable preventative care.

Hospital to Home (H2H) Readmissions Model

- Predicts individuals at risk of preventable readmission when going home from hospital
- Approved by CarePath Medical Council for operational use



**THE RESULTS: Predictive models delivering 4X more efficient healthcare interventions**

- Care Management team’s engagement success rate rose from 12% to 57%
- Care Management team can focus on serving people who need intervention most urgently

Additional Benefits:

- Identifies candidates for other Care Management programs (i.e. Complex Case Management)
- Previous methods were decommissioned

**WHAT’S NEXT**

We are continuing to leverage the CarePath AI factory to deliver additional deep-learning models that provide predictions and recommendations for use cases in healthcare and health finance.

CarePath is a unique scalable platform with proven high value potential:

- Strong initial results
- Strong commercial interest from other parties

**OUR TEAM**

- Mitch Quinn, AI Applied Research Scientist
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- Suzanne Jacobs Manager, Innovation Garage
- Josh Gredvig, Data Scientist
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References

<sup>1</sup> [The Economic & Emotional Cost of Hospital Readmissions | HealthStream](#)