

# Amplify: AI-Powered Bad Debt Risk Management

## CUSTOMER

A large hospital system

## PROBLEM

Like many hospitals in the US, the client has to manage tens of millions of dollars a year in unpaid patient accounts. Generally, a patient's unpaid account is considered "bad debt" 120 days after the initial statement is sent. Once it is considered bad debt, the unpaid balance may be sent to a collection agency. Early identification of patient accounts that are likely to go into bad debt presents the hospital the opportunity to intervene, for example by offering a payment plan.

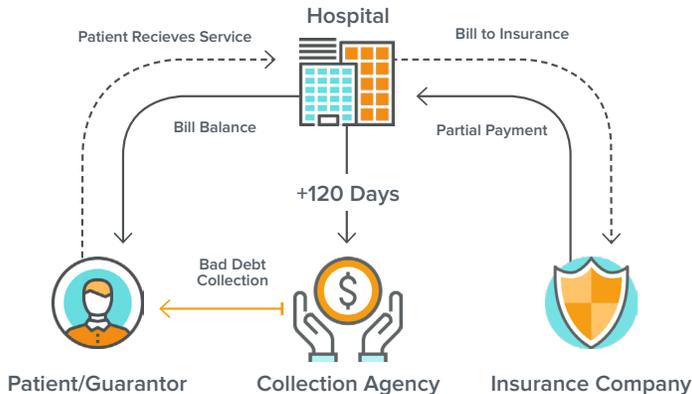


Figure 1: Need before extx

## SOLUTION

The Debt Risk Advisor is an AI solution from CognitiveScale that uses machine learning (ML) to predict debt risk and improve revenue cycle management. Working with CognitiveScale, a team of subject matter experts sought to predict which accounts would eventually go into debt. The high-level approach was to create three models based on account aging "buckets" of 30 day increments. More specifically, the CognitiveScale application ingests millions of patient account records from their EHR (Electronic Health Record system). Preprocessing in the

ML code includes filtering the data from these records based on domain knowledge and the specific use case. The data used for training and prediction contain a subset of the data in the tables as well as some engineered features. The engineered features comprise past history of the guarantor as well as aggregation of procedure and diagnosis codes. The classification is carried out understanding the data and the data preprocessing (which data to include and what features could be engineered, and then using various ML techniques to get the desired results).

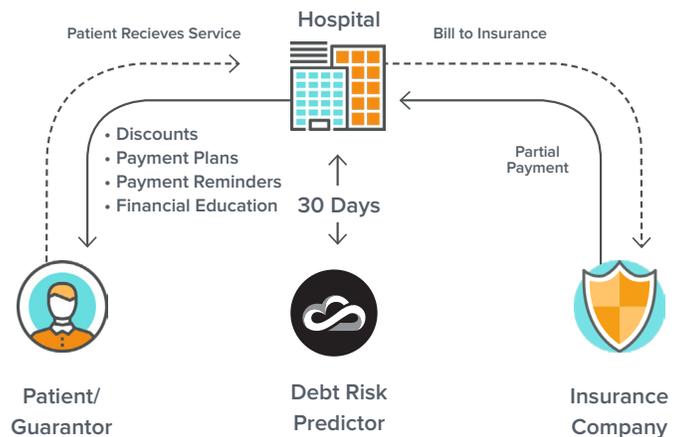


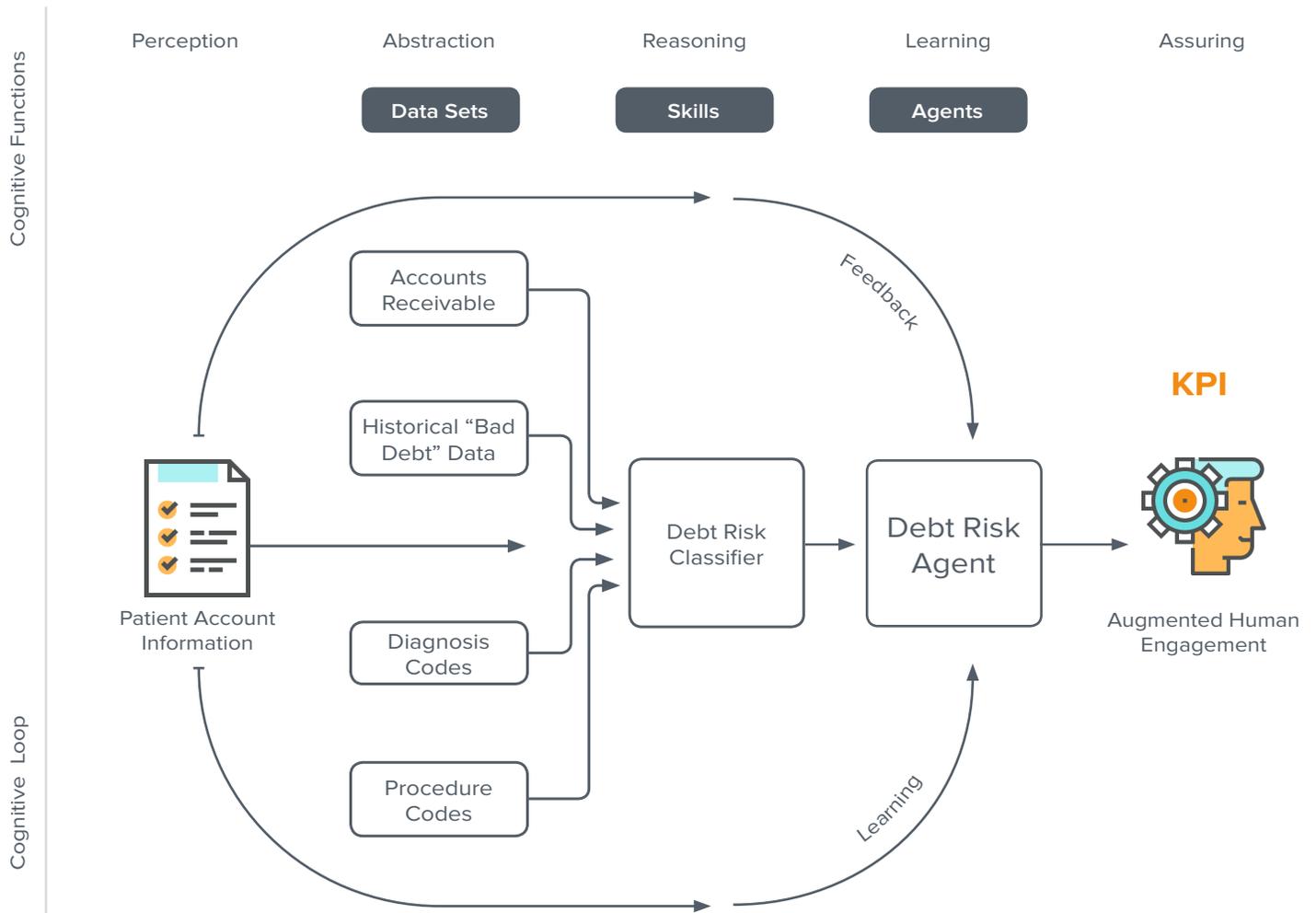
Figure 2: Hospital can project bad debt, identify accounts at risk, & intervene early

## IMPACT

Using the data from the Debt Risk Advisor, The client is able to identify and prioritize high risk patient accounts, and is able to recommend various interventional processes such as offering payment plans, discounts, and enhanced communication with the patients to prevent these accounts ending up as bad debt.

- Correctly predicts 92% of the potential high value bad debt accounts with more than 80% accuracy.
- Potential bad debt savings of multi-million dollars per year

# Debt Risk Advisor Agent Anatomy



## SEE

a number of accounts receivable and their aging information

## KNOW

the historical bad debt information as well as aggregation of procedure and diagnosis codes

## ASSIST

by predicting debt risk and improving revenue cycle management

## LEARN

from new data entering the system as well as ongoing feedback on the insights and recommendations provided

## OPTIMIZE

by constantly monitoring and ranking all of the insights and prioritize only the ones you care about based on these learnings

## BUILD TRUST

by providing concrete evidence supporting the machine learning model accuracy of predictions

## About CognitiveScale

CognitiveScale Cortex 5 software helps businesses apply Artificial Intelligence and Blockchain technology to solve complex business problems at scale for financial services, healthcare, and digital commerce markets.

Our award-winning software is being used by global leaders such as USAA, Morgan Stanley, NBC, JPMC, ExxonMobil, Dell Technologies, and MD Anderson to increase user engagement, improve decision-making, and deploy self-learning and self-assuring business processes.

Headquartered in Austin, Texas, CognitiveScale has offices in New York, London, and Hyderabad, India, and is funded by Norwest Venture Partners, Intel Capital, IBM Watson, Microsoft Ventures, and USAA.

For more information on the company, please visit us at [cognitivescale.com](http://cognitivescale.com) and follow @cognitivescale on Twitter, Facebook and LinkedIn.

Contact an AI specialist at [cognitivescale.com/contact](http://cognitivescale.com/contact)