



Machine learning (ML) 101

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- ML is a set of techniques that can identify patterns in data to make informed predictions or locate anomalies
- ML can generate value through enhanced physician decision making, reduced waste and fraud, and improved administrative efficiency
- ML is not a magic wand—it needs expert monitoring to maximize model impact

Supervised learning (e.g., ML classifiers such as neural nets, random forests): Algorithms use training data and feedback from experts to identify relationships from a set of inputs to a given output

At-risk patient prediction

Inform clinical decisions on effective care management and preventive care solutions

Patient referral

Help primary care physicians identify optimal specialists based on patient needs and preferences

Improved patient / member retention

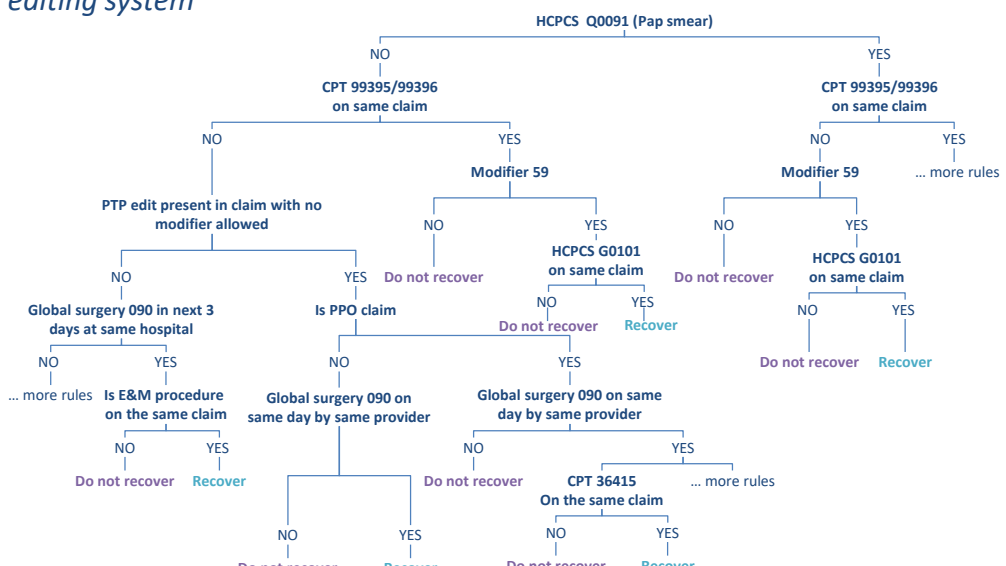
Analyze long-term patient / member journeys through learned prediction of preferences and clinical events (e.g., use individual clinical data to predict preventable catastrophic events)

Payment services streamlining

Improve claim accuracy and reduce administrative inefficiencies (e.g., during claims submission and processing)

Payers and providers could reduce fraud, waste, and abuse (FWA) by \$20-30Bn from the US healthcare value chain by implementing MI

Using ML techniques, we designed an algorithm to identify claim recovery cases for unbundling of services – *the snapshot below describes an ML algorithm that can be converted into rules to implement in a payer claims editing system*¹



1 Selected portion of algorithm presented (from perspective of Dayer claims editing system)

CPT: Current Procedural Terminology (published by the American Medical Association); PTP: Procedure to Procedure; HCPCS: Healthcare Common Procedure Coding System; ERM: Evaluation and Management



Payers and providers need to overcome a few challenges to best leverage ML techniques

Challenges

Lack of artificial intelligence (AI) strategy

- Investor-like approach to funding AI use cases
- Dedicated AI leader with strong Analytics Interpreter bench

Fragmented data storage and tech limitations

- Shared, inexpensive computing resources
- Investment in data infrastructure and storage systems
- Strong data governance for quality and traceability

Tight talent market

- Home-grown data science and translator talent
- Shared service model across the organization for AI/ML

Disbelief in AI's potential

- “Quick-win” use cases leveraging existing datasets



SOURCE: CMS 2016 US healthcare expenditures estimates; proprietary McKinsey model; team analysis

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