Revenue Cycle Management

ALIGNING ADMINISTRATIVE, CLINICAL, AND OPERATIONAL WORK STREAMS IN HEALTH SYSTEMS

The revenue cycle presents an opportunity to align administrative, clinical, and operational work streams in a health system and includes all the processes from patient registration to appointment scheduling to the final payment for patient care. Administrative costs in healthcare are a large and growing proportion of healthcare expenditures. Most of these costs are attributed to billing and insurance related activities. These tasks have historically been manual and rule-based; the application of machine learning algorithms in this domain enables the intelligent use of available data to improve revenue cycle management processes. KenSci's Revenue Cycle Management (RCM) applies machine learning algorithms to decrease your operational spend and increase your system's revenue through streamlined processes. This solution creates a secure, enterprise data platform where claims billing and RCM data, insurer payment information, health system personnel, and process management data can be integrated.

The Value of Machine Learning in Revenue Cycle Management

KenSci offers ML-driven near real-time predictions related to many aspects and processes within RCM to better allocate valued financial and personnel resources to ultimately delivery more efficient and more cost-effective care. Priorities in RCM include accurately and efficiently capturing patient and care related details, anticipating when and where errors might occur, and catching errors that do occur before external processes begin, such as claims processing. ML techniques related to RCM are being increasingly utilized - particularly around key performance indicators such as likelihood of claims denial, days in accounts receivable, and patient-related bad debt prediction. These algorithms, when applied to your data, can learn to accurately predict and categorize healthcare claims and, in doing so, assist your team in their daily tasks.

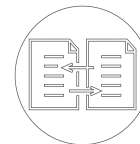KenSci helps your health system:

Flag claims at high risk of denial.
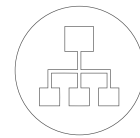
Stratify claims based on value.
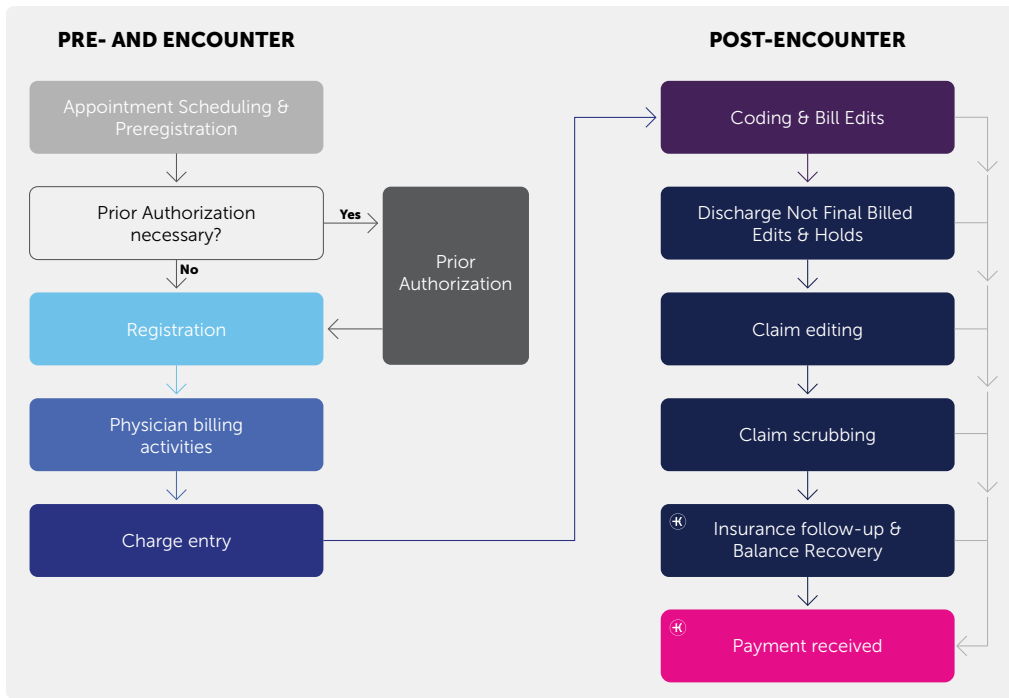
Predict claims' days in accounts receivable.

Move work upstream to reduce time and/or cost to collect.

Case Study: How can my modifiable risk of claims denial adjudication and non-payment be minimized?

Using the ML platform, KenSci developed predictive algorithms for claims most likely to be denied before they were sent to the payer. When operationalized, the platform allowed the claims analyst to modify at-risk claims prior to denial and reduce the health system's claim denials rate. Based on an evaluation of 168,754 claims, KenSci's solution identified at-risk claims with an accuracy of 91%.

Health system revenue margins are becoming increasingly narrow mandating more intelligent applications in revenue cycle management.

PRE- AND ENCOUNTER

POST-ENCOUNTER

Appointment Scheduling & Preregistration

Prior Authorization necessary? — **Yes** → Prior Authorization

No

Registration

Physician billing activities

Charge entry

Coding & Bill Edits

Discharge Not Final Billed Edits & Holds

Claim editing

Claim scrubbing

Insurance follow-up & Balance Recovery

Payment received

Payers and providers of medical care are utilizing intelligently designed tools including machine learning (ML)-based approaches to more proactively address the complexities and inefficiencies associated with RCM.

Operationalizing Machine Learning in the Revenue Cycle

The KenSci Revenue Cycle Management solution creates a secure, enterprise data platform where claims billing and RCM data, insurer payment information, health system personnel, and process management data can be integrated. Using static data, we develop specific machine learning models, tuned to your health system and your patient population, to predict pain points in your RCM processes – such as likelihood of claims recovery or claims recovery optimization, among others (depending on requirements). Multiple machine learning models will be tested to determine which techniques prove most powerful on your data. Advanced statistical sampling techniques can be used to improve the quality of the training set. Model features include insurer, provider, and patient factors, procedure codes, pharmaceutical information, diagnosis codes, and time intervals (such as time from service to claim submission). These models can be seamlessly integrated into your end users' existing workflow, wherein key results can be flagged for internal review. When deployed, the models are then able to predict the correct categorization of these claims to then be utilized by your staff for improved RCM processes. KenSci's platform, including this solution, supports end-to-end RCM workflow and analytics and will assist you as your health system scales its capabilities to improve performance.

ML-derived RCM solutions can optimize resource utilization and workflows in the context of healthcare delivery.

ML-derived RCM solutions can integrate into end user workflows such as charge entry and account queues and assist providers to scale capabilities and improve margin performance.

[1] "Benchmark Your Patient Access Performance." Advisory Board. Available at: http://ns.advisory.com/PAC-Re-source-Q217-PatientAccessBenchmarks?WT.ac=Inline_PAC_CG+-+Benchmarks_x_PatientAccessBenchmarks_x_AT-M_2017Jun27_Eloqua-RMKTG+Blog

KenSci

KenSci's risk prediction platform identifies population health risks, optimizes clinical outcomes and operationalizes efficiency across the care continuum, making healthcare more proactive, coordinated and accountable - fast.