

AI and EMRs: Pioneering the New Frontier in Healthcare Actuarial Practice

By Netanel Lederer, ASA, MAAA

In the evolving landscape of the healthcare actuarial space, the rise of Accountable Care Organizations (ACOs) and full risk value-based contracts has unveiled new opportunities for actuaries. CMS (Centers for Medicare & Medicaid Services) aims for all traditional Medicare beneficiaries to participate in accountable care arrangements by 2030¹ and in August of 2023, Sean Zhao FSA, CERA, MAAA spotlighted the distinct opportunity for actuaries to lead in this dynamic sector, prompted by the growth of value-based contracts.² Additionally, not only are PCP providers transitioning to these risk bearing arrangements, but specialty practices are also increasingly adopting them as well. With healthcare actuaries assuming expanded roles on the provider side, it is imperative to reassess the data tools at our disposal. Electronic Medical Records (EMRs) represent a significant yet complex resource. While traditionally challenging due to their disorganized nature, the potential for leveraging them is significant. AI-enhanced EMRs stand out as a solution, offering actuaries more accurate and refined projections to better inform key decision making for risk bearing entities.

Ian Duncan FSA, FIA, FCIA, CSPA, MAAA, has remarked of the profound value of patient charts as a rich information source when accessible.³ Despite EMR data's shortcomings, such as the exclusion of out-of-network claims, the growth of ACOs, Clinically Integrated Networks (CINs), and Health Information Exchange (HIE) networks has enriched EMR databases with more comprehensive, real-time patient data across various medical groups and hospitals.

Despite improvements in EMR data completeness, challenges remain, notably in data standardization which hinders efficient data extraction. AI-enhanced EMRs can surmount this obstacle by analyzing diverse medical records—from image reports to MRIs—and standardizing this information for accessible and interpretable use. This AI capability mirrors a physician's ability to discern critical information from medical records, all while aggregating data in a uniform format.

Indeed, one of the biggest hurdles for providers in participating in full risk contracts is the lag in claims data and the provider groups not knowing how well they are doing in their shared savings contracts until it is far into the performance year. This delay is particularly problematic for ACOs since it delays access to key performance metrics which delays implementation of positive change. Additionally, ACOs that would like to prepay their physicians based off their performance (prior to settlement) so that the physicians can feel like they have skin in the game, the data delay hinders their ability to distribute

preliminary shared savings throughout the year. This is true for the ACOs that participate in traditional Medicare fee for service programs like MSSP, ACO REACH, CKCC, etc. but is even more pronounced for providers that contract with payers to take on full risk. The data from the payers may be lagged even more and it is even harder to fully grasp the financial outcome of the shared savings arrangement.

The adoption of AI-enhanced EMRs represents a significant advancement in healthcare analytics, offering a multitude of benefits for actuaries and provider organizations. Key advantages include:

- **Developing More Accurate Completion Factors and Forecasting:** AI-enhanced EMRs aid actuaries in creating more precise completion factors especially in the most recent and prior months (Lag 0 and Lag 1) where claims data is so incomplete. Leveraging the real time EMR and HIE data feeds allows the actuary to forecast shared savings with greater accuracy better informing the provider group of their expected gain/loss.
- **Enabling Earlier Shared Savings Prepayments:** By modeling processes more precisely, ACOs can optionally prepay portions of their shared savings earlier, incentivizing providers to continue delivering quality care.
- **Aggregating Real-Time Quality Metrics:** This technology gathers real-time quality metrics from EMRs⁴, allowing actuaries to integrate these metrics with shared savings distributions, enhancing performance evaluations.
- **Projecting Catastrophic Claims:** EMRs can project catastrophic claims more effectively, addressing significant data delays and ensuring appropriate case reserves are set aside.
- **Overcoming Historical Data Limitations:** AI-enhanced EMR fills gaps in historical data. For example: a newly enrolled Medicare beneficiaries won't have any claims data and the AI-Enhanced EMR can fill it in. Alternatively, if the payer does not provide the ACO with comprehensive historical claims data, the EMR data may be leveraged.
- **Uncovering Risk Score Capture Opportunities:** Utilizing EMR data can reveal additional risk score capture opportunities for suspect diagnosis codes not evident through claims alone, enabling actuaries to estimate potential increases in risk adjustment revenue.
- **Assisting Provider Organizations Considering Full Risk:** AI-enhanced EMR data, alongside claims data, can guide provider organizations contemplating the shift to full-risk arrangements by gaining a more comprehensive understanding of their population and identifying potential opportunities for success in value-based-contracts.

The fusion of AI with EMR signifies a transformative shift in healthcare actuarial science, offering actuaries the tools to analyze and predict healthcare trends with unparalleled precision and speed. As AI technology progresses, its integration with EMR data is set to play an increasingly vital role, positioning actuaries to seize this emerging opportunity.

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