Can AI Help Solve The Hospice Eligibility Question?

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Medicare beneficiaries are eligible for hospices if they have a life expectancy of six months or less if the illness runs its normal course. And, while providers can take an objective set of characteristics (FAST score, PPS, hospitalizations, MAC, etc.) and predict life expectancy for a population around an average, no one has come close to perfecting the practice.

Prior JAMA studies can tell is that prediction of life expectancy is difficult at best. Susan L. Mitchell et al., Prediction of 6-Month Survival of Nursing Home Residents With Advanced Dementia Using ADEPT vs Hospice Eligibility Guidelines. 304 JAMA 1929 (2010) (predictive ability of ADEPT and guidelines are modest at best). These studies, though respected, demonstrate the weakness of prior research – while able to negate a discrete hypotheses on certain diagnoses, they offer no solutions.

Hospice providers must make life expectancy assessments in real time, without benefit of hindsight. Although providers have considerable expertise, including hospice medical directors and interdisciplinary teams, a certain portion of patients will, by definition, live longer than average. This should not surprise anyone, nor should it spawn overpayment claims, much less fraud claims.

Medicare and its watchdog MEDPac have all the data in the world, but refuse to promulgate objective criteria for eligibility. Instead, they run for cover, allowing the MAC’s to promulgate local coverage determinations that, at bottom, call only for exercise of considered judgment. Medicare’s silence in the face of repeated calls for objective National Coverage Determinations speaks volumes about the difficulties of such assessments.

Medicare and their well-compensated private audit contractors prefer to second-guess hospices with post-payment audits that focus, naturally and with the full benefit of hindsight, on the small subset of patients that live longer than average. Some ZPICs (now UPICs), SafeGuard in particular, take the cynical approach of denying almost every single claim they review on a post-payment basis, counting on the slow appeals system to protect some overpayment determinations.

So, given that life expectancy is a notoriously complex assessment, what can hospices, or even Medicare, do about it?

Artificial intelligence may offer some help.

IBM’s crown jewel, Watson, can tackle any data problem with similar agility. AI systems, like Watson, are now being programmed to teach themselves. And, so with vast repositories of healthcare data, AI systems may be able to process and learn from vast, diverse data lakes.

Google deploys complex algorithms and an agile neural network to analyze trillions of data points and return remarkable results to impatient Americans every second of the day. And now Google is tackling precisely this problem, announcing this week that it is “training machines” to predict when a patient will die. Mark Bergen, Google Is Training Machines To Predict When a Patient Will Die, Bloomberg, Jun. 18, 2018. Reportedly, Google’s analysis will consider more than 175,000 potential data points. Bloomberg predicts that this effort will have significant commercial promise. Id.

Because healthcare constitutes a large and growing share of the world economy, tech companies and private equity investors are pouring money into the healthcare artificial intelligence race. Diverse prizes include analyzing
risk, predicting disease, improving diagnosis and treatment, and streamlining patient matching, eligibility, and claims processing.

In the context of the hospice eligibility problem, AI could perform a number of useful functions.

For hospice providers, AI could first review and learn from significant historical data and then help providers make more informed admission decisions. Each decision could then be documented with an AI assessment that would be based upon vast amounts of historical data.

And so, when the same hospices are subject to post-payment audits and negative findings as to the subset that live longer than expected, the AI analysis could be a very useful tool to help defend the eligibility determinations. If the appeals system won't afford deference to the doctors and IDTs, perhaps substantial AI analysis will help providers keep the money they earn for their services.

For Medicare, AI could allow Medicare finally to promulgate acceptable National Coverage Determinations. AI analysis might provide necessary political cover for Medicare and MEDPac to finally begin to take responsibility for setting eligibility standards.

Artificial intelligence should afford similar help to any provider that is required to make a complex medical necessity decision – both to help providers make better decisions in real time and to help them fend off financially-motivated post-payment audits.

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