As healthcare leaders scrutinize costs and quality, they’re looking to emerging technology to help them optimize processes and improve employee productivity. Artificial intelligence and machine learning are increasingly being used to automate critical business functions and support clinicians making complex clinical decisions. As the pandemic challenges healthcare organizations to think innovatively to improve cost-effectiveness, AI is likely to play an even bigger role.

In a discussion with Modern Healthcare Custom Media, three industry leaders offered their thoughts on the promise of this technology and shared best practices for implementing it within healthcare organizations.

Peter Durlach is senior vice president, healthcare strategy & new business development, at Nuance Communications. He holds a pivotal role in advancing the portfolio of healthcare solutions to align with the shifting needs of healthcare clients.

Scott Weingarten, M.D., MPH, is chief clinical and innovation officer at Premier and CEO at Stanson Health, a Premier company. He is a professor of medicine and consultant to the CEO at Cedars-Sinai.

Shashi Yadiki is president of NTT DATA’s Health Plan business. He and his team focus on enabling digital transformation, intelligent automation, business process-as-a-service and value-based care models for their clients.

How has AI advanced over the last decade?

PD: AI has advanced significantly from being barely known outside of engineering labs to something that’s used in everyday consumer products. Healthcare has long been and will remain a leader as overall AI growth increases—just look at how speech recognition is now considered mainstream technology across medicine. AI also is playing a critical role in removing the distractions of technology that get in the way of caregivers helping patients.

SW: AI is steadily becoming an essential part of software products across industries—including healthcare. The increasing computing power and available data to train AI systems has made it significantly more accurate than just a decade ago. The increased accuracy allows us to integrate AI systems in more parts of the clinical workflow.

SY: The evolution of AI in healthcare began over 50 years ago, but the majority of progress has occurred only in the last five years. By applying machine learning and deep learning across multiple data sets, we’re moving beyond back-office functions to proactively predicting risk, developing treatment protocols and managing chronic disease costs. AI is also moving from a tool used only by data scientists to one available across the enterprise.
How has the COVID-19 pandemic impacted the use of AI? What new use cases are you seeing in the market?

PD: COVID has spurred digital innovation and transformation, especially around telehealth and the digital front door. Providers are reporting up to 175x the number of telehealth visits compared with pre-COVID levels, and 57 percent of providers view telehealth more favorably now than before COVID. Given the need to interact virtually, each health system’s digital front door has also become increasingly important for patient triage, access and support.

SW: There is an AI predictive model that predicts which patients are most likely to test positive for COVID-19 based on presenting symptoms. Another use case demonstrated that patient symptoms can predict each patient’s severity of illness and the probability that a patient with COVID-19 will require respiratory support in the future. Rapid prediction can assist with implementation of effective containment and mitigation strategies to reduce disease transmission.

SY: Automation and predictive analytics are giving health plans a 360-degree view of the member and enabling them to offer more personalized content and self-serve options. These tools also give valuable insights into the provider ecosystem. Many insurers stepped in to help providers with COVID-related financial challenges, and they are using analytics to better predict and manage the backlog of claims once the pandemic subsides.

AI plays a significant role in automating administrative processes like prior authorization and other rules-based tasks. Where do you see further opportunities for automation in the future?

PD: The use of ambient AI solutions to reduce clinician burnout from the burdens of documentation is a priority now. Health systems are using our Nuance Dragon Ambient Experience (DAX) solution to automatically document telehealth and in-office visits while the physician stays focused the patient. Dragon ambient and virtual assistant solutions also are quickly expanding to areas like computer-assisted physician documentation, clinical documentation improvement, radiology workflows and prior authorizations.

SW: A number of processes in medicine are ripe for automation through the use of natural language processing, machine learning and artificial intelligence. We expect that AI will become increasingly common in radiology to automate the reading of imaging tests, in pathology for the reading of tissue slides, in ophthalmology for reading retinal images and in dermatology for evaluating pictures of skin lesions. Additional use of AI in healthcare will potentially lead to better care at a lower cost.

SY: AI is no longer a nice-to-have in healthcare; it’s a necessity. Many plans and providers started by automating specific tasks like prior authorizations and referral management. Now it’s mainstream and we’re seeing more complex applications, like using vast amounts of payer and
clinical data to train advanced AI models to derive risk scores for chronic disease onset, then automatically feeding this output to staff able to begin the intervention.

How can AI support the significant surge in virtual care encounters?

**PD:** AI makes the surge sustainable as part of the growth in “digital front door” initiatives to expand patient access and engagement, improve care quality and outcomes, increase physician satisfaction and accelerate revenue recovery. We’re already seeing increased use of chatbots, predictive analytics, diagnostic models, clinical virtual assistants and the ambient AI systems I mentioned. AI is playing an essential role across the continuum of care.

**SW:** AI-based applications can capture and analyze relevant patient information prior to a virtual visit. This could be collected by asking patients questions about their chief complaint, medical and family histories, social determinants of health, preferences for care and other relevant information. Having this information ahead of a virtual visit could make the consult productive and allow for more time to answer patient questions.

**SY:** Virtual care of all types has skyrocketed and it’s clearly here to stay. But there is room for improvement. AI-enabled virtual agents can triage and direct patients to the right kind of care—in-person or virtual, real-time or asynchronous. Conversational AI can help providers with transcribing and documentation. And data from these encounters can be used to further refine proactive care plans and improve patient or member engagement.

What role do you see AI playing in supporting improved payer-provider collaboration?

**PD:** Clinician burnout is fueled by documentation rework and retrospective queries, which lead to denials and increased costs. The American Medical Society also found that there was a 200% increase in medical errors as a result of burnout. AI helps physicians create complete and accurate clinical documentation that’s the foundation of care delivery as well as communication with the payer regarding patient acuity and appropriate reimbursement.

**SW:** AI can facilitate the efficient exchange of relevant administrative and medical information between payers and providers during prior authorization. Reading, interpreting and contextualizing free text information in EHR notes, and comparing the patient findings with medical necessity guidelines, can automate part of the process. This could yield higher patient and provider satisfaction, lower costs and better quality of patient care.

**SY:** We’ve been talking about improved collaboration for years, but as a result of the pandemic I’ve seen rapid progress on interoperability and data sharing as payers and providers work together to maintain access and funding
during the pandemic. Looking ahead, sharing of data and analytics are foundational to improved collaboration, and use of transparent AI will help drive this collaboration.

Clinician burnout is a significant issue, especially during the pandemic. Where should leaders look to leverage AI to limit administrative burden?

PD: Ambient documentation captures and contextualizes every word of the patient encounter at the point of care freeing clinicians to focus on their patients, giving them back time in their day, and increasing patient satisfaction. It allows providers to spend their time caring for patients and puts the joy back into practicing medicine. With satisfied providers who aren’t burned out, and patients who had a good experience, you’ll retain both.

SW: Natural language processing and machine learning can be incorporated into ambient listening devices that are present in the examination room—with patient and provider permission—and record, interpret and contextualize patient-provider conversations. This could enable providers to spend more time listening to patients and answering their questions rather than spending their time documenting information in the EHR.

SY: Further natural language processing advancements will soon enable clinicians to directly capture all pertinent information from an encounter into the EHR in real time—for appropriate use by both clinicians and payers. Virtual assistants can follow up on missing information, reduce or eliminate unnecessary care, or guide patients to self-serve information based on algorithms. The end result? More satisfied patients and less stress for providers.

As more and more health systems engage in value-based reimbursement, how can leaders leverage AI to ensure care is provided at the highest quality and the lowest possible cost?

PD: The transition to value-based care makes it increasingly important to create accurate documentation that fully reflects the patient story and acuity, spot disease trends and track population health. Today’s AI solutions make it much easier to capture the data needed to improve efficiency, ensure appropriate reimbursements, and design and implement education, process changes, and other interventions that can and do have a positive impact.

SW: AI can be used to help improve the appropriateness of patient care. AI can guide providers during their patient interactions to prevent errors of omission, or underuse, and prevent over-treatment. This increases the probability that providers will succeed in their transition to value-based reimbursement.

SY: By its very nature, value-based care is dependent on constant analysis of reams of data both inside and outside the point of care. Information from wearables and other biomedical devices, combined with machine learning and AI, will transform how providers “see” patients. With the consumerization of healthcare, we are empowering health plan members to be active participants in their care, from enrollment to billing and everything in between.