

THE CONVERGENCE OF HEALTHCARE DELIVERY IN THE U.S.

A SURVEY OF LEADERS IN THE HEALTHCARE INDUSTRY



Presented by



&



TRANSWESTERN[®]

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310 Million People \$3.4 Trillion Spent¹

While healthcare services are growing, so is the projection for healthcare spending – targeted to be \$5.7 trillion by 2026,² making up 20 percent to 25 percent of the U.S. GDP.

Each day the world of healthcare brings something new: firms and systems merging, new innovations being developed, and new laws being implemented. Every change is impacting how we will have to do business in the future. New technology. Personalized medicine. New ways to deliver healthcare. Digital hospitals. We are most definitely in the midst of a revolution. There are heightened expectations from our partners, our employees, our customers and patients, and the government. Change is inevitable if we want to thrive in the future. We must act now. Together, we can ensure positive outcomes, but we must collaborate.

We view this fast pace and these changes as positive, but no doubt challenging. We authored this paper with the intent to bring value to all readers. The report's content is comprised of insights from 31 thought leaders from every aspect of healthcare in response to questions surrounding the following topics:

- How healthcare consumption is changing
- The disruptions in healthcare they see coming
- How all of us can drive improvement in delivery of healthcare
- The challenges facing healthcare facility owners
- The expectations surrounding the shift from volume-based to value-based models

It is our objective that you will find these answers not only insightful but motivating. We are confident that it is our common goal to positively impact the delivery of healthcare, but in order to do so, the environment demands that we establish a mindset of innovative intent, invite disruption, and continue to be committed to creating a positive change in the world! Failure is not an option.

We thank each contributor and all of our colleagues who helped to make this report a reality. In addition, we thank each of you for taking the time to read our report. We welcome your feedback. Enjoy!



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¹ Center for Medicare & Medicaid Services, National Health Expenditure Accounts: Methodology Paper, 2016
² Center for Medicare & Medicaid Services, National Health Expenditure Projections, 2017-2026

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Executive Overview

Thought leaders from 24 organizations had some very insightful feedback in response to our questions. Here, we highlight the biggest takeaways in trying to plan how each of us can better prepare ourselves and our firms to deliver products and services to our clients and their end users so that they attain maximum results.

There were several dominant themes. Our core team believes these are the ones we should be paying attention to and planning our future around. They include:

- **Leveraging technology** in many ways, including IoT, digital medicine, telehealth, wearables, and electronic medical records - all of which will help drive down costs
- The need to ensure that all of us involved in healthcare are **patient-centered**
- The important focus of being **nimble and transparent**
- Realizing that the **value-based model** is here to stay
- **Personalized medicine** and the move to **outpatient care** and **home health**
- The importance of the **patient experience** and the fact that there are many generational differences - including Millennials being less forgiving of doing things the way we have always done them

The bottom line, if we have to pick one, is that all of this convergence in healthcare is not slowing down and no one sector of our industry has all of the answers. We are all in this together, trying to **deliver the best healthcare** to a large, complex population that has millions of ideas on what is best for them. The **good news** is that from everything we heard from our broad group of contributors, everyone is willing, ready, and able to collaborate to secure the best paths forward - which will leverage technology, drive costs down, result in better patient experiences, and, we hope, better outcomes!



Healthcare Systems / Academic Medical Campuses / Providers

Contributors:

Amy Waer, M.D., Vice Dean of Education and Academic Programs, Texas A&M College of Medicine **TAMU**

Ryan Walsh, M.D., Chief Medical Information Officer, University of Texas Health Science Center at Houston **UT Health**

Anonymous, Large Chicago Health System **LCHS**

Richard Zane, M.D., Chief Innovation Officer, and **Jean Haynes**, Chief Population Officer **UCHealth**

Anonymous, Large Health Care System **Anonymous**

Spencer Seals, Director, Construction Facilities Planning, Cook Children's Medical Center **CC**

Arthur Garson, Jr., M.D., M.P.H., Director, Health Policy Institute, Texas Medical Center **Garson**

Ashley Thompson, Senior Vice President, Public Policy Analysis and Development, American Hospital Association **AHA**

What is, or will be, the single largest disruptor to healthcare delivery?

UT Health: Prices in healthcare, as a rule, are too high. Integration within the healthcare vertical will allow innovation and disruption to deliver services in lower cost settings, and using lower cost methods while preserving quality outcomes.

LCHS: Reimbursement will continue to be a threat to a seamless healthcare delivery process. Providers are asked to continue to tighten costs in order to meet lower levels of reimbursement while still providing conscientious, high-quality care and innovative methods.

UCHealth: Digital health. The use of data science and artificial intelligence to inform prescriptive analytics to assist providers in making the best decisions with all of the information possible - which would include wave form data from integrated devices ranging from traditional monitors to wearables, discrete and indiscrete data, and even virtual reality.

Anonymous: The federal and state government payment models and regulatory framework. Yes, telemedicine and private entities will be on the fringes of healthcare with the milder, episodic, care events of the "healthy" population. Not to diminish these players, this is "the" population that everyone wants: privately insured, healthy people. Should the new entrants into healthcare elect to expand their reach from those covered by private insurance to those covered by public systems, they will encounter the cumbersome revenue cycle and burdensome regulation of the government, dealing with CMS, EMTALA, and state boards with certificate-of-need regulations. The true disruptor will be changes on the payer

side, the government in particular. A single-payer system could be worse or possibly better depending on design - that will be a game changer. Until then, those who wish to participate in the system will be limited in the population they serve: those privately insured with episodic, mild needs. Acute care systems will continue to navigate the population health needs and seek reimbursement; I do not see a large-scale disruptor in this arena until we have changes in the regulatory and reimbursement landscape.

CC: Access to care being at fingertips or down the street is significant for healthcare. Telemedicine and its adoption will continue to push the boundaries of provider and patient; moreover, it will challenge the payment schemes in healthcare.

Garson: Moving entirely to integrated systems (successors to ACOs) with capitated payment based on value and salaried practitioners.*

AHA: The fast-paced disruption of the internet economy is now being felt by America's hospitals and health systems. Consumerism, likely the single largest disruptor in healthcare delivery, is changing the way hospitals, health systems and other providers care for patients. Today, patients are seeking care that is low cost, high quality, patient-centric, and digitally integrated, all with a friction-free experience. Additionally, emerging disruptive competitors, including large technology companies, are looking to provide healthcare services to patients in more convenient ways.

Current “Mega-Disruptors” (Amazon, Berkshire Hathaway and JPMorgan Chase; Walmart and Humana; CVS Health and Aetna; Cigna and Express Scripts; and Anthem and IngenioRx) are on their way to changing how healthcare operates by eradicating outdated assumptions on how optimal customer experience and sustained high-value healthcare can be delivered. What are the impacts these mega-disruptors will have on your organization?

TAMU: We are in the process of developing a practice plan and it is not yet clear the impact these mega-disruptors will have on our organization.

UT Health: This is something we really need to pay attention to, as the potential for disruption is enormous. Organizations that cannot compete with respect to consumer experience and expectations will continue to see a degradation of their payer mix. Most healthcare organizations are still designed to deliver care to the previous generation of people requiring services. The mega-disruptors are focusing on affluent seniors and GenX/Millennials, and these payer groups typically are more favorable from a payment standpoint. Groups that are unable to understand and adjust to these changes will see groups bound to them by simple geography or habit. Over the long term, that's not sustainable and is a fiscal death sentence.

LCHS: It could have an impact on academic medical centers in how research and healthcare delivery are intertwined. I think most AMCs are already ahead of the curve on changing the customer experience.

UCHealth: Mega-disruption is opportunity, and we must embrace this new world to improve what we do and how we do it. Healthcare will be disrupted and we, healthcare, must be at the forefront of this revolution, as the intersection of escalating costs combined with mediocre outcomes is unsustainable. Healthcare as we know it is changing, and technology is making this possible.

Anonymous: These groups will reduce the population of privately insured, generally healthy individuals who utilize the ambulatory services of acute care hospital systems like ours. They will create faster, much less expensive delivery models that will result in a better overall patient experience. These so-called mega-disruptors

may look to develop or buy into the acute care side of the business; however, I do not think they will be able to truly impact a robust population due to limitations imposed by regulators and payers. In the meantime, our margins will erode on the ambulatory side, prices will come down, and healthcare systems will streamline their offerings to align with the value and volume needed. Acute care systems will have to merge and some will exit the market altogether.

CC: I think the mega-disruptors will drive more consolidation of systems, and that has a huge impact on consumer choice, transparency, and access to care.

Garson: It is not clear how these mega-disruptors will affect anyone as they have not revealed their plans. I suspect the greatest value will be in demonstration, at scale, how costs can be reduced at the same or better quality. It would be extremely valuable if one or more could develop delivery systems based upon the principles of “task shifting” – such as where generalists do some specialty work, nurses (within licensure) do primary care and “grand-aides” reduce the burden of chronic disease by keeping patients well and out of the hospital. Hopefully, these megas will only provide demonstrations for how a system should look rather than a number of one-offs.*

AHA: The massive transformation underway in healthcare makes the field ripe for disruptive innovations, as entrants from inside and outside of healthcare look for new ways to deliver services – and new services to deliver. These new entrants will drive hospital and health systems to become even more focused on improving care, the patient experience, and efficiency, including removing “friction” from the system. It can be anticipated that some providers will seek new and unique non-traditional partnerships.

“The mega-disruptors are focusing on affluent seniors and GenX/Millennials, and these payer groups typically are more favorable from a payment standpoint.”

– Ryan Walsh, M.D., UT Health

How will Millennials & Gen Xers receive healthcare differently than Baby Boomers?

TAMU: I believe Millennials and Gen Xers will expect to receive their healthcare via telehealth/telemedicine processes on an immediate/on-demand basis.

UT Health: Millennials and Gen Xers are cost sensitive and are not brand loyal. They will do research and demand convenience, technology, and cost consciousness with the assumption that receiving quality is a given. They are less attached to physical location and are willing to receive asynchronous or e-healthcare. They are also willing to take a more active role in their care (especially for lower cost care) and are more willing to travel for high-end specialty care.

LCHS: We really need to be focused on the generations even younger than these two as they will expect something much different than even a Millennial. The younger population (including Millennial) is more open to the use of technology for care delivery, they do not necessarily have an allegiance to a particular physician or system, and they are focused on convenience and access. In addition, we need to be cognizant of how many options they have.

UCHealth: Millennials want what they want, when and where they want it, and they are right. Technology allows healthcare to do that, and we need to deliver care the way they work and live. They also do not need face-to-face human contact when it isn't needed, allowing for the virtualization, synchronously and asynchronously, of care.

Anonymous: Virtually, to a point, but there's a limit to what "feels right" via telemedicine; in some instances they'll want the personal experience of doctor-patient contact - kind of like the difference between calling the help desk and going to the "genius bar." It will also be interesting to see what happens when the data gets breached. I have come to grips with the "world knows all my digits," but somehow that's not as personal as "the world knows all my physical weaknesses." That's a higher level of privacy, in my mind.

CC: I think this generation is much less likely to go to a "medical center;" they want healthcare at their fingertips. We all, to some

measure or another, have become accustomed to having answers readily available, having options presented readily, and are more skeptical of authority. Moreover, younger generations seem more apt to try different approaches, rather than always deferring to the "tried and true" methodologies. The challenge will be to remain credible and show how healthcare is effective in the current administration of the medical practice. People need to feel that the caregiver understands the options out there and that there are different courses of treatment that may be effective. Communicating that expertise, the care plan, and then managing expectation will become paramount to patient satisfaction in the future.

Garson: The first way: Questions and diagnoses that can be made by video will be done outside physician offices by encrypted email. Another way is that most will be cared for by advance practice registered nurses with physicians as backup - or there could be a new specialty of nurse/physician "primary-care-ists." In addition, there will be less primary care as patients with minor illness are incented to care for themselves. Yet another example: Chronic disease care as well as end-of-life care will become integrated into a way to manage these patients - for example, completely re-looking at Medicare Certified home care. They will be served by a well-functioning electronic health record that provides decision support at the level of the patient (i.e., the record "knows" the patient and makes recommendations based on "big data"). Lastly, hopefully, there will be adequate, affordable coverage for all with a "single safety net," similar to public school, where taxes support a base level that must be "adequate" (then there is private insurance, like private school, that people/employers can buy if they want to, but with after-tax dollars). This is NOT single payer (which is Canada) - but a single safety net, as the vast majority of countries have.*

AHA: It is likely that Millennials and Gen Xers will gravitate toward the use of digital healthcare that is more convenient and less costly, even if it disrupts "brand loyalty" toward a specific physician or health system. All generations will be focused on value - a positive experience with the right outcomes at an affordable price.

“ I think this generation is much less likely to go to a ‘medical center;’ they want healthcare at their fingertips.”

- Spencer Seals, Cook Children's Medical Center

What role do you see your organization playing to help address the challenges of regulations, code compliance, privacy and electronic medical records (EMR) concerns, physical safety, and cyber security to better serve “the consumer of healthcare?”

UT Health: This is particularly challenging for us as an organization. We have recently put a great focus on patient and consumer experience, which helps. Unfortunately, our IT infrastructure is outdated, and this often puts us at a disadvantage compared to those with better infrastructure. The regulatory and reporting burden facing healthcare organizations right now is massive and complex to deal with. Consumers don't see that, though, nor should they. Having the infrastructure to handle that well is a permission-to-play attribute in today's environment.

LCHS: Being part of an academic medical center puts my organization steps ahead of many others. We have been focused on these topics for years and strive to exceed whatever expectations/regulations exist. We have teams dedicated to ensuring we are keeping up with all challenges coming at us with these topics.

UCHealth: We have a single, robust, and mature instance of an electronic medical record: Epic. It is a guiding principle that we use this electronic backbone for our clinical care delivery system to assure clinical and data integrity at every step.

Anonymous: Anecdotally, I believe I work for an IT company that just happens to have a hospital system attached to it. Honestly, all healthcare systems are working diligently on all these fronts. I give our folks a lot of credit - they do a fantastic job of identifying and mitigating risks. Patient, visitor, and employee safety and security, both physically and virtually, are enormous burdens and require a lot of resources. These are the days we live in and this is one of the true costs of healthcare. You could write an entire white paper on any one of the items you've noted above. The initiatives we have underway are too numerous to list and are private to the organization. Openly, we address these issues via industry organizations and via our government leaders.

CC: My organization starts and ends with a promise to care for every patient in our region. We have the added challenge of caring for our smallest patients, but also being mindful of parents, siblings, and those affected by the healthcare interaction. Our organization is heavily engaged in understanding what the patients' needs are, how we define an experience, and what we can do to improve each and every day.

Garson: The organization has a number of functions: We are a Health Policy Institute within the organization that seeks to provide impartial information that forms the base for evidence-based policy as well as identifying major issues and proposing change.*

AHA: The AHA actively works with the federal regulatory agencies on ways to overcome challenges faced by our members related to regulatory burden, compliance, HIPPA, interoperability and cybersecurity. Specifically, regulatory burden is overwhelming providers and diverting clinicians from patient care. Hospitals and health systems know that regulations are essential to ensure safety and accountability; however, the rapid increase in scope and volume of mandatory requirements diverts resources from the patient-centered mission of health systems, hospitals and post-acute care providers. The AHA recently produced a report that revealed that patients are affected by excessive regulatory burden through less time with their caregivers, unnecessary hurdles to receiving care, and high healthcare costs. For example, every time a patient is admitted to a hospital it results in \$1,200 in costs associated with regulatory burden. In addition, the AHA is seeking to remove regulatory obstacles that challenge moving to new value-based models of care.

“Patients are affected by excessive regulatory burden through less time with their caregivers, unnecessary hurdles to receiving care, and high healthcare costs.”

- Ashley Thompson,
American Hospital Association

What will the delivery of healthcare look like by 2020? Will we continue to see healthcare incorporate strategies like those used on the retail side – i.e., more customized services, increase in home health, etc.?

TAMU: I do believe that healthcare by 2020 will be forced to be more patient-centered with an emphasis on convenience through processes around telehealth/telemedicine available 24/7.

UT Health: We'll see an increased use of e-health and telehealth. We'll potentially see more home health and concierge care. I don't think retail care can completely supplant standard care by 2020 – primarily because of the lack of good chronic disease management and specialty care. I think more specialty care like orthopedics, urology, and day surgery will be done in micro-hospitals. There will be a decrease in free-standing EDs. There will be an increase in larger-footprint, one-stop ambulatory shops with imaging, labs, and specialty care on site. Large quaternary care hospitals will shrink.

LCHS: 2020 is in our windshields and not the distant future. We will definitely continue to see healthcare take lessons from the retail and hospitality side with regard to the patient experience. We also see healthcare very focused on employee engagement. Home healthcare will continue to grow, and delivery outside the traditional exam room and hospital room is something we will see more.

UCHealth: As technology continues to advance, we will continue to see more growth of digital health. The uses of “non-healthcare” devices like wearable sports monitors and voice-activated devices such as Fitbit and Echo will allow us to move care into outpatient settings.

Anonymous: I anticipate a large-scale movement toward home health and an increase in waiver services to help folks stay in their homes longer. Payers and social entities are seeing statistically significant improvements in the life of their members when they can stay in their homes. However, that leads to issues with current home designs and the aging population. This will create new demand for homes and planned communities built for this demographic. Waiver services will expand as the demand for home healthcare aids cannot be filled by existing healthcare providers.

CC: As pressures from regulations continue to squeeze the healthcare dollar, organizations will be forced to seek other revenue streams, change business models, and even change care models. Cost of compliance is tremendous in healthcare, so that cost is mitigated by alternate means – more retail, more home health, and also a streamlining with more telemedicine in the immediate future. Healthcare for nominal issues or less severe issues will continue to decrease. As that happens, the need for specialty care or higher level of care (ICUs) will become increasingly expensive. There is a shift to community wellness, and healthcare employers are making a dent in attitudes, but communities have to start owning community health more than they do today. I think spa-type medical experiences will increase, while general medical needs will be handled in an ambulatory setting.

Garson: I think (as in my examples provided earlier in the generational differences section) a lot will occur in a 10-year horizon, but I see little change by 2020.*

AHA: Hospitals and health systems will continue along AHA's Path Forward, with commitments toward coverage and access for all; high-value care; well-being and prevention; patients as partners; and providing services in a coordinated, seamless manner. Hospitals likely will take different paths and adopt different models to pursue these commitments based on their individual markets and the needs of their local communities. Hospitals will continue to move care outside their four walls to better address an array of primary, ambulatory, and community-based care, and address social determinants to improve overall health. Inpatient acute care services will focus more on tertiary/quaternary, ICU and emergency care, and disaster response. Medical decision-making will be enhanced by precision and personalized medicine, and augmented by digital technologies, including telehealth. A constant in the future will be a strong commitment to meeting the needs of the communities providers serve.

“Non-healthcare devices like wearable sports monitors and voice-activated devices such as Echo will allow us to move care into outpatient settings.”

– Richard Zane, M.D., UCHealth

How has the healthcare industry and your organization been affected by the shift from the traditional fee-for-services payment model focused on volume to a value-based model focused on outcomes? Do you think the value-based model is here to stay?

TAMU: It has been refreshing to see the change from the traditional fee-for-services payment model to the value-based model with more of a focus on overall outcomes. I do hope the value-based model is here to stay.

UT Health: Value-based care is here to stay, though it will likely continue to evolve over time. There is no doubt we're seeing an increase in the measures on cost and quality being required throughout various payers on both the commercial and governmental sides. As we see more large-scale vertical integration, I think we'll see employers, insurers, and governmental agencies demanding cost and quality outcomes, and at scale; if they're not getting the results they need to see they will take their business elsewhere. United Health and Optum are a prime example, having nearly 30,000 providers. To me it's not a stretch to see more organizations trying to direct the value stream from the premium dollar to the patient all the way to the outcome. It seems to be the natural progression of things, but it's easier said than done, and takes massive resources.

LCHS: Most large healthcare systems are already focused on their delivery methods adapting to this change in payment model along with re-admissions. We are starting to see longer length of stay as a result of some of this. We do think value-based care in some format is here to stay. This will also continue to help with coordinated care on complex cases.

UCHealth: Value-based healthcare focuses on improving quality of care while reducing cost and improving patient and provider experience. Healthcare payers offer new value-based payment models and incentives for providers who effectively manage costs and increase quality. Participating requires extensive coordination, time, and knowledge about the contracts and populations we serve. That is why UCHealth and University of Colorado Medicine launched UCHealth Integrated Network, an affiliation for Colorado's high-performing healthcare providers to collaborate, innovate, and deliver patient care within a partnership. It improves care coordination among its partners to manage costs and improve quality of care for patients. It is unique among its peers in its pledge to deliver on four key areas: 1) Enhanced access, care coordination, and patient experience enable participating providers to be successful in delivering coordinated population healthcare by providing the tools, expertise, and incentives that enable more cost-effective, coordinated patient care. 2) New payment models associated with value-based agreements

offer a financially sustainable population health platform that positions healthcare providers to successfully shift from a "volume" to a "value-based" payment environment. 3) Quality outcomes and managed total cost of care provide access to governmental and commercial value-based contracts, which reward providers for efforts to improve quality and reduce costs. 4) Giving stakeholders ease of access to a comprehensive, quality network and clinical care solutions enables providers to collaborate with payers. This allows for new product launches and opportunities for UCHealth Integrated Network to provide high-quality, lower-cost healthcare.

Anonymous: The focus on value and outcomes will not change. Our system is a Catholic healthcare organization and completely engaged in our mission. We were already working on the value proposition long before the ACA came into effect and began the conversation on a national scale. We are currently one of only a few systems that have been profitable and have seen a credit rating increase. Those who were weak and dependent on volume, unable or unwilling to move to the value side of the street, will see their days numbered. Unfortunately, the growing number of players in the industry and the complicated nature of reimbursement make it a losing proposition for traditional healthcare providers. Their inability to be nimble and truly centered around the patient experience will plague the industry as non-traditional delivery channels grow in number and peel away the commercially insured population, making volume a losing bet.

CC: I think the value model of care is here to stay. Healthcare in general is becoming more and more transparent and consumers are recognizing that they have a choice. The issue is making sure consumers can make an informed choice. That is where the value-based model has opportunity. In the healthcare community, quality and rating agencies are well known, but in the general public, they look at Yelp reviews, not necessarily the most accurate sources of information. Value, outcomes, and healthcare information is available, but finding the reputable source is currently a gap.

Garson: I HOPE the value-based model is here to stay. But the value-based model needs to be demonstrated to produce better outcomes at lower cost. This will mean some changes to the value-based system such as requiring physicians to be paid a salary with a quality bonus, and using capitation to pay premiums. The government will need to be a player as Medicare/Medicaid are huge - but must truly buy into

the value-based system. A potential problem few people mention is that with value-based capitation and bundled payments, the patient (in the overall sense) will get less care than under fee-for-service. While in general this is good because of so much wasted care under fee-for-service, the capitated or bundled model will produce less care. Such a problem can be perhaps prevented (or at least minimized) with knowledge of how much care is needed and how well organizations are keeping to that standard – and not skimping. This will take some time.*

AHA: In short, yes. This administration's leaders are focused on continuing the shift from fee-for-service payment reimbursement methodologies to a system that is value-based and rewards value over volume. The AHA will continue to advocate for alternative value-based payment reimbursements on behalf of our members and will stay ahead of the curve to ensure innovative approaches are at the forefront of healthcare delivery.

Please share any general thoughts or predictions you have about healthcare in the U.S.

UT Health: Companies like Apple, Google, Amazon, and Walmart see a huge opportunity. Traditional players are stuck in the traditional models. They're slow and ponderous, and even the behemoths we're competing with are more nimble. Nimble healthcare delivery systems will live. The rest will die or be absorbed. At the end of the day, it's the prices (too high). The disruptors will do what they do – offer services that are “good enough” at a lower price. Most of this will be good for the country and the economy. It is going to be a painful wake-up call for the healthcare industry.

LCHS: The one thing I think most everyone will agree on is that a consistent theme we will continue to see in healthcare for years to come is change. Because of payment changes, technology, and customer service, we will continue to see healthcare play some catch-up to other industries because this industry has tended to have a more traditional, late-adopter mentality. We can't lose sight of the need for good healthcare in order to just trim costs, though. We will continue to see increases in the outpatient setting from an increase in volume over inpatient along with the physical disbursement of these locations, meaning healthcare systems will continue to infiltrate the “closer to home” strategy. We will also continue to see increases in consolidation of healthcare systems.

Garson: The U.S. came one vote away from taking healthcare away from 20 million people; if that political environment returns, the U.S. will move another five to 10 years backward from a new baseline. This should not occur. The “single safety net” (previously described) is really the only true solution – with likely some ability of states to have input into how care for their citizens is delivered. In preparation for such a cosmic shift, five to 10 states should receive infrastructure grants such as proposed in the Health Partnership Act in 2006. Such grants would permit states to pilot ways of dealing with the single safety net. Five years after those states report, and based on the improvement and pitfalls that were demonstrated, the U.S. should then go to a single safety net structure, permitting

commercial insurers to provide care for those who want more than the basic safety net. Commercial insurers would not compete against the safety net but rather compete against each other in the “second tier.” These changes will occur when a popular president is able to work with both parties in both Houses of Congress.*

UCHealth: The U.S. healthcare system is broken. Costs are unsustainable and unjustifiable. It is inaccessible for a large segment of the population and outcomes are, at best, mediocre. When any industry is too expensive, inefficient, has poor customer relationships, and the product is just mediocre, it is a target for disruption. Think Blackberry, Kodak, etc. Healthcare providers and systems can drive this or it can be done to them. In order to drive change, one has to think creatively how to partner with industry and have courage to fundamentally change.

Anonymous: There's a looming issue regarding the ownership of your health record. Your provider and payer have pieces of it that you can look at via the myriad of portals provided by each entity. However, 1) You don't have and cannot obtain a comprehensive medical record – not unless you assemble the pieces and maintain it, and 2) You don't have exclusive rights to it – you cannot tell the provider or the payer to exclude your data from their profiling and data mining activities. You cannot turn on their access to your data and then turn it off when you're done with their service. All payers and providers are intending on using this meta data to better manage your health whether you want to participate or not. We're already seeing this starting with incentive and disincentive systems set up by private insurers as they begin to parse the population. Block chaining or similar technology could be an answer for the medical record, allowing the patient to limit permission to the record and revoke it as desired. The consumer will own the record. The patient will not have to seek permission to view the non-redacted portions of the record from their payer or provider.

* The views expressed by Arthur Garson, Jr., M.D., are made on his own behalf and not for Texas Medical Center.

Commercial Real Estate / Architect / Engineer / Construction Manager

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What is, or will be, the single largest disruptor to healthcare delivery?

Transwestern: New technologies will provide accelerated healthcare diagnosis, personalized medicine, and treatments. With the demand for value, healthcare providers and payers must respond to decreased reimbursement. While this convergence creates substantial challenges for healthcare stakeholders, it creates opportunities for innovation such as developing facilities at lower-cost sites that are connected to Big Data analytics, such as urgent care, wellness centers or telemedicine centers for videoconferencing, remote monitoring, electronic consults, and wireless communications. Preventive and wellness care models of care, personalized diagnoses, and treatments that are clinical, relevant, and in real time through artificial intelligence, will drive down the cost of care. Chronic disease management utilizing personalized treatments through analytical data collection – soon our entire medical history will be universally accessible, privacy protected, and will be utilized for predictive and descriptive analytics assisting providers with risk-based contracts.

HKS: Precision medicine will change where, when, and how healthcare is delivered. This will save time to treatment, length of illness, and reduce follow-up treatments.

CannonDesign: Consumerism is the key catalyst for disruption all over the marketplace. Consumers are as savvy as ever and bring deeper understanding of care delivery and higher expectations around experience and value than ever before in history. Healthcare's core business model wasn't designed to support these new expectations,

and so the model needs to adapt ASAP before a non-traditional entity (see Walmart and Humana, Amazon, etc.) becomes more sophisticated and equipped to help this new era of consumers.

R&M: Disruptors seem to be challenging every industry, and healthcare is no exception. Technology in general may be having the most impact. Technology development and internet applications (digital health) will likely alter hospital and health system operating models and change how healthcare is delivered. Technology-based provider selection matches patients with providers with cash incentives to encourage patients to seek lower-cost treatments. About 46 percent of consumers use telemedicine and wearables. Healthcare "customers" want to receive healthcare where and when they need it at a price that is affordable.

IMEG: Continuing downward cost pressures and restructuring of the cost reimbursement system are the biggest disruptors for U.S. healthcare, one of the most expensive and unsustainable systems in the world. The healthcare industry will need to determine how to continue to make gains in efficiency, reduce waste, foster continued research and development, and take into account a growing population while reducing the overall cost of care. Population health is a start to that movement, but this is not enough and will need to continue. Organizations will need to adapt, reorganize, become more efficient, and reduce waste and organizational inefficiencies. Along with the macroeconomic need to reduce the percentage of GDP consumed by healthcare cost, new technologies will

drive change and innovation. Ambulance rides are down in cities where Uber/Lyft are available. How could driverless cars eliminate transportation as a barrier to care or be used to deliver essential healthcare products to patients in their home?

Skanska: Data and analytics – the gathering, use, and security of the information. This is also where we are lacking focus as an industry. Also, the general integration of technology.

Current “Mega-Disruptors” (Amazon, Berkshire Hathaway and JPMorgan Chase; Walmart and Humana; CVS Health and Aetna; Cigna and Express Scripts; and Anthem and IngenioRx) are on their way to changing how healthcare operates by eradicating outdated assumptions on how optimal customer experience and sustained high-value healthcare can be delivered. What are the impacts these mega-disruptors will have on your organization?

Transwestern: These mega-disruptors are going to force many hospitals that were hoping to stay with the “status quo” delivery of healthcare to change or be forced out of business. The impact to us as a real estate services firm is that our clients will look to us to further lead the way in offering advice on how to increase efficiencies and implement new ways that the facilities themselves can positively impact their patients and their employees.

HKS: Healthcare everywhere is going to be the new theme, and technology-enabled care will drive changes in designing spaces – be it retail, clinic, acute care, or for the home – and will change how we design spaces of care. Waste will be brought into light and reduced, helping to control costs and bring greater value to patients, family, staff, and administrators.

CannonDesign: From the perspective of an architect working in the healthcare industry, these disruptors demand our attention. First, we must use our design approaches to solve problems and cannot continue to silo our processes between the built and non-built environment. Second, with our client base transforming in real time, design firms must be agile in order to solve unique problems and help new client types. Third, and perhaps most importantly, we must embrace the chance to provide enhanced experiences for consumers. We should embrace these challenges and tackle them with enthusiasm. The current shifts in healthcare should remind us that improving the human condition is the inherent purpose of the design profession. Our work must purposely affect the experiences of those who interact with our solutions. Healthcare needs

our profession now more than ever to help deliver meaningful experiences that respond to consumers’ new demands.

R&M: Mergers and acquisitions are bringing healthcare to the customer. Many providers have scaled back investment on major on-campus capital improvement projects, such as bed towers, and shifted their focus to smaller-scale, off-campus developments. The healthcare sector is seeing a wide variety of outpatient real estate development such as medical office buildings, micro hospitals, free-standing emergency departments, rehabilitation facilities, imaging centers, and more.

IMEG: We focus mainly on the built environment. The future customer experience may be less connected to physical spaces and more to virtual visits and technology, reducing the overall square footage of healthcare facilities of all types. Outpatient facilities will remain an important part of the healthcare system. Hospitals will continue to be utilized, but will focus on highly specialized treatments. The future will see the healthcare industry bringing services to the users instead of the users going to seek out service. Virtual appointments and assessments will be more widely available to users everywhere, many of whom may never have had the opportunity, time, or desire to seek treatment.

Skanska: Construction and development – initial impact will be relegated to dealing with new and unique clients in the space that will have their own unique perspectives. Eventually, my industry will be next and is ripe for disruption. I am surprised it has taken so long for meaningful disruption to hit healthcare – it is time.

How will Millennials & Gen Xers receive healthcare differently than Baby Boomers?

Transwestern: Millennials will engage with telemedicine more. The differences will be how they engage with healthcare providers. Baby boomers have been very accepting of conventional phone consults and email to engage with care providers. Millennials will use these medium too, but will also be much more likely to use mobile and wearable devices and to share personal data.

HKS: Baby Boomers, for the most part, are loyal to their caregivers and places of care. Millennials and Gen Xers do not have those same relationships. They crowdsource for opinions, and look at each interaction as singular, not feeling required to use the same caregivers or facilities. They have less patience for inefficiencies and will change for amenities and speed to appointment/treatment.

CannonDesign: Millennials and Gen Xers expect comprehensive management of health; quantified, self-developed data; transparent understanding of the data and what to do with it; answers anytime, anywhere, etc. Personally, as a Gen Xer with children, my complaint is that these things are not happening fast enough in healthcare.

R&M: According to studies, the majority of these generations use online reviews to select care providers. They would like to have their providers use mobile apps to book appointments, share health data, and manage preventive care. This trend is predicted to grow as they get older and as the general population increasingly takes advantage of the power of technology. Also, they are likely to price check and comparison shop online for medical and dental care.

IMEG: The biggest difference will be virtual visits of varied types in lieu of going to a clinic, specialist, or hospital. Virtual visits, treatment, and diagnosis will increase. Prescriptions shipped directly to patients will continue to increase as well. Speed of diagnosis and treatment will increase. Time required to deliver drugs, supplies, etc., will be reduced, shortening the healing and recovery cycle. Access to medical records will continue to become more widely available, increasing accuracy of diagnosis and reducing treatment and recovery time. Wearable technology to monitor physical conditions and vitals will grow. Within the lifetime of Millennials, billing and payments will be simplified along with the insurance company and government reimbursement process.

Skanska: Millennials and Gen Xers are probably more ready to be viewed (and already act) as consumers of and shoppers of our healthcare needs. We have differing views about how to shop for healthcare, where we are willing to receive it, and who performs the services. Brand or clinical allegiance is different for our generations. Recently, I needed major surgery on my wrist. I conducted my research online about what I needed to have performed, “shopped” for a surgeon who had the background I was looking for, reviewed the clinical outcomes of my specific type of surgery, and what other patients thought of them. From this research, I made an appointment, saw the physician, and told him what I wanted done. Surgery was performed within 30 days.

“ Millennials and Gen Xers crowdsource for opinions, and look at each interaction as singular, not feeling required to use the same caregivers or facilities.”

- Phyllis Goetz, HKS

What role do you see your organization playing to help address the challenges of regulations, code compliance, privacy and emergency medical records (EMR) concerns, physical safety, and cyber security to better serve “the consumer of healthcare?”

Transwestern: Delivery of healthcare is evolving due to the Affordable Care Act (ACA). Decreased reimbursement rates as a result of the ACA are resulting in physicians becoming employed by hospital systems. The MOB is to become the primary location for education, preventive care, wellness, outpatient procedures, and outpatient surgeries. These facilities are nevertheless subject to regulations governing physician/hospital relationships, patient safety, building safety, privacy, security, etc. As real estate service providers, we are part of the compliance process. Our clients set, and are responsible for, compliance policies, but we advise them on what we see working well around the industry and help translate their policies into practical procedures. Then we do our part to implement the policies and procedures. Creating the experience of having everything a family needs will result in higher satisfaction and a patient-centered experience.

HKS: Privacy, safety and security are all impacted by the design of the space. We partner with experts in security to assure that the designs meet any and all requirements and drive wanted behaviors in the healthcare workplace.

CannonDesign: Our designs have always been rooted in safety. As the architecture industry continues to develop our own research and employ evidence-based design, we'll push others to provide research that presents metrics and substantiation with regard to planning concepts. Our approach to planning is becoming more rigorous with EMR data, patient-level data, and research that allows us to develop environments that reduce risk and support safety protocols. These include designing layouts that reduce risk of infection or falls and better support operational care models.

R&M: There is little we can do about government regulations and health coverage. However, implementation of Lean process improvement is intended to drive out waste, increase efficiency, and reduce cost – thus reducing capital expenditures and savings to the hospital and health system.

IMEG: We focus on the built environment. Patient experience and safety is paramount in any healthcare facility. While the future will ultimately bring a reduced number of visits to physical healthcare facilities, when those visits occur, safety, efficiency, accuracy, and overall patient experience will be more critical than ever. Building system reliability and energy efficiency of the physical facilities will continue to grow in importance. Operational cost reductions and reduced utility cost expenditures will help overall healthcare system performance and financial stability in an increasingly competitive and low-margin market. Our facilities will also need to support the future increases in virtual healthcare for not only online patient communication, but also monitoring of patients remotely and the delivery of goods and services to the consumers. With respect to healthcare facilities, it will be increasingly important for those facilities to be flexible in the design of their structures and systems to accommodate ever-changing and improving treatments being tested, developed, and brought to market. The role for our firm will be to drive the integration of new technologies into the healthcare facilities of the future.

“It will be increasingly important for facilities to be flexible in the design of their structures and systems to accommodate the ever-changing and improving treatments being tested, developed, and brought to market. The role for our firm will be to drive the integration of new technologies into the healthcare facilities of the future.”

– Eric Vandenbroucke, IMEG

What will the delivery of healthcare look like by 2020? Will we continue to see healthcare incorporate strategies like those used on the retail side – i.e., more customized services, increase in home health, etc.?

Transwestern: Telemedicine will continue to grow in importance. Driverless cars will also help more seniors “age in place” and delay moving into senior facilities. Mobile health applications, telemedicine, remote monitoring, and ingestible sensors generate rich streams of data, allowing doctors and patients themselves to track every heartbeat, sneeze, or symptom in real time.

HKS: Healthcare everywhere will drive more customized solutions both physically and virtually. The influence of retail and focus on the consumer, the patient, will drive an increased number of clinics. Professionals that go to the home and technology specialists that enable all the services to the patients will be in high demand.

CannonDesign: It’s nearly impossible to predict the future within this rapidly changing climate. Still, a few thoughts. First, trends indicate that post-acute care will rise to the forefront, especially as the need to improve and maintain quality within the continuum of care for an aging population becomes more important. Second, the ambulatory landscape will continue to become more of an acute care environment due to reimbursements for procedures that were traditionally hospital-based now being performed in outpatient settings.

R&M: Outside pressure from Amazon and others may force healthcare systems to be more nimble. Healthcare “customers” care about patient outcomes, services, and experience rather than the process. Customers are looking for personalized support and

optimal results. They expect access, convenience, and connection that companies like Amazon, Apple, CVS and others provide.

IMEG: Trends of bringing healthcare to the consumer and a focus on wellness will continue. Retail concepts will be utilized, but services will evolve toward more direct interface with patients in their homes and businesses. When a patient does need to go to a healthcare facility, the user experience, interface, feel, safety, and efficiency will be more important than ever. Treatments will continue to evolve as well, and facilities will need to be designed to be flexible and adaptable to those future treatments.

Skanska: More disruption. In reality, you will see very few “big” changes, just smaller incremental steps. I do think you will begin to see more disruption and disruptors challenging the market. Since this survey was written, Google announced that they are entering the healthcare insurance market so they can better control costs. More of these types of industry announcements will happen, but will have little effect in the very near term. It will be interesting to see how quickly Google, Amazon, Apple, Walmart, etc., can get their ideas into the (their own) marketplace. This is what I believe the general industry is watching. I believe Amazon will make it to market first, and if it is successful, the general industry will need to act quickly or it will be even more ripe for takeover as consumers will demand better service.

How has the healthcare industry and your organization been affected by the shift from the traditional fee-for-services payment model focused on volume to a value-based model focused on outcomes? Do you think the value-based model is here to stay?

Transwestern: Value-based care is here to stay. And this is good news. A significant component of value-based care is making the right types and levels of care accessible and convenient to the patient. As real estate service providers, we are uniquely poised to help position care providers into the best, most-needed locations to meet the needs and convenience preferences of their patients. A key role for the real estate advisor is to provide “decision support” to healthcare strategists and health system facilities professionals, reducing the chances of selecting a poor location or making an expensive oversized or undersized facility decision.

HKS: Value-based pay is staying, but how value is determined will continue to change. The focus on reducing errors and healthcare-associated infections will continue until they are permanently eradicated, and the experience that one has will become more of a finite measurement that will live in the public domain.

R&M: Value-based care is here to stay. Acute care is viewed as the last resort. The focus is on keeping patients as healthy as possible. The goal is to deliver the right care at the right time in the right place at the right price, with a successful outcome. Disruption in this area will likely be the result of service innovation. Retail-oriented competitors are focused on customer-specific services.

IMEG: The value-based model is here to stay. We focus on the built environment, so patient experience, comfort, safety, reliability, and ultimately the adaptability and flexibility of the buildings and systems will be critical to the evolving healthcare delivery model. First cost and operational cost of the facilities will remain important. We may also see a shift, especially in outpatient facilities, to a building designed for a shorter life span, and new treatments may more quickly render existing facilities obsolete. In addition, changes

to population – both growth and contraction in specific geographic areas – may require a more nimble approach to physical healthcare facilities and where they are located.

Skanska: Yes, I believe it is here to stay, but will continue to morph and change as political and social events continue to shape the market.

Please share any general thoughts or predictions you have about healthcare in the U.S.

Transwestern: It's going to be all about care in place, work, home, and/or play. With the evolution of technology and the payers demanding more economical and effective care delivery, hand-held devices and providers with video capabilities will dominate ambulatory care delivery. Physicians and practitioners will have the capacity to diagnose, treat, and bill with lightning speed. Quality of care will improve due to computer diagnostics, algorithms assisting them with diagnostics intelligence, and treatment protocols that are connected to the standard of care and Big Data. The real estate will adapt to these tumultuous changes. As a real estate service firm, it will be our charge to help our clients find the facilities and locations that support their strategy and to track with what is working elsewhere in the industry so that we can be the best advisors possible.

home, work, pharmacy, grocery store, and elsewhere. Hospitals will become components of large networks trying to deliver better, safer, efficient, and affordable healthcare.

Skanska: It will take another 10 years, but technology will dominate how and where healthcare is delivered. Our buildings will finally become more data-driven facilities that can adapt quickly to changing needs; hand-held devices and robotics will be the norm, and, just possibly, maybe the industry will begin to get ahold of the cost of these services. I believe that the current list of disruptors will have success in the industry, will eventually shake up the current lines of thinking, and will challenge for customers in new ways. Will we be buying a surgery on Amazon Prime? Perhaps.

HKS: Moore's Law will play a key role in healthcare as technology drives so much of the change in healthcare. The speed in which we have to respond to the change will continue to shorten, and the experiences that patients and their families have in healthcare will be measured and maintained in the public's eye.

IMEG: Healthcare delivery is in a time of transition as large, existing institutions work to adapt and consolidate to compete while new entrants to the market are free of the burden of existing systems and infrastructure. This will mean an overall downward pressure on healthcare cost, which will benefit the economy but also lead some existing healthcare systems to not be able to compete. In any case, we can be certain that the future of healthcare in the U.S. will be increasingly reliant on technology in all aspects of delivery of services; the collection and use of patient data will drive a growing number of decisions and innovation; and the delivery of services will continue to evolve to meet the ever-changing patient needs.

R&M: Healthcare systems are taking a serious look at their platform and business model. The adoption of a platform that focuses on service and core competencies will increase. Customers' wants and needs will result in continuous innovation. The digital experience will allow healthcare to be delivered almost anywhere, such as

“**Healthcare real estate will adapt to these tumultuous changes. As a real estate service firm, it will be our charge to help our clients find the facilities and locations that support their strategy and to track with what is working elsewhere in the industry so that we can be the best advisors possible.**”

– Daina Pitzenberger, Transwestern

Healthcare Consultants / Analysts

Contributors:

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James Rubin, M.D., Founder and CEO **TAVHealth**

Anonymous, Professional Services Firm **PSF**

Lisa C. Gill, Managing Director Healthcare Equity Research, JPMorgan Securities **JPMorgan**

Stephan Yelenik, CEO, and **Jon Harris-Shapiro**, President, Continuum Health Solutions **CHS**

What is, or will be, the single largest disruptor to healthcare delivery?

HPI: The single largest disruptor to healthcare delivery will be digital therapeutics, bringing uniform scale, access, and affordability to personalized care support, point-of-care solutions, and learning healthcare systems. Personalized care support strategies consider the patient's unique conditions, needs, circumstances, and lifestyle-behavioral health approaches using the most appropriate interventions from an array of scientific disciplines to treat illness, heal disease, and help people regain and maintain optimum health. Underlying these principles is the recognition that all care rests on an open and compassionate relationship between patient and provider to foster patient-empowered self care. Shifting the focus of our healthcare system to prevention, health maintenance, early intervention and patient-empowered self care, accelerating whole-person care technologies holds the power to not only transform the economic models that impede our present healthcare system, but to vastly improve value-based resilience outcomes, which is essential to our nation's future.

PSF: Technology will be the biggest disruptor - both to care delivery and clinical care and also to back-office functions at both hospitals and health plans with technologies like augmented intelligence and robotics process automation. Healthcare will be more readily available outside of conventional institutions.

JPMorgan: The healthcare consumer. They are selecting plans directly and are getting more involved by making decisions on how to allocate their healthcare dollars. The number of employers offering high deductible health plans also continues to grow. In 2017, according to the National Center for Health Statistics, 69.3 percent of Americans were covered by employer-sponsored healthcare and 43.2 percent of the employer market was enrolled in a high-deductible health plan (HDHP). With the growth in HDHPs, consumers are

more selective in the healthcare services they use and the cost of these services. Medicare Part D members overwhelmingly (roughly 72 percent in 2017) are selecting plans with preferred pharmacy networks. The opportunity to engage the patient at their preferred point of service should be a differentiator for those organizations with a strong reputation and a trusted brand.*

TAVHealth: The transition from fee-for-service to fee-for-value will be the largest disruptor in healthcare. This shift in payment incentives will fundamentally change the approach of healthcare delivery, and most traditional delivery models may not be able to pivot fast enough to deliver the outcomes payers will require. Going forward, addressing Social Determinants of Health (SDoH) will be the necessity for successful value-based contracts. Organizations that develop capabilities to find and address SDoH will survive the disruption of fee-for-service and be positioned to take part in the opportunities value-based models have to offer.

CHS: Innovators are deploying population health management (PHM) strategies that foster patient engagement, promote preventive services, close chronic condition care gaps, and improve coordination across the spectrum of physician, hospital, and ancillary providers. Successful PHM strategies require data systems that are designed to look beyond the EMR in order to segment population, identify opportunities, and empower providers, care coordinators, and other interventions with timely, actionable, and clinically meaningful information. They also assess outcomes and track key performance indicators germane to value-based indicators. The more revenue becomes contingent upon achieving improved outcomes, the more disruption will occur.

Current “Mega-Disruptors” (Amazon, Berkshire Hathaway and JPMorgan Chase; Walmart and Humana; CVS Health and Aetna; Cigna and Express Scripts; and Anthem and IngenioRx) are on their way to changing how healthcare operates by eradicating outdated assumptions on how optimal customer experience and sustained high-value healthcare can be delivered. What are the impacts these mega-disruptors will have on your organization?

HPI: The disruptors are making the leap to unleash new customer-centric business models that remarkably realign stakeholder incentives and customer experience demands in favor of organization health and human capital performance improvement that rally healthcare delivery innovations to jumpstart growth and profitability. The impact of these forward-thinking firms validates where the market needs to go and the approaches that need to be considered. Essentially, the disruptors aren't waiting for a governmental lead. Rather, they are blazing the trail for new ways of thinking while solving issues of access and affordability. Proofs of concept are crucial for both startups entering the space with their own ideals and established firms creating upgraded products and service lines. The end game is to deliver value to consumers and those who pay their bills.

TAVHealth: We would argue that these companies are not necessarily mega-disruptors, but rather aggregations of large legacy assets of the fee-for-service model trying to reinvent themselves. The question will be whether they can repurpose their fee-for-service assets to thrive in an outcomes-based environment. As we've seen in other business verticals where external forces have created mega-disruptors that were nonexistent just years before (Amazon in retail), the real disruptors in health and healthcare may be organizations that we have yet to notice. Their impact on our organization, if anything, will be positive as our business model relies on value-based incentives that we think will be strengthened by these bigger players.

PSF: We are keen observers of these activities, which involve many of our clients directly, and many more of them indirectly. I think some of the biggest direct impacts will be on the “middlemen” – pharmacy benefit managers and wholesalers, and on biopharma, but the latter effect will be more in the retail drug space.

JPMorgan: Many of the “mega-disruptors” are still in the planning stage. JPMorgan, Berkshire Hathaway, and Amazon have yet to articulate their exact plans. Statements made to date are broad-based, but include technology solutions for high-quality, low-cost transparent care. In addition, CVS/Aetna and Cigna/Express Scripts still need regulatory and shareholder approval (Cigna/Express Scripts). Walmart/Humana hasn't formally announced a deal and could decide on a deeper joint venture relationship rather than an outright merger. With all that said, we believe that the market is shifting due to the consumer paying more for healthcare out of pocket and shopping for the best value and consumer experience. We believe the growth in the number of retail-based clinics over the past decade is a product of meeting the consumer demand for lower-cost, convenient primary care. In addition to acute primary care services, these clinics also offer immunizations, physicals, and chronic care monitoring. We are also seeing more lab services available in a retail-based setting. Given the current retail footprint, we expect more healthcare services to be offered at retail over time.*

CHS: Disruptors create opportunity for our team. We specialize in integrating the comprehensive array of data captured by all the different entities that contribute to patients' care. In its native form, such data is fragmented and disparate and does not adequately support the drive toward improved clinical and financial outcomes. We bring all that data together to create a unified platform of clinical intelligence that is used to provide a true 360-degree view of patient and population health. Such a view is used to stratify the population, assessing needs and identifying opportunities to improve outcomes; empower providers with timely and actionable information about their patients, optimizing the value of each encounter; and assess the impact of programs on clinical and financial outcomes, measuring ROI.

“The disruptors aren't waiting for a governmental lead. Rather, they are blazing the trail for new ways of thinking while solving issues of access and affordability.”

- Les C. Meyer, HPI Advisors

How will Millennials & Gen Xers receive healthcare differently than Baby Boomers?

HPI: Millennials and Gen Xers are taking over the workforce. Facing an increasingly competitive fight for top talent, employers are molding total rewards programs that will deliver a tech-forward, personalized work-life experience that uniquely fits individual team members' needs to meet the expectation of this generation. Buying habits demand affordable benefits options, which are convenient, accessible, user-friendly and driven by information exchange at the point-of-care. They expect timely, relevant content and immediate personal fulfillment. Everything social is imperative in their minds, including custom-fit, work-life personalized care support tools and wireless-enabling technologies. Boomers are slowly adopting these buying trends, yet are not as demanding in terms of speed, access, efficiencies, and outcomes.

TAVHealth: Healthcare for these young populations will be both similar and yet drastically different from the healthcare experienced by Baby Boomers. In some ways, value-based care is a throwback to the past; house calls, for instance, were a way to literally step into the patient's world and get to know them on a deeper level, beyond just issues affecting their heart or knee. Like the neighborhood doctors of the past who really knew their patients, value-based care requires conversations to understand the patient, not just their heart or knee. However, the delivery models of value-based care must also be scalable to meet the needs of all. This is where much of the innovation sits and where the healthcare of the future will find ways to create better access through things like telemedicine, lay navigators, machine learning, and whole-person-centric (not patient-centric) approaches. We see healthcare as evolving in the direction of being both humanistic and cost-effective, and the best of both worlds, old and new. That is where value will be found. Our

platform, TAVConnect, allows users to gather, store, analyze, and safely share clinical and social data and see the entire story of the patient. They can then step outside of their organizational silos to collaborate in virtual teams to mitigate these challenges surrounding patients. These patients, the ultimate healthcare consumers, benefit from getting the help they need at the time they need it.

PSF: The young are more tech savvy, less connected to a particular set of providers, and much less patient with "business as usual" when it comes to activities like scheduling and getting services.

JPMorgan: Millennials and Gen Xers have become accustomed to getting goods and services from electronic devices. These generations prefer to email, text, and use the internet to obtain what they need. We believe as these generations need healthcare services they will increase the adoption of telehealth services. Many Millennials and Gen Xers don't have a primary doctor. Telehealth is virtually untapped today, but we expect utilization to increase, which will help to solve two key issues: lack of access to care (especially for those who don't have a primary care doctor) and rising costs. In our view, we expect the next generation of healthcare offering to be tailored to consumers in their most desirable settings, retail and home.*

CHS: While much attention has been given to how these populations use technology, this population will more likely have problems finding adequate, affordable insurance coverage and may face problems paying their healthcare bills. Several trends are having a greater impact on these populations than their predecessors. For providers, these trends are resulting in increases in uncompensated care.

“**Telehealth is virtually untapped today, but I expect utilization to increase, which will help to solve two key issues: lack of access to care (especially for those who don't have a primary care doctor) and rising costs.**”

– Lisa Gill, JPMorgan Securities

What role do you see your organization playing to help address the challenges of regulations, code compliance, privacy and electronic medical records (EMR) concerns, physical safety, and cyber security to better serve “the consumer of healthcare?”

HPI: The digitization of healthcare has opened the sector to a “Pandora’s box” of mission-critical issues for hospitals “as a system.” C-suite leaders face a multitude of brick-and-mortar pressures to swiftly advance the strategic market expansion imperative – a consumer-friendly “hospital without walls” via a business model that accelerates high-value outcomes through personalized care support experiences at the point-of-care – to better serve the needs, wants and demands of “the consumer of healthcare.” Our role is to guide innovation teams to value adaptability and flexibility, and to execute company-wide, value-oriented organizational quality improvement programs that address employee health and psychological safety, positive health outcomes practices, and tackle health-related complex adaptive challenges.

TAVHealth: We are focused on helping communities find and address the social circumstances that live upstream from the healthcare system, the Social Determinants of Health (SDoH). No value-based healthcare program can be successful without a solution for these SDoH. Our role in addressing these challenges is to innovate around the interplay between data and collaboration.

PSF: We are involved in working on all these issues with all of the participants in the healthcare and life sciences ecosystem. Our clients range from the incumbents to the disruptors and we look forward to helping all of them to succeed in responding to new opportunities and threats.

What will the delivery of healthcare look like by 2020? Will we continue to see healthcare incorporate strategies like those used on the retail side – i.e., more customized services, increase in home health, etc.?

HPI: No More Business as Usual. The personalized care support (PCS) at the point-of-care approach to health and outcomes maximization, cost-effectiveness and personalization focuses on helping people reach their optimal health and wellbeing goals as defined by them – not their provider. PCS digital therapeutics might best be viewed as community-based healthcare without walls or a marriage between real-time information technology and seamless population health promotion – trusted-clinician, patient advocate-nurse navigator and primary care delivery. The multidimensional platform of the PCS therapeutics removes chronically ill consumers from fragmented scenarios into a lifetime system of seamless delivery across the full continuum of care. Improvement is of the utmost importance. It no longer matters whether costs arise from occupational illnesses and injuries or non-work-related “health span” problems as long as the issues are resolved and quantify value. As we move the needle to show financial impact of population health outcomes using value of investment (VOI) metrics currently available – and recognize that digital therapeutics is constantly evolving – artificial intelligence and predictive analytics will have to mirror integrated-enabling digital therapeutics programs.

TAVHealth: As healthcare evolves toward a retail model, we’ll see an increase in these strategies along with strategies that have yet to be conceived. In 2020, we think the delivery of healthcare will be full of “experiments” in the search for what leads to better outcomes – better systemic outcomes for communities, health systems, and

social services, and better individual outcomes for patients. The restrictive mindset of fee-for-service will increasingly be replaced by the expansive mindset of value-based-care, and, as we know, when mindsets change so does behavior. This broadening shift to see and understand the whole person will lead to new interventions extending far beyond the clinical sphere and into the world of social determinants. We are excited to see what unfolds and how new strategies will improve the work to mitigate SDoH and to improve overall health.

PSF: We will see some incremental changes, largely around services that can be moved easily from inpatient to outpatient settings and from doctors’ offices to retail. I think with post-acute care, we will see a shift from skilled nursing facilities to home health, and innovative payment arrangements will arise.

JPMorgan: We believe it will take time for them to fully develop offerings for the commercial market. We anticipate more services like telemedicine and the CVS recent initiative focused on chronic kidney disease and dialysis for patients in the home. We anticipate that more payers will continue to explore ways to service chronic patients in the lowest cost setting, i.e., the home. We also anticipate that patients/members will seek incremental data on the best outcomes for dollars spent, especially as out-of-pocket costs continue to rise.*

CHS: Healthcare delivery systems will continue to expand and grow in order to have more negotiating leverage with payers and to have the scale to support and succeed at value-based models. Shifting economic fundamentals will drive individual practitioners

and small group practices into larger delivery systems, often dominated by the hospitals. As such, your neighborhood doctors' offices are going to have more of a corporate/retail flavor.

How has the healthcare industry and your organization been affected by the shift from the traditional fee-for-services payment model focused on volume to a value-based model focused on outcomes? Do you think the value-based model is here to stay?

HPI: The effect of value-based payment models on the healthcare industry include: 1) Hospital closures continuing to escalate; 2) Hospital layoffs and outsourcing continuing to increase; 3) Inpatient admissions decreasing and outpatient services increasing; 4) Readmission rates continuing to decline amid increases in inpatient surgical admissions; 5) Hospital-health systems leveraging social determinants of health data for value-based care success; and 6) New Group Medicare Advantage Employer Group Waiver Plan strategies for associations and coalitions. We help clients accelerate business results in the age of disruption, providing them with disruptive business strategies/adaptive solutions. Value-based care is the future of healthcare delivery in the U.S. There's no going back to a dysfunctional fee-for-service healthcare delivery system that is widely recognized as a misaligned reimbursement system unable to meet customer experience demands and create value for consumers.

TAVHealth: We believe that the "horse is out of the barn" and the value-based model is here to stay. We haven't been affected by the shift, we are the shift. For seven years we've anchored our entire approach to improving health on value-based-care and Don Berwick's Triple Aim - better outcomes, lower costs, and better patient experience. We believe that achieving the Triple Aim requires solutions for the social determinants that get in the way of patients' health. While early on we came across many in the healthcare world that didn't embrace fee-for-value, now we are able to show compelling outcomes of our work and turn skeptics into believers. (Look around at how lucky we are to be alive right now. - "Hamilton") The fee-for-service model is unsustainable and, if left unchecked, will take down our nation's economy. So, here's the good news: Many great movements stem from solving problems and our country of innovators and doers has risen to the occasion to solve this problem. Our prediction is that healthcare in the U.S. will strengthen as we compete to find the best solutions. This healthy competition to meet patients' needs will win over the inertia of the fee-for-service system and provide the forcing function that will drive sustainable and effective healthcare in the U.S.

PSF: Change is a constant and we need to evolve our own offerings and capabilities to ensure we are a trusted advisor. Value-based care has been an important theme for the last several years, and I anticipate its continued importance.

JPMorgan: We expect ongoing interest from all stakeholders in value-based models that tie reimbursement to health outcomes. The increasing retail factor of more patients selecting health plans directly (public and private exchanges and Medicare Advantage) and higher deductibles are making patients more price- and outcome-sensitive. Examples of value-based initiatives currently in action across the healthcare landscape include: 1) Accountable Care Organizations (ACOs) - a coordinated group of providers that provide high-quality care to Medicare patients and operate on a shared savings model; 2) Hospital readmission reduction programs - linking payments to patient readmissions within 30 days of discharge; 3) Performance-based retail pharmacy networks - tying reimbursement levels to quality metrics such as adherence; 4) DIR fees - timing pharmacy reimbursement to a set of performance metrics; 5) Risk-bearing contracts with pharmaceutical manufacturers - generally incremental discounts if the drug doesn't meet or exceed certain efficacy targets; and 6) Population health solutions and data/analytics tools to help providers manage costs and improve health outcomes.*

CHS: Economic fundamentals are driving the shift from volume-based reimbursements to value-based payment models that reward providers for improving clinical outcomes. There is no going back to the "golden" fee-for-service days when healthcare providers were paid on a piece-work basis without regard to outcomes. Healthcare systems are making huge investments - re-orienting their systems and building the clinical, intellectual, and technological infrastructure to optimize the impact that they are having on their patients - to succeed under outcomes-based reimbursement models.

Please share any general thoughts or predictions you have about healthcare in the U.S.

HPI: Disruptors will continue to unleash customer-centric business models that realign misaligned stakeholder incentives and customer experience demands in favor of enterprise-wide performance improvement strategies that rally around healthcare delivery innovations that jumpstart growth and profitability. We are working on meaningful distinctive disruptive capabilities, enabling technologies, and learning system collective impact collaboratives that will drive the biggest changes in the health industry over the next two years. Some of these include Tiatros Inc., a San Francisco-based digital therapeutics company; Springboard Healthy Scranton, Geisinger Health System's launch site for an innovative, exciting approach to an entire community's health; Aetna Group Medicare Advantage (Employer Group Waiver Plan) Strategies for Associations and Coalitions; Bind On-Demand Health Insurance, which allows you to pay for what you need, not what you don't; and Lifeworks' Total Employee Well-being Platform, advancing digital health technology to transform the way employees live their lives, in and out of the workplace.

PSF: Better care, better consumer experience, and lower healthcare spending.

JPMorgan: There are several key themes. First, specialty remains the fastest growing area of drug spend and is projected to be 55 percent of total drug spend by 2021. We anticipate that payers will continue to look for ways to address rising specialty costs. We project that more value-based programs will be introduced that partner payers with pharmaceutical manufacturers to absorb the risk when the drug fails. The patient will be viewed more holistically and many chronic patients will be managed through pharmacogenomics. Keeping patients adherent to their prescriptions and providing pharmaceutical consultative services should drive better outcomes. These themes, coupled with consumerism in healthcare (i.e., more transparency on price and delivering healthcare services in a setting that is cost effective and convenient for the patient or member while

driving better healthcare outcomes), are the goals of many of the players across the U.S. healthcare system. We don't expect there to be a "one size fits all," and healthcare will continue to be delivered locally. Think globally – act locally.*

CHS: Large, self-funded employers will continue to be a laboratory for innovation. Metro Nashville Public Schools, for example, provides comprehensive medical benefits to over 18,000 individuals. Because of concerns about the ever-increasing costs of providing such coverage and the impact that teacher health has on educational outcomes, the school district went from passively purchasing healthcare benefits to actively managing the health of its covered population. The district partnered with Vanderbilt School of Nursing and opened five school-based clinics. Every teacher is within a 15-minute drive from one of the clinics, and appointments are scheduled so no more than 15 minutes are spent in the waiting room. The clinics are staffed by family nurse practitioners and provide primary care for all teachers and their families. No copayments are incurred by patients for services at the clinics, and, in most cases, same-day appointments are available. Our findings from this initiative include:

- Worksite clinics reduce overall medical and pharmacy spend by \$2.4 million annually.
- Schools with healthier teachers have students that perform better on standardized testing.
- Access to primary care is tightly connected to talent retention.
- There is a strong correlation between teachers' health and their performance evaluation scores.
- Emotional resiliency can be used to identify "hot spots" where teachers are struggling and more likely to quit.

In May 2017, MNPS leveraged its savings and experience to open its first integrated health center, combining primary care, onsite health coaching, behavioral health, physical therapy, chiropractic, acupuncture, pharmacy and exercise.

“Disruptors will continue to unleash customer-centric business models that realign misaligned stakeholder incentives and customer experience demands in favor of enterprise-wide performance improvement strategies.”

– Les C. Meyer, MBA, HPI Advisors

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Medical Products / Digital Health

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What is, or will be, the single largest disruptor to healthcare delivery?

HC: New entrant players will be the largest disrupting force. The new entrants think about consumers differently than traditional healthcare companies think about “patients.” They will offer more convenience, choice, price transparency, an individualized experience, and integration into daily life. Their large scale also means formidable pricing.

CH: I believe that the rise of value-based care will be the underlying driver to the future of healthcare delivery. This is evidenced with changes in industry regulations, advancements in precision medicine (such as with the recent introductions of targeted immunotherapies for cancer), and the introduction of new enabling technologies such as social media, mobile health platforms/apps, and health information exchanges for physicians and patients to pursue the best possible care in the most affordable way possible.

BEQ: Personalized digital health technology, reaching the greatest number of people, addressing their own issues. We must motivate people to engage. We can address chronic illness management in a much more affordable way. Now add in AI – artificial intelligence. Example: Researchers can embed treatment possibilities into

algorithms, and computers can analyze hundreds of treatment protocols and recommend the most appropriate treatment for a person. Combining the powers of digital health technology with AI is a brilliant way to provide best care, ease of delivery, and patient education.

T: Widespread digital delivery of therapeutic care services will disrupt healthcare as we know it today. Why? Digitally delivered care services:

- Are accessed from anywhere, at any time;
- Are delivered at massive scale and low cost with high-value outcomes;
- Overcome many infrastructural barriers to healthcare delivery, e.g., the critical shortages of skilled psychotherapists, cost, distance, and stigma;
- Integrate into providers’ existing clinical workflows to augment existing care services and to create important new care capabilities; and
- Can save billions of dollars by helping to prevent disease progression.

“ I believe that the rise of value-based care will be the underlying driver to the future of healthcare delivery.”

– Michael Pintek, Cardinal Health

Current “Mega-Disruptors” (Amazon, Berkshire Hathaway and JPMorgan Chase; Walmart and Humana; CVS Health and Aetna; Cigna and Express Scripts; and Anthem and IngenioRx) are on their way to changing how healthcare operates by eradicating outdated assumptions on how optimal customer experience and sustained high-value healthcare can be delivered. What are the impacts these mega-disruptors will have on your organization?

CH: As the healthcare ecosystem evolves, the lines across the industry are beginning to blur as payers and providers move to expand their role across the healthcare value chain to reduce costs and improve access to healthcare. I believe this evolution will accelerate innovation with a greater focus on the patient journey across the healthcare continuum.

HC: Together Amazon, Berkshire Hathaway, and JPMorgan Chase have 1 million employees. Only Walmart has over 1 million (2.3 million as of 2016) and 96 percent of U.S. businesses have under 50 employees. The scale, wealth, and innovation behind these companies combined is unmatched. It will allow them to experiment, fail, or succeed quickly and continue to iterate until they get it right. Legacy healthcare companies can lack the nimbleness required to succeed in a rapidly evolving environment. The mega-disruptors are also well versed in gathering real-time consumer feedback and using that feedback to improve processes and create the optimal consumer experience. Amazon has brilliantly created a venue that has the average consumer believing that they can get any item they need reliably fast for a competitive price. Consumers also understand that if there is a problem it will be quickly remedied. Healthcare does not produce widgets, it is a complicated service in which no consumer’s

set of needs represents anything textbook. JPMorgan understands this well as they have hosted the largest annual healthcare conference for over three decades, staffed with analysts who have come to understand the legacy companies and their place in the overall healthcare ecosystem. Berkshire Hathaway helps the former spread the risk. The impact on HealthCAWS is, on one hand, that the threat of the disruptors offers opportunity for new business, while the scale reinforces that healthcare has become a mega-company game, driving more mega mergers, and small and midsize companies developing partnerships or being forced to the sidelines.

BEQ: It forces us to keep up – we must ensure companies of all sizes know they are prospering from state-of-the-art health services. With more personalized vital technology it becomes more and more within reach for us to provide companies of all sizes excellent healthcare – from education and proactive health to chronic illness management – and to motivate people to want to participate, engage, and become an advocate for their health.

T: They are paving the way forward for Tiatros and other digital therapeutic companies, and will become our future technology and distribution partners.

How will Millennials & Gen Xers receive healthcare differently than Baby Boomers?

CH: I believe Millennials are seeking “on-demand” healthcare, Gen Xers will focus on transparent and actionable healthcare as they also care for their children and aging parents, while Baby Boomers will focus on maintaining health and living longer while managing chronic conditions and avoiding life-threatening diseases. In particular, Millennials will have a desire for “on-demand” healthcare and technology (e.g., social media, online research, ratings sites, healthcare apps, patient portals, etc.) to provide real-time information 24/7 and, to save money and time, will be prone to only see a doctor when necessary.

HC: Millennials and Gen Xers will find healthcare differently via look-ups and then will trust ratings online versus relying only on referrals from their doctor or family and friends. They will want

service that is convenient, fast, and least disruptive to their day. This offers tremendous opportunity for remote technologies, i.e., telehealth, and reliable, valid smart phone apps.

BEQ: I think there is the potential for vast improvement. To start with, the numbers are smaller as they age (compared to Baby Boomers), which is when health demands expand. I am also very hopeful that they will benefit at a younger, stronger health status from our push for more proactive, healthier lifestyles, having less chronic illness. With earlier education being more available to Millennials, they can become much more constructively involved in their healthcare decisions, less dependent on the traditional one omnipotent yearly doctor’s appointment. Our trend with technology is providing more ways to interact with their health and healthcare continuously.

T: Young people prefer on-demand care services that integrate directly and conveniently into the rest of their work and home life. They live their busy lives with mobile devices being their preferred method of receiving information and services, including care services. They favor care services that are available online, delivered

(with consistently expert quality) to them anywhere, typically in the comfort of their homes, on their own devices, when it works best for their schedules. They prefer care experiences that are social, engaging, and relatable, so they complete their care programs and benefit from them.

What role do you see your organization playing to help address the challenges of regulations, code compliance, privacy and EMR concerns, physical safety, and cyber security to better serve “the consumer of healthcare?”

HC: HealthCAWS offers support portals that include resource centers and readiness tools that address many of the U.S. government incentive programs such as Meaningful Use/Advancing Care Information and the Quality Payment Program (QPP). The HealthCAWS tools also address consumer engagement and quality improvement as business imperatives irrespective of the regulatory guidelines.

BEQ: Our job is to provide clear, affordable paths to providing personalized services, enabling companies to control co-pays, to profit, so people have the security of a job and healthcare. Reducing financial stress for both employer and employee so we can all focus on what we need to, is our role. I would much rather, as health providers, that employers and employees invest their “health” time on health literacy, investing time in lifestyle health practices and education, rather than the constant financial and administrative concerns. I do believe the more interactive role, and responsibility, we all take with healthcare does take some of the burden off of “the system” and allow them to focus on the real task – providing the best health. Yes, doctors and hospital systems are now held accountable

in more ways because of technology and sophisticated ranking systems ... but this is providing health for the healthcare system.

T: Tiatros’ psychotherapeutic and psychological resilience programs integrate with, and supplement, existing clinical psychiatric workflows. They offer a scalable alternative to traditional in-person individual or group psychotherapy that can reach patients anywhere. They can be designated as a prerequisite or an adjunct to the use of psychopharmacologic medications. Providers can offer them immediately to patients who are on waitlists for psychiatric services. They can offer our programs to chronic somatic disease patients at intake. Hospitals can offer supportive Tiatros resilience programs to the family caregivers who manage the care of their chronically ill patients, helping them manage their stress and caregiver burnout.

“**Reducing financial stress for both employer and employee so we can all focus on what we need to, is our role.**”
– Shira Litwack, BenefitsEQ

What will the delivery of healthcare look like by 2020? Will we continue to see healthcare incorporate strategies like those used on the retail side – i.e., more customized services, increase in home health, etc.?

HC: The shift to pay-for-value is expected to be 75 percent to 100 percent saturated by 2020, including government and commercial payers. More physicians are opting for staff positions or joining large group practices rather than private practice to address the risk and focus on patient care (less than 50 percent now have an ownership stake in their practice). Health systems will continue to focus on advancing the consumer experience as they employ chief experience officers to focus on better understanding consumer need, push services into the community and home (versus the acute hospital setting) to compete with retail, and partner with health plans and large employers to create infrastructure and assume shared risk.

BEQ: Albeit only two years away, political decisions are made – not just in terms of those that directly impact health, but other burdens on corporations, financial demands, that sabotage health efforts. I know I like to focus on empowering people – health literacy is of great concern. Yes, we have to deal with the chronic conditions, but we must also encourage people taking greater interest, power, and participation in their health, or this vicious cycle will not end. We will definitely see healthcare incorporate more “retail” strategies. One of the many advantages to the healthcare technology and wearable technology rage is getting people more involved and intrigued with their health, creating a demand for these services.

T: The emerging digital therapeutics products coming to market promise to deliver new patient care services that are safe, effective, convenient, and affordable. If traditional healthcare providers want their patients to benefit from these new digital healthcare delivery

solutions, they will first need to help optimize and personalize them for their patient population's use, and then empirically validate them for use with their patients.

How has the healthcare industry and your organization been affected by the shift from the traditional fee-for-services payment model focused on volume to a value-based model focused on outcomes? Do you think the value-based model is here to stay?

CH: Value-based healthcare is here to stay in the drive to lower costs, improve quality, and achieve greater transparency in value. The shift has impacted providers and patients through increased pre-authorization requirements, authorized use criteria, and scrutiny related to patient care decisions. Additionally, bundled payments and incentive programs (tying payments to performance ratings) are further moving healthcare systems to pay for value.

BEQ: I do think the value-based model is here to stay - especially as Millennials take more power. Focusing on outcomes goes much further in supporting real health, not sick care. The value-based model is a good exercise for all of us - making us rise to the challenge, which I believe is very much for the greater good.

HC: The value-based model is clearly here to stay, but will require fine tuning to align accountabilities and financial reward or penalty. The transition is slower than most would have hoped. The retail disruptors only disrupted because they put the power in the hands of the consumer at their convenience for products they wanted or needed. While healthcare is more complicated, outside of complex care in situations of rare disease, cancer, trauma, and other acute illness, forward-looking healthcare organizations are following suit to offer this same level of convenience and service for routine care and health management support and a more consumer-friendly environment when complex services are required.

T: I think value-based medicine is here to stay and that the widespread adoption of digital therapeutics solutions will support and expand the use of this payment model. That said, it is interesting to note that our customers all anticipate that Tiatros will save them money, potentially

a great deal of money, but no one to date has asked us to document cost savings. What they ask us to document is that 1) their patients experience Tiatros' behavioral health and psychological resilience programs as being engaging and relatable (so they complete their programs and benefit from them) and 2) Tiatros improves the health, productivity, and psychological resilience of their entire patient population - which we do using several validated productivity and clinical outcome measures as well as innovative advanced analytic methods. Their belief that we will save them money is based on their experience with various wellness apps and on-demand care services that they deem effective, even though they view them as "thin" or "pointy" products that generally achieved only limited adoption among their workforces.

“The question will be whether these companies can repurpose their fee-for-service assets to thrive in an outcomes-based environment.”
- Kimberlie Cerrone, Tiatros

Please share any general thoughts or predictions you have about healthcare in the U.S.

HC: In order to optimize health and make healthcare more affordable at the individual level, attributable populations will be defined and data analytics will help us understand which individuals can benefit from which interventions. Tailored interventions will be applied where and when the consumer wants them, and outcomes or value will be used to refine their offerings and become businesses driven by consumers.

T: According to the National Institute of Mental Health, over 30 million Americans who have treatable mental illness are not receiving treatment because they cannot access affordable care. At least 10 million of these people have one or more major chronic illnesses and co-morbid treatable mental illness. This suggests to me that behavioral health is the horizontal play for digital therapeutics. I see that employers and their human resources groups will become more prominent leaders in healthcare delivery, since employers bear much of the total cost of this problem, losing \$200 billion in productivity each year due to untreated mental illness (while spending another \$200 billion to treat anxiety and depression in the workforce). At the same time, the largest and most difficult-to-quantify part of their corporate healthcare budgets is spent

indirectly on mental illness, i.e., hundreds of billions of dollars of healthcare spending on chronic gastric illnesses, musculoskeletal illnesses, insomnia, pre-diabetes conditions, heart disease, and high-risk pregnancy and premature birth cases that are greatly exacerbated by untreated co-morbid mental illness.

BEQ: Health literacy in the U.S. is dangerously low. Healthcare is an acute-care, reactive, rear view mirror model. With value-based we are creating a population that thinks about healthcare differently. It's not just about finding the best insurance rates. Proudly, we are getting people into healthful practices, educating communities, making it motivational, building camaraderie through health - this is how we are getting to where we need to be. Building health literacy needs to be integrated into work and community life. We have to change the mindset and continue on an interactive model; yes, each and every person has a role to fulfill. Medical testing, of course, is vital, but it is not proactive health. The U.S. healthcare system has been devoid of health pride, motivation and empowerment. Everyone is caught up in the reactive, political, administrative, rather than building health. We are changing that. As each year goes by, we will have created a health-centric population.

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