WHITE PAPER

Healthcare Trends & Industry Outlook

PATRICK ALLEN

Principal, Healthcare Business Consulting, EPAM US

HIMANSHU GUPTA

Senior Manager, Healthcare Business Consulting, EPAM US

JOHN MEIER

Manager, Healthcare Business Consulting, EPAM US

Contents

Introduction

The United States healthcare system is facing a number of shifting market forces and consumer trends that are shaping the industry and the ways in which payors and providers need to evolve to remain competitive. This Healthcare Trends & Industry Outlook for the rest of 2019 and beyond will delve into some of the most pressing issues impacting payors and providers today, including the ongoing transition from fee-for-service to value-based care, operational challenges facing providers, high deductible health plans (HDHPs) and their effect on the provider revenue cycle, managing provider data with mergers and acquisitions, and finally, how technology, strategic partnerships and non-traditional healthcare companies are affecting the industry. This paper will discuss the complexities associated with each topic and the impact each trend has on the future of the healthcare marketplace.

Value-Based Contracting & The Transition of Risk

As the transition from volume- to value-based financial models progresses, managing the clinical quality and financial impact of this change will be a challenging but critical task. Payors are continuing to push providers into value-based financial arrangements, either by allowing them to accept some (or most) of the downside risk for the clinical quality and financial performance of an attributed population or through other non-traditional arrangements. **According to the Health Care Payment Learning & Action Network, an arm of the Department of Health and Human Services (HHS), 34% of total healthcare payments were tied to value-based models in 2017, compared to 23% in 2015.**[1] This trend has continued to accelerate to the point where some payors have stated that more than half of their providers are in a value-based contract arrangement in 2019. While some providers are expressing concern over taking too much risk without the proper legal protection or operational capabilities, this trend is expected to continue.

While there are many value-based contract models, the three most popular contract formats are:

EVIDENCE-BASED CARE

Reimbursement increases slightly when certain evidence-based protocols are followed, and quality measures are met. This arrangement resembles "bundled payments" and is usually limited to certain conditions.

UPSIDE-ONLY RISK SHARING

Providers share savings assuming certain cost and quality measures have been met, but they do not share in cost overruns. This model is usually temporary, as the payor ultimately wants the provider to take downside risk as well. Defining metrics and gates for risk sharing are critical here.

FULL RISK SHARING

Providers and payors share in cost savings and cost overruns. Similar to the upside-only risk sharing contract, defining terms - especially the population and cost basis - is critical.

To succeed in these arrangements, providers will need to work more closely with payors than they have in the past. Well-designed value-based contracts can promote interoperability by aligning incentives for both providers and payors. Critical to success is access to necessary cost and quality data, an effective workflow, and provider engagement. With a properly executed agreement, a cooperative payor and the willingness to operate differently, patients can experience better health and providers can achieve significant financial advantage.

[1] https://www.fierceretail.com/digital/80-shoppers-do-online-price-comparison-before-store-shopping

Operational Challenges Facing Providers

Providers across the country are facing a number of operational challenges stemming from legislative, clinical and financial changes, including:

- Increased competition due to merger and acquisition activity between health systems, provider groups, payors and other ancillary service providers
- Personnel shortages
- Increased bad debt due to HDHPs and declining reimbursement compared to inflation
- IT and cybersecurity costs
- Higher percentage of people aged 65 or older
- Inefficient revenue cycles and other business processes
- Overcrowded emergency rooms due to usage as primary care sites

To address these challenges, providers must look to innovative applications for help. While there are many potential solutions to combat these issues, many providers have experienced success by leveraging technologies in healthcare, like robotic process automation (RPA), intelligent automation (IA) and the internet of things (IoT). Many of these approaches have proven effective in other industries, but they are just making their way to healthcare.

ROBOTIC PROCESS AUTOMATION (RPA) & INTELLIGENT AUTOMATION (IA)

RPA takes high-volume, highly repetitive assignments out of human hands, and uses software tools to accomplish them. RPA can be used to open emails and attachments, facilitate patient data collection, cross-reference forms for accurate claims submission, pull in data from disparate internal systems, and extract information from documents and databases. RPA tools increase business efficiency and allow employees to focus on higher-value tasks, such as patient care and customer service.

Given the volume of manual tasks that require little cognitive effort, revenue cycle management presents many opportunities for cost savings and efficiencies using RPA. The monotonous, unchallenging nature of certain billing cycle functions can lead to human error with financial ramifications. Bots that leverage RPA can perform a wide range of tedious tasks, such as data integrity checks, authorization and insurance coverage validation, patient financial responsibility calculations and automating payment plan reminders. This approach can reduce the number of denied claims, increase point-of-service patient collections and allow employees to focus on greater value-added activities or patient-centric responsibilities.

While RPA focuses on automating routine, repetitive tasks, IA enables organizations to complete job functions requiring judgement, intuition, creativity, persuasion and problem-solving.

Some examples of IA-enabled automation include:

- Digital avatars interacting with patients to streamline the pre-registration process
- Virtual medical assistants answering patient questions based on symptoms
- Embedded microchips analyzing a patient's biological data

THE INTERNET OF THINGS (IoT)

An important factor that enables IA capabilities is IoT, which extends internet connectivity into physical, everyday objects. Because of IoT, applications, embedded chips, wearable devices and other new medical products are capturing an extensive amount of data on patients. IA is then applied to the data aggregated by IoT to help detect trends and weed out unusable information to help make evidence-based patient recommendations.

Some examples of IoT use cases in healthcare include:

REMOTE HEALTH MONITORING

Using one of the many commercially available devices (Fitbit, Apple Watch, etc.), providers can monitor a patient remotely and observe any notable variations in patient vitals to determine whether intervention is necessary. Remote monitoring greatly reduces the time spent on patients coming in for routine checkups and instead enables physicians to focus their efforts on critical patients.

REDUCE EMERGENCY ROOM WAIT TIMES

The availability of a room is typically reliant on someone determining its vacancy in a system. IoT can help remove this dependency by using sensors placed within the room. This can help streamline occupancy processes and reduce the manual effort and time spent by hospital staff to monitor room availability, while also decreasing wait times for emergency room patients who require inpatient care.

ENSURE THE AVAILABILITY & ACCESSIBILITY OF CRITICAL HARDWARE

Sensors can help hospital staff identify if maintenance is required, locate necessary equipment, and track usage to improve inventory management and promote effective utilization. Better availability of critical hardware and preventive maintenance triggers will reduce downtime and incurred costs for hospitals.

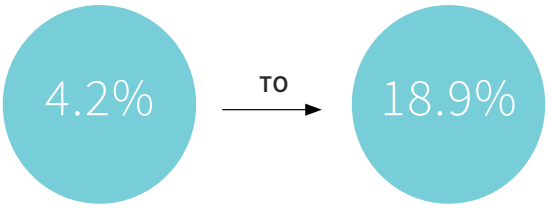
TRACK STAFF, PATIENTS & INVENTORY

It's hard to maintain security without the ability to track staff members, patients and hardware throughout the hospital building. IoT devices are an inexpensive method of monitoring daily activities in a hospital setting. Smart locks, RFID sensors and GPS chips all play critical roles in tracking assets, patients and staff to reduce the amount of manual effort spent on these tasks.

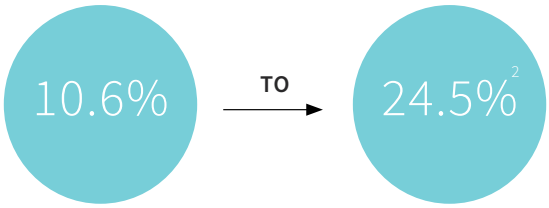
HDHPs & Their Effect on the Provider Revenue Cycle

The CDC is seeing significant enrollment increases in high-deductible health plans, with and without accompanying health savings accounts (HSA), while the use of traditional health plans is decreasing.

AMONG ADULTS AGED 18-64 WITH EMPLOYER-BASED HEALTH COVERAGE FROM 2007 THROUGH 2017, ENROLLMENT IN HDHPs COUPLED WITH AN HSA GREW FROM:



WITHOUT AN HSA, THE PERCENTAGE OF ADULTS GREW FROM:



This trend is likely due to the significantly lower cost of these health plans, though it's unclear whether enrollees fully understand the level of risk that these plans entail.

Proponents of HDHPs claim that these plans encourage consumers to take more responsibility for their health, helping to curb spend by making more cost-conscious decisions when seeking medical care. Unfortunately, this is not always the case.

43%

ACCORDING TO THE KAISER FAMILY FOUNDATION, 43% OF INSURED PATIENTS SAY THEY DELAYED OR SKIPPED PHYSICIAN-RECOMMENDED TESTS OR TREATMENT BECAUSE OF HIGH COSTS OR BECAUSE THE PROVIDER COULD NOT TELL THEM THE COST AHEAD OF TIME.[3]

[2] https://www.cdc.gov/nchs/products/databriefs/db317.htm

[3] https://www.kff.org/health-costs/press-release/new-kaisernew-york-times-survey-finds-one-in-five-working-age-americans-with-health-insurance-report-problems-paying-medical-bills/

[4] https://www.thinkrevivehealth.com/blog/unintended-consequences-high-deductible-health-plans

The reality is that consumers are thinking twice about spending money on care they deem "unnecessary." This behavior, in turn, hinders early diagnosis and can result in increased costs for managing chronic conditions, which costs the healthcare system more in the long run.

Providers are stuck handling the repercussions of this insurance paradigm shift. Over the past five years, HDHPs have been a growing contributor to increased debt expenses. Because more of the burden of payment has shifted from payors back to patients, providers are seeing less payment from services rendered. Boston Children's Hospital, for example, reported $65.2 million in unpaid collectibles in FY 2016. That's up from $44.5 million in 2015 and more than double from what it was in 2012.[4] This increase corresponds directly to the number of patients with high-deductible plans, who are unable to afford the out-of-pocket expense.

Providers are adapting their billing and collections practices to include new processes, such as medical bill financing services and an improved focus on consumer education to help offset the effects of HDHPs. Savvy providers have begun integrating tools like RPA into their revenue cycle activities to increase point-of-service collections. RPA can perform the pre-authorization process for scheduled services and subsequently interface with the insurer to estimate and communicate the patient's deductible and co-payment prior to leaving the premises. Hospitals are also revisiting their charity care plans (accounting for patients who have insurance but are unable to afford their portion of the bill). And finally, many providers are incorporating cost information into their discussions with patients, which has been shown to increase payment collections and patient satisfaction.

[4] https://www.thinkrevivehealth.com/blog/unintended-consequences-high-deductible-health-plans

Provider Consolidation Necessitates Strong Data Strategy

Over the past decade, healthcare M&A activity has been a constant topic in the news.

IN 2017, 115 TRANSACTIONS BETWEEN PROVIDERS WERE COMPLETED, SURPASSING 112 DEALS IN 2015 AS THE MOST IN RECENT HISTORY.[5] THE TOTAL VALUE OF M&A ACTIVITY, MEASURED IN AGGREGATED REVENUE OF THE TRANSACTED ORGANIZATIONS, NEARLY DOUBLED COMPARED TO 2015, WHILE EXECUTING A SIMILAR NUMBER OF TRANSACTIONS ($63,186B COMPARED TO $31,288B). TEN OF THESE DEALS IN 2017 INVOLVED SELLERS WITH NET REVENUES OF $1 BILLION OR GREATER.

The unprecedented size and scale of these mergers and acquisitions is shaping a new era of competition, which is expected to continue as providers look to broaden their portfolios through strategic partnerships.

With the number of mergers and acquisitions steadily increasing, one key area of M&A activity that continues to be overlooked is provider data management (PDM). When provider contracting and data management are not factored into M&A integration plans, hospitals and health systems put themselves in a costly financial position. Several PDM challenges typically accompany the execution of a merger or acquisition. First, provider data is stored in multiple locations and systems don't allow this information to be shared and/or exist in incompatible formats. Second, provider contracts, fee schedules and rates are typically with different insurance companies and therefore require consolidation. And, third, health systems have different tax identification numbers (TINs). These challenges are compounded by the fact that critical data is housed in both physical and virtual silos, prohibiting interoperability.

PDM requires assessment during the due diligence process to develop an enterprise-wide plan for post-M&A integration. The absence of due diligence attention or a post-M&A data strategy can result in both clinical and financial ramifications. For example, if provider and payor contracts are decentralized, the acquiring health system runs the risk of converting them incorrectly or completely missing them. This scenario can negatively impact care delivery, as patients may receive incorrect or conflicting answers regarding network status. This can also affect reimbursement or create a delay in cash posting. Managing each provider through the process of enrollment, privileging and primary source verification, as well as maintaining Participating Provider (PAR) status, is difficult and labor intensive. Moreover, incomplete and out-of-date provider information will create red flags for payors and CMS.

[5] https://www.kaufmanhall.com/sites/default/files/legacy_files/kh_report-ma-year-in-review_d4-rebrand.pdf

INTEGRATION & THE EFFECTIVE USE OF DATA

Post-merger, all provider data should be reviewed and consolidated into a central, enterprise-wide PDM system. If multiple management or credentialing systems are in use, a single platform must be identified. All information must be converted to the centralized system, and all data must be validated to ensure that the newly established central system is accurate. If the acquired health system's TINs are not converted, the acquiring health system runs the risk of payments being stopped or routed to the wrong TIN.

An effective integration strategy must include plans for properly managing provider data while accelerating the PDM onboarding process. Existing technology must be evaluated to determine whether it can handle a modern-day provider enrollment and data management program. This requires integrating and administrating the entire provider credentialing and enrollment lifecycle to one, ideally cloud-based, database. This integrated digital backbone can facilitate the collection, management and collaboration of provider data for every department and organization that shares this data. While each department may manage their respective tasks independently, utilizing an interoperable digital platform allows each department to holistically view and manage where their provider is in the PDM lifecycle.

The platform should also enable end users to easily link all providers to each of their enrollment contracts. Additionally, this centralized PDM platform must permit TIN conversion management by one group, rather than disparate resources from a variety of departments. Because access to information—regardless of location—is essential, a cloud-based solution is highly recommended. These tools also can help manage in-system utilization and network rationalization activities.

Lastly, hospitals and health systems must also evaluate whether they have the necessary skilled resources in-house to handle the volume of providers being onboarded. If the volume is too high to manage in-house, explore partnering with a credentialing and enrollment team with a proven track record in post-M&A integration.

Achieving the desired goals of consolidation will continue to pose challenges for health systems. With greater awareness of the need for an effective data strategy in M&A integration plans, operational disruption and financial loss can be avoided.

Emerging Disruptors – New Entrants & Technology

It is hard to escape the daily discussion regarding many of the world's most recognizable companies like Apple, Microsoft, Amazon and Google increasing their presence in the healthcare market. All of this hype around non-traditional players and next-generation technology begs the question – how will incumbent payors and providers be impacted?

Since no industry outlook would be complete without an examination of disruptors, let's explore a few examples of how non-traditional players, strategic partnerships and technology can impact the traditional commercial insurance market, where patient care is delivered, their ability to accelerate the shift toward value-based care and unleash the myriad of benefits artificial intelligence (AI) poses in a data-rich industry.

DATA. DATA. DATA.

In a letter signed by Amazon, Google, Oracle and others, Big Tech has committed to "removing barriers for the adoption of technologies for healthcare interoperability, particularly those enabled through the cloud and artificial intelligence."[6] Amazon (AWS), Microsoft (Azure) and IBM (Watson) are among the tech giants that have the existing capabilities needed to develop a robust IT infrastructure necessary to leverage the massive amount of healthcare data that exists. A platform of this magnitude that can capture and synchronize data from a variety of sources has evaded payors and providers previously due the resources, complexity, capital and expertise required. Unlocking the transformative potential of AI in healthcare is reliant on big data that can be made available through a properly designed platform of this nature. Payors and providers alike recognize the potential AI presents. By 2021, it is estimated **AI investment in healthcare will reach $6.6 billion.[7] In its 2019 Trends Report, Forrester predicts that AI will impact two out of three patients in the coming years.[8]** Here are a few examples:

BEHAVIORAL POLICY PRICING

IoT can aggregate personalized information from a variety of data sources into a usable data set for AI tools to analyze. Consumer behaviors and tendencies can then be translated into a pricing schedule specific to each individual's profile. For example, someone who exercises frequently (pulled from data transmitted from their Apple Watch) will face lower insurance costs than an individual engaging in little to no physical activity.

POPULATION HEALTH MANAGEMENT

AI will enable providers to derive actionable insights into complex clinical and social determinants of health for the populations they serve. The ability to aggregate and analyze varying data streams allows for the creation of targeted public health programs.

VIRTUAL MEDICAL ASSISTANTS (VMAs)

The capabilities that make personal assistants, such as Siri, Google Assistant and Alexa, so effective are being utilized for medical purposes. VMAs provide convenient services to patients, such as reminders to take their medication, visit the doctor or refill their prescriptions and non-invasively monitor their health and wellness. Another popular application of VMAs is chatbots, which are being used to answer health-related questions and provide a direct, convenient line of communication to providers.

If Big Tech can succeed in developing an IT platform that removes interoperability barriers, AI can have a profound impact. But technology that benefits the patient, provider and payor will require a partnership between incumbents and these non-traditional companies. By leveraging each other's strengths and existing resources, unleashing the potential of this massive, relatively untapped data set can transform the healthcare industry.

[6] https://www.itic.org/public-policy/CloudHealthcarePledge.pdf

[7] https://benhamouglobalventures.com/2018/08/02/digital-transformation-of-healthcare-state-of-the-union/

[8] https://www.forrester.com/report/Predictions+2019+Healthcare/-/E-RES144495

EMPLOYER ACTIVISTS

Providing high-quality health insurance is a fringe benefit that employers offer as an additional incentive to attract and retain talent. This perk, however, is expensive and the price continues to rise. **The cost of employer-sponsored health insurance grew by 44% from 2007 – 2016.**[9] To reduce the cost of insuring its workforce, companies like Walmart, Boeing and GE are removing the insurance company from the equation and contracting directly with providers to establish Centers of Excellence (COEs). A COE is a select facility that provides certain services covered by bundled payment plans that define and price every element of care. As an added incentive for employees, all travel, lodging and meals are covered for the destination care program.[10]

For example, Walmart has partnered with Geisinger Health to perform cardiac procedures for its employees. Geisinger, in order to position itself as the premiere partner for heart surgery, undertook a process-improvement initiative to implement a standardized workflow, error proofing, best practices and outcomes measurement. This repeatable, best-in-class approach to care delivery improves the consistency of quality outcomes at a predictable price.[11]

These arrangements are gaining popularity as the value recognized by the patient, employer and provider becomes more apparent. The employee receives high-quality care at little to no cost to them. Positive outcomes that lead to reduced readmission rates and less follow-up services allow employees to return to work more quickly. Employers reap financial gain due to a negotiated lower cost and benefit from a healthy workforce. Providers also benefit by bringing in patients far beyond their typical geographical reach. Additionally, bundled payment plans guarantee stable, predictable cash flow, avoiding the financial detriment of bad debt or changing reimbursement structures. As this model continues to be refined and replicated, increased partnerships between employers and COEs could have a broad impact on the roughly 181 million Americans who receive employer-sponsored health coverage.[12]

[9] https://www.healthaffairs.org/doi/10.1377/hlthaff.2018.0481

[10] https://us3.walmartone.com/globalassets/pages/health/2019/associate-toolkit/pdfs/centers-of-excellence-faq-2019.pdf

[11] https://hbr.org/2017/06/why-ge-boeing-lowes-and-walmart-are-directly-buying-health-care-for-employees

[12] https://www.census.gov/content/dam/Census/library/publications/2018/demo/p60-264.pdf

HOME HEALTH

The emerging popularity of home health technologies will result in a shift in the location of care for certain kinds of healthcare delivery, intended to provide added convenience at a fraction of the cost. Providers and patients alike can benefit from the integration of home health options into the continuum of care. Hemodialysis, for example, is a treatment for patients with end stage renal disease that occurs three to four times each week for roughly four hours at a time. A home station now allows the patient to receive treatment safely from home without assistance. This added convenience for the patient also allows the provider to redeploy resources that would be required to administer this service.

Home health services have been praised by long-term care providers as a way to reduce readmissions and ease financial constraints while maintaining a high quality of care. To help accelerate a wider adoption of these services, CMS recently issued a proposal to include in-home virtual medicine and telehealth for Medicare Advantage plans, which would take effect in 2020.[13] Expanding coverage for home health will help accommodate the evolving needs of the patient, particularly the elderly population. The US Census Bureau estimates that by 2035, 78 million Americans will be 65 years and older.[14] This shifting societal demographic will require a much broader availability of in-home care to meet the demand of services in a cost and resource effective manner.

WEARABLES

The growing popularity of consumer devices has given us a taste of the healthcare opportunities that exist with wearables. **According to research conducted by Salesforce, 62% of patients would choose primary care physicians who utilize data from wearable devices to manage outcomes.[15]** The Apple Watch, for example, is an FDA-approved device that monitors heart rate, detects falls and can even perform an EKG. Because of the benefits this data provides, there will be a greater push by providers to partner with developers of these devices and integrate them into their population health efforts. By arming the patient with the technology to detect and transmit problematic symptoms, providers can prescribe preventative measures before a larger health concern arises. On the other hand, a wider adoption of wearables could contribute to a rise in short-term costs due to the detection of previously undiagnosed or unidentifiable health concerns. However, the increased utilization for preventative services will ultimately improve population health efforts by keeping the patient healthy and out of the hospital. This increased ability to mitigate risk creates an additional opportunity for providers to profit from value-based contracts.

[13] https://www.cms.gov/newsroom/press-releases/cms-proposes-modernize-medicare-advantage-expand-telehealth-access-patients

[14] https://www.census.gov/newsroom/press-releases/2018/cb18-41-population-projections.html

[15] https://www.epam.com/insights/infographics/patient-centric-healthcare-infographics

In Conclusion

In order to succeed in the healthcare industry of tomorrow, a paradigm shift in the way leaders view patient health is required. There is an obvious need to reduce injury and illness, while managing chronic disease more effectively in order to reduce provider utilization and resource consumption. Providers will need to adopt a business model that provokes community engagement and empowers the patient to take more responsibility in their health. Providers and payors will need to remove interoperability barriers in terms of their patient data usage, population outreach, expanded technology use and risk transition in order to maintain profitability. To create a sustainable healthcare model that benefits the patient, provider and payor, a central focus must be placed on the innovative solutions and strategic partnerships necessary to keep communities healthy and reduce the need for extensive healthcare services.

ABOUT EPAM SYSTEMS

Since 1993, EPAM Systems, Inc. (NYSE: EPAM) has leveraged its software engineering expertise to become a leading global product development, digital platform engineering, and top digital and product design agency. Through its 'Engineering DNA' and innovative strategy, consulting, and design capabilities, EPAM works in collaboration with its customers to deliver next-gen solutions that turn complex business challenges into real business outcomes. EPAM's global teams serve customers in over 25 countries across North America, Europe, Asia and Australia. EPAM is a recognized market leader in multiple categories among top global independent research agencies and was one of only four technology companies to appear on Forbes 25 Fastest Growing Public Tech Companies list every year of publication since 2013.

Learn more at **http://www.epam.com/** and follow us on Twitter **@EPAMSYSTEMS** and **LinkedIn.**

P: 212-328-7227

E: sales@epam.com

<epam>