Managing Revenues in a Value-based Care Environment

Leveraging Care Management, Patient Identity, Patient Experience and Analytics to Improve Revenue Performance

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Greg Caressi and Koustav Chatterjee
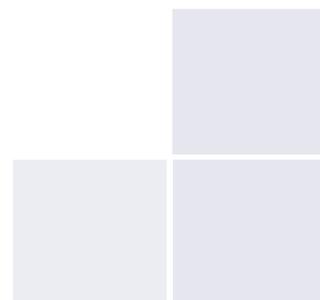
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INTRODUCTION

The United States of America spends more on healthcare than any other country in the world. This is due to the fact that, historically, the emphasis within the United States healthcare system has been on patient conditions that drive maximum per-capita cost. In most cases, the market has failed to successfully manage the entire patient population and indirectly stimulated incremental demand for healthcare services. The movement to value-based care reimbursement structures, rather than fee for service, is partly driven by the goal of aligning healthcare providers, insurers and patients around a shift away from episodic sickcare to more interactive information exchange and team interaction to manage post-acute care, which will allow for a more holistic approach to patient care.

Some of the critical factors that prompted a value-based and technology-driven patient care approach in the US are categorized below based on their relevance to key digital health spend categories.

1. **Revenue Cycle Management (RCM)**

    a. Lack of transparency and timely information sharing of both health and financial data among key stakeholders

    b. Providers suffer underpayments and lose profitability due to inefficient claims and contract management

    c. Enterprise-level financial performance is not benchmarked effectively

2. **Care Management**

    a. Chronic condition prevalence continues to drive major healthcare cost

    b. Inadequate post-acute follow-up results in an ongoing series of high-cost interventions with chronic disease patients, negatively impacting these individuals and system costs

3. **Identity Management**

    a. Patient data is not interoperable across the entire health system

    b. Duplicate patient records hinder providers' potential to ensure patient safety and negatively affect patients' clinical and financial outcomes

    c. Medical errors due to inaccurate clinical diagnosis and documentation result in higher occurrence of preventable readmissions, which drive additional cost of patient care

    d. Identifying at-risk patients and successful risk and condition management depend on accurate, unified patient records

4. **Patient Engagement/Experience**

    a. Lack of patient engagement in health decisions and outcomes

    b. Patients are not activated across the care continuum with both reactive and preventive healthcare messaging

    c. The patient payment experience remains poor due to low transparency of estimated cost of care

These ongoing market challenges have necessitated innovation in the way healthcare should be perceived, delivered and optimized. Regulations and payment incentives are being put in place to promote adoption of value-based healthcare services. As payment structures and care delivery models are changing, healthcare organizations need to focus IT strategy and investments on the items above to remain competitive. Investments in IT in each of these areas enable the stability of the organization and allow healthcare providers to focus on their core competency of improving care delivery. Payers are aligning IT to drive success in the shifting models of care delivery and reimbursement; provider organizations must do the same.

Throughout the many political discussions regarding federal government funding for healthcare, the Centers for Medicare and Medicaid Services (CMS) continues to be a leading driver of change in the alignment of payment incentives and care delivery. CMS has clearly emphasized the need to embrace accountable care and ensure cost containment at a patient level. In January 2017, CMS revealed the final rule for MACRA (The Medicare Access and CHIP Reauthorization Act) MIPS (Merit-based Incentive Payment System) payment track and indicated that all the eligible clinicians will be scored based on four key categories: Quality, Cost, Advancing Care Information, and Improvement Activities. Each category was further assigned a weight for assessment of likely payment adjustments, due from 2019. CMS was going to gradually increase the weight for the cost category from 0% to 30% from 2017 through 2021. However, a more recent version of the same rule, released in June 2017, increased the category's weight to 30% (highest weight possible for the cost category) for performance year 2019. CMS realized that providers continue to report higher clinical utilization at an enterprise level due to preventive readmissions and longer in-patient stay.

CMS Final Rule for MACRA	Quality	Cost	Advancing Care Information	Improvement Activities
Released in January 2017 (for Performance Year 2019)	60%	0%	25%	15%
Updated in June 2017 (for Performance Year 2019)	30%	30%	25%	15%

Source: CMS

On the in-patient side, CMS is poised to impose readmission-related penalties on 46% of US hospitals and reduce $564 million worth of federal funding in 2017. The trend of widespread slowdown in healthcare funding is expected to continue at least through 2019, as all major payers strive to impose new payment criteria in favor of improved patient services, which result in better clinical and financial outcomes for all stakeholders.

Healthcare Funding Outlook (2014-2019)

Medicare	Medicaid	Private Health Insurance
Total Medicare spending for 2014 to 2019 would be $455 billion lower than the 2010 ACA baseline forecast	Total Medicaid spending for 2014 to 2019 would be $1,050 billion lower than the 2010 ACA baseline forecast	Total PHI spending for 2014 to 2019 would be $664 billion lower than the 2010 ACA baseline forecast

Source: CMS

The transition toward value-based care arrangements is paving the way for new data-driven technologies that help providers demonstrate favorable impact on population health and ensure optimal revenue capture for patient services. Results-oriented clinical and financial IT solutions such as data analytics, care management, patient engagement, and revenue cycle management platforms are drawing executive attention from all ecosystem-level stakeholders: providers, payers, governments and investors. Given reimbursement adjustments being forced on healthcare providers, a focus on systematic changes and IT solutions that establish financial stability are required.

Note: The quotes included throughout this document are from healthcare providers speaking about alignment of RCM tools and capabilities with value-based care, and the current needs of healthcare provider organizations.

REVENUE CYCLE MANAGEMENT: ALIGNING RCM WITH THE SHIFTS DRIVING CHANGE IN PROVIDER ORGANIZATIONS

Introduction

The shift in population demographics coupled with the rise of risk or value-based reimbursement models is driving the need for better prediction and management of revenue cycles, especially for high and at-risk patient populations. The prevalence of legacy RCM IT systems, which do not optimally support the goal of building a broader but coordinated and enterprise-wide financial ecosystem, is restricting providers from achieving the desired results around healthcare cost and collection. Most US-based providers still grapple with low operating margins, resulting from poor accounts receivable (A/R) performance and high average denial volumes. Today, on average, providers spend $25 to rework each claim that is denied. The average number of claims processed by a US-based health plan that covers approximately 100 million lives is a whopping 1 billion; 10 to 20% of total claims are denied payment or require reprocessing due to inefficient claims management. These denied claims make up 90% of providers' total missed revenue opportunities, or a total of $19 billion.

Average number of claims, processed by a US based health plan that covers approximately 100 million lives.

1 Billion

10-20%

Average number of claims that are denied due to inefficient RCM processes.

During 2013-2014, Blue Cross, Cigna and MVM declined 7.6%, 21% and 15.5% claims respectively.

Average cost to rework each claim.

$25

90%

The denied claims' contribution towards providers' total missed revenue opportunities.

Source: Frost & Sullivan

Many health systems attribute this inefficiency to their suboptimal knowledge and implementation of value-based RCM pathways that require important investments in RCM IT. The need for efficient claims processing, which results in optimized collection of risk-based revenue, supports adoption of value-based financial management solutions. Most group practices that embrace alternative payment models also acknowledge the need to deploy progressive access management, scheduling, billing and analytics technology modules, capable of digitizing the entire RCM ecosystem. This view results from the growing adoption of payer contracts with specific provisions for efficient claims management, in addition to the need for integrating new capabilities that will meet the increasing financial responsibility of patients with coinsurance and large deductibles. Overall, the top unmet market needs driving adoption of next-generation RCM solutions among health systems in the US include:

- Comprehensive regulatory compliance and financial risk mitigation;

- Ability to collaborate with payers to customize revenue cycle workflows;

- Elimination of preventable operational expenses, attributed to claims processing;

- Need to accurately connect patient records and billing across various provider entities;

- Automated identification of hidden patterns and root causes of claims denial;

- Optimized collection of payments, rebates and incentives for patient services; and

- Real-time reporting of financial and operational performance at an enterprise level.

As a result, new growth opportunities involving external RCM solutions have gained precedence among many hospitals and physician practices. Most of them are willing to invest in advanced RCM capabilities that can streamline financial performance cost effectively by paving the way for seamless payer-provider communications pertaining to financial risk management. These end users are likely to prioritize procurement of RCM solutions from external IT vendors based on implementation evidence and cost/benefit benchmarks. Hence, going forward, they are expected to rely on RCM vendors that provide proven expertise in optimizing financial performance through comprehensive patient access, error-free claims preparation, automated billing workflows and robust RCM analytics. Vendors with solutions that can complement providers' incumbent value-based payment arrangements and RCM IT ecosystems are expected to thrive in this market.

Era of intuitive billing fueled by changes in financial transaction methodologies

Interoperable financial tools improve patient payment experience at point of service and reduce revenue leakages across the care continuum

Historically, most US-based providers collected 90% of the medical reimbursement requested from payers. Complicating provider accounts receivables is the increased adoption of co-payment or high-deductible health plans, which is compelling more patients to pay up to 33% of their medical bills out of pocket. Additionally, a significant number of patients from the uninsured population (28.2 million people younger than 65) are also receiving treatment from different health enterprises every year. They are opting for self-payment options, enrolling in free-care programs and crowd-sourcing funds. As more patients strive to cover their medical bills, hospitals and group practices remain vulnerable to lower collection of patient payments post care. Hospitals often fail to collect up to 65% of patient revenue due to ineffective management of their revenue cycles across the care continuum.

Hence, it is imperative that hospitals and group practices provide accurate financial information to patients at point of care and ensure optimal collection of patient revenue. Patient access is the common RCM terminology that facilitates this approach.

This segment of RCM plays a key role in helping patients opt for personalized payment options. Clinicians, care managers, and physicians from most advanced health enterprises strive to help patients make an informed financial decision based on automated assessment of the following factors across the care continuum:

- Social identity

- Medical history

- Financial coverage

- Insurance eligibility

- Potential cost of patient services

- Outstanding bad debt

Leading RCM IT vendors facilitate that approach comprehensively through implementation of an integrated, enterprise-level RCM platform, powered by a wide range of patient access solutions aimed at pursuing:

- Appointment management

- Financial coverage management

- Identity management

- Cost management

These vendors also ensure that every incoming patient is activated and stratified early, based on his unique financial orientation. When each patient is precisely identified and verified for various payment programs (self-pay, co-pay, Medicare FFS, Bundled Payment-Comprehensive Joint Replacement), providers expect to minimize denials and improve collection through higher pre-authorization and better follow-ups. Self-service tools that estimate potential cost of care also allow health systems to improve the patient payment experience and drive patient loyalty.

Data and analytics—creating predictive, data-driven organizations

Providers formulating or implementing value-based reimbursement roadmaps are in dire need of cross-functional RCM analytics capabilities that effectively stratify financial responsibility of each patient and prompt personalized intervention from providers and payers. Most of these best-performing health systems strive to optimize their revenue cycle by deploying integrated analytics solutions that analyze and visualize financial performance at an enterprise level by sourcing and normalizing patient information from disparate healthcare departments. Large providers, including integrated delivery networks (IDNs), are trying to deploy modular RCM analytics tools to facilitate bi-directional health information exchange and reporting within a disparate EHR ecosystem. Internal BI teams are also relying on these tools to generate actionable intelligence that supports provider leadership to pursue best corrective or preventive financial decisions. Although the vendor market is fragmented, only a few solutions can be seamlessly integrated into providers' underlying RCM IT workflows. The best tools can monitor billing discrepancy and A/R variation at a patient level.

Other important product propositions of RCM analytics include:

- EHR-integrated dashboards with separate views for physicians and executives

- Web-based access to financial reports pursing/benchmarking

    – Revenue gap assessment

    – Financial risk stratification at a patient level

    – Net patient revenue attributed to alternate payment models

    – Activity-based and specialty-specific costing

    – Self-pay collection to third-party collection ratio

    – Cumulative patient cost (inclusive of direct and indirect cost) per episode of care

- Role-based data security infrastructure

- Timely alerts and notification of financial policy changes

- Customized user interface that supports white-labeling

Top provider customers of these vendors are well equipped to automate attribution of patient-specific financial workflows, which result in improved patient satisfaction at an enterprise level.

Aligning RCM with care delivery transformation; ensuring the right tools are in place — claims, collections, patient access, etc.

Value-based reimbursement is projected to make up 25% of provider revenue by 2018 and 50% by 2020. As part of the ongoing market transition to value-based care, progressive health systems are enrolling more patients in various alternate payment programs. Although these financial arrangements could be detrimental to providers' profitability goals, a balanced approach powered by intuitive RCM tools that support sharing of personalized financial information can yield positive results for end users. This is due to the fact that patients often have inadequate knowledge about their financial responsibility and cause operational hindrance for providers. As a result, providers may fail to meet regulatory objectives tied to Physician Quality Reporting Systems (PQRS) reporting, Accountable Care Organization (ACO) quality performance measures or CMS Star Ratings.

Hence, it is important for vendors to render unique capabilities that allow providers to help patients with self-service portals, which can be accessed remotely via the internet and through various multimedia platforms, including mobile. These platforms can schedule appointments, stimulate enrollment in payment plans when appropriate, facilitate application for charity care, and crowd-source funds. Enabling these systems with real-time information from payers regarding eligibility and coverage limitations, along with co-pays, is needed to provide immediate price transparency to individual patients. Patients with a better knowledge of their financial liabilities provided through online tools before treatment are more likely to remain highly satisfied with their care and overall patient experience, improving provider loyalty. Providing this higher level of customer experience not only improves provider organization financial results, it also improves customer satisfaction and competitive positioning.

Automating processes to improve operational and financial results

The renewed effort to help patients recover faster, remain relatively healthier and avoid readmissions compelled providers to accelerate adoption of progressive RCM tools that can improve corporate profitability by ensuring operational efficiency and higher payer reimbursement. As clinical utilization is expected to decline at a patient level, more providers are turning to financial IT tools to optimize performance of their entire payment ecosystem. They strive to pave the way for automated patient access management, cost governance, claims preparation, denials management and collection management, so every dollar that is rightly claimed is properly collected. Today, these providers leverage an integrated suite of solutions that allow end users (care managers and RCM staff) to prepare error-free claims, improve contract management and expedite collection.

Revenue Maximization: Assessment of revenue cycle operations to highlight areas of potential cost savings and pursue key performance benchmarking

The gap between total claims and net collection is widening for many providers due to factors such as uncollectable debt, untimely filing, inefficient collection of self- or co-payments, and various other non-contractual adjustments. Hence, deployment of agile RCM tools that automate the process of claims and collection management may not fully guarantee improved financial performance, which is really contingent on providers' ability to auto-identify gaps in revenue cycle across the continuum of care. Leading RCM IT vendors help providers manage and monitor every aspect of a financial transaction centrally at a department level. This also includes the ability to streamline the process of governing payment history and reimbursement cycle for every patient. Business staff highly appreciates the opportunity to automate some of the manual processes involved with collection, as that enables them to focus on other collection priorities, which include interfacing with payers, third-party collection agencies and clearinghouses. On a broad level, tremendous cost competitiveness that a digitally integrated financial workflow proposes at a RCM process level is appearing as a key market driver for progressive RCM applications.

CMS Final Rule for MACRA	RCM Processes	Cost per e-Transaction (USD)
2.64	Claims submission	0.68
8.39	Eligibility and benefit verification	0.49
11.18	Prior authorization (claims pre-adjudication)	1.93
9.79	Claim status inquiry	1.85
3.46	Claim payment	0.78
6.19	Claim remittance advice	1.00
6.99	Claim attachments	1.27

Source: CAQH Report 2016

Call to Action

- Strategic deployment of a range of RCM IT (on-premise and cloud based) and service solutions is mandatory to address critical industry pain points pertaining to value-based reimbursement. On-premise IT products can be embraced to support secured and integrated financial management at an enterprise level, whereas cloud-based solutions can be leveraged to gain cost competitiveness and avoid vendor lock-in.

- RCM IT products must be configured with progressive Application Programming Interfaces (APIs) that enable comprehensive integration with third-party solutions that facilitate cross-continuum data exchange among ecosystem-level healthcare entities, including payers, providers, pharma companies and patients.

- Prioritized allocation of RCM technology tools and service staff based on each patient's financial risk score, payer association and payment preference can help providers pre-adjudicate claims, avoid denials and expedite collection.

- Certified business operation staff needs to be hired strategically and they must receive online training on the latest regulatory/payer guidelines specific to clinical documentation, coding and claims auditing. They must have access to integrated RCM collateral at point of service for easy subject-matter reference.

- RCM advisory services should be embraced with precision. Leading health systems leverage these services to formulate new VBC plans, reduce total cost of ownership of RCM IT, facilitate International Classification of Diseases-10 transition, and pursue compliance due diligence.

- Advanced analytics should deliver actionable insights from RCM systems to enable providers to identify and rapidly address issues that will streamline collections from both payers and patients.

- Self-service and price transparency capabilities, as well as proactive identification of patients needing alternative payment options, will enhance the patient experience, customer satisfaction and retention.

- Enabling organizational comparisons against industry benchmarks will highlight areas of success and those needing more attention.

CARE MANAGEMENT: IT'S MORE THAN POPULATION HEALTH

Introduction

Most US-based providers acknowledge that implementing a robust revenue cycle workflow is a needed component in a functional population health management (PHM) support structure. Clinical and financial outcomes of PHM programs can only be maximized by harnessing the potential of coordinated care. In a world where providers straddle fee-for-service and value-based care payments, managing episodes of care is important to success.

Provider executives confess that the desired level of leadership willingness, technological robustness and operational agility doesn't exist among most US provider organizations, who still struggle to overcome the first hurdle of PHM, i.e., normalizing disparate patient data from siloed care departments for informed decision making at point of service. Despite incumbent challenges, the US provider market is determined to align almost 50% of net patient revenue to value-based reimbursement. Hence, provider attention has quietly shifted to a more feasible and possibly more results-oriented, but definitely not mature, patient care approach that promotes automated care management.

Value-based care and episode management help the bottom line today

According to Frost & Sullivan, approximately 50% of all US-based providers demonstrate both willingness and ability to integrate the culture of value-based care within their core care delivery ecosystem today. Despite strong interest in value-based care initiatives, most US-based providers have not reported substantial growth in corporate revenue. Today, most providers pursue care coordination at a department level (e.g., emergency department, radiology, and primary care). These providers struggle to establish effective care coordination between in-patient, out-patient, and long-term care entities and thus fail to benchmark patient risk profiles (chronic or comorbid) in real time and involve caregivers to develop customized health plans that complement each patient's unique care needs across the care continuum.

"We need to identify early on who is covered under a bundled payment program. Often we don't know until halfway through the episode of care if the patient is under a bundled payment."

As a result, these providers suffer underpayments due to higher readmissions, report higher incremental costs due to preventable system utilization, and eventually lose profitability. Between 2012 and 2014, the average adjusted Medicare fee-for-service collection (as a percentage of total claims) declined from 97.75% to 95.93%. Last year, approximately 50% of all US hospitals had to sacrifice $500 million worth of reimbursement due to readmission-related inefficiencies. Therefore, providers and payers are in dire need of an IT-oriented business strategy that improves both the efficiency of care delivery and the financial health of the enterprise overall.

The need to improve how patients are tracked and coordinated across various care settings is emerging as one of the critical needs in an era of episodic care management, a scope which combines all patients being treated and all patients during a 30-day or 90-day post-discharge phase. Value-based payment arrangements encourage effective care coordination between acute care hospitals, physician practices and post-acute care providers, but implementation remains difficult and communication channels are not standardized.

A truly rewarding care management approach that improves clinical outcomes, secures regulatory incentives and augments patient satisfaction mandates patient-centric collaboration between all stakeholders. Providers should strive to empower each and every patient to pursue self-care and seek tailored support from anywhere through any device across the care continuum, but especially during post-acute care transitions, since those patients remain most vulnerable to readmissions in absence of personalized care coordination and patient engagement enablers from their providers.

Patients need to be connected with their full care team across any healthcare setting through a confluence of EHR-integrated online tools, patient portals, medical devices and interactive advisory programs. On the other hand, providers must be well equipped to facilitate seamless patient data exchange among multiple disparate health systems across the continuum to ensure effective monitoring, management and benchmarking of care plan adherence by patients.

Transitions in care: Automating information flows to better manage post-acute tracking of the patient

Most providers that are part of episodic payment programs struggle to optimize post-acute care management processes for at-risk patients, who would report better clinical outcomes if intuitively monitored and proactively activated with a more holistic patient care approach. Provider leaders are actively trying to connect with every patient across the care continuum and encourage seamless data interoperability among them to devise a single source of truth, based on each patient's clinical, financial and operational context.

"With knee and hip replacements, multiple hands are involved in post-acute care, and often we don't have enough data and interaction to manage these entities effectively."

Providers also trying to explore better ways to exchange information with post-acute care facilities that are rarely connected via aligned clinical systems, such as EHRs, that enable two-way data exchange. Today, most providers initiate care coordination for transiting patients manually. Implementing IT-driven solutions that are interoperable but cost effective can support better patient communications across primary, in-patient and long-term care facilities. Simple communication tools such as email exchanges that are automated and provide frequent updates can keep the various provider entities in the care continuum informed and stimulate needed interventions. These tools can also support holistic episodic care management, which is key to successfully meeting goals of better outcomes and lower costs.

For example, nearly all of the physician groups (99%) who are members of the Silver State ACO in Las Vegas are daily users of CareCertainty. CareCertainty gives them real-time visibility, daily usage reports, data on outreach success and no-show rates. When patients go to emergency departments across Las Vegas, their doctors are sent real-time alerts when patients are admitted and discharged.

Upon discharge, office staff at each practice receives real-time emails with secure delivery of discharge details, a Continuity of Care Document, and an online, client-designed checklist which provides details the user needs in order to contact the patient, schedule a follow-up visit, and days later confirm the visit occurred.

Throughout the continuum of care, the solution will use automated rules to generate notifications, such as admission or discharge, letting all providers know the status of the patient. Included with this communication is pertinent clinical information such as test results, medications prescribed and discharge instructions.

The beauty of this system is that it is a real-time, two-way communications channel. Anyone in the community can request answers to questions. The system itself will prompt providers to update the patient status, and then disseminate the latest information to the rest of the care coordination team. Triggers automatically alert the team to any changes in patient status, such as alterations to discharge date or adjustments to post-acute care needs. Based on this timely information, a provider may choose to follow up to learn more about what's going on with the patient.

This unique platform enables all stakeholders to be on the same page with virtually no training. The closed-loop nature of this solution means the email communications remain fully secure and compliant with privacy regulations, while enabling the diverse provider community to send and receive communications to help coordinate care and assure the care plan is followed.

Taking advantage of this type of care coordination ultimately leads to reduced patient readmissions and supports the management of post-acute costs.

Leveraging data and analytics to improve episode management

One of the key aspects of episodic care management is quality reporting for performance management. Providers realized that in order to tangibly benefit from enrolling in episodic care programs, they must highlight, assess and benchmark utilization trends (admission, ER visits, diagnostic and lab results, discharge, and payer responses) by patient mix. The value proposition, which is conceptually straight-forward, requires diligent attention from the C-suite, physicians and point-of-care staff. The analytics platform worthy of provider investment should be intuitive enough to source cross-continuum patient data specific to end user commands and deliver error-free clinical, financial and operational reports to help providers pursue activity-based costing for every episode of care. These reports should be EHR integrated, dashboard oriented, churned at near real time and supported by advanced visualization features for easy reference and comprehension of care gaps, care duplication, intervention standards and patient feedback.

Call to Action

- Providers must initiate customized intervention based on an individual patient's primary conditions and potential risk profile.

- With the use of a defined and agile intervention approach, patient care can be streamlined across the continuum. Ideally, communications linking providers across the care continuum can be automated and updated regularly, stimulating action when needed.

- Unnecessary utilization and readmission, which result in reduced payer reimbursement, can be averted. Providers should start to use risk stratification and care coordination tools to review patient conditions holistically, so that homogenous, risk-specific patient clusters are created across the continuum of care.

- The overarching objective should be to track, predict and manage the cost of patient care effectively.

- Ecosystem-level collaboration can pave the way for better patient outcomes. Those that are easy to implement will have the highest likelihood of success.

- Results-oriented business strategies that strike a balance between cost, time within workflows and results in episode management are poised to be most receptive by providers.

Contextual Workflow of a Best-in-Class Care Management Ecosystem
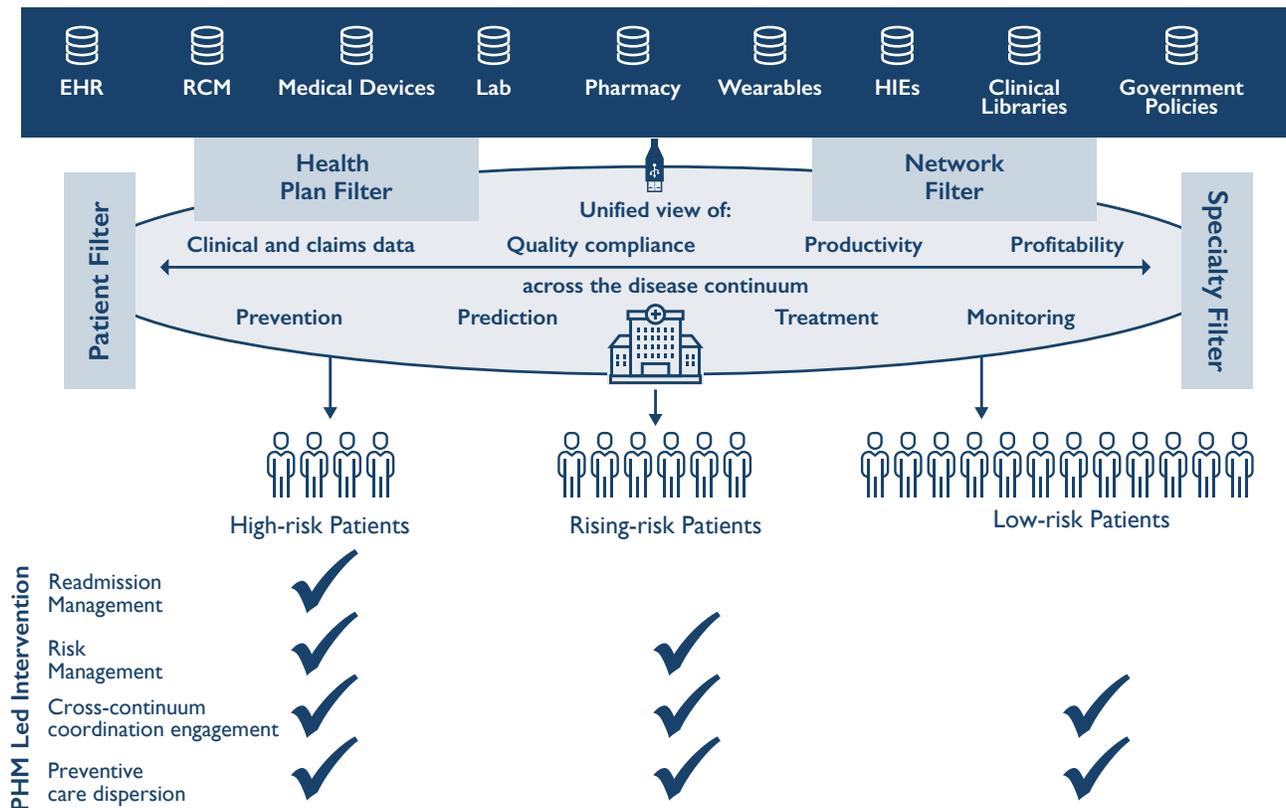
Source: Frost & Sullivan

IDENTITY MANAGEMENT: THE KEY TO DELIVERING THE RIGHT INFORMATION TO THE RIGHT PERSON AT THE RIGHT TIME

Introduction

Identity management is becoming increasingly important for healthcare enterprises that try to reduce security and compliance risk amid rapid growth of market consolidation and increasing alliance with disparate health IT systems for effective care coordination. According to the US National Institutes of Health,

"195,000 deaths occur each year because of medical errors, with 10 of 17 being the result of identity errors or wrong patient errors."

Since average patient traffic in US-based health systems remains strong due to the prevalence of chronic diseases, an increasing volume of patient data is added into healthcare providers' data warehouses every day. A recent study by RAND Corporation revealed that somewhere between 8 to 16% of patient records generated by US providers can be defined as duplicate. More importantly, for each duplicate record, a mid-size health system absorbs an additional cost of $96.

Standard health IT products (electronic health records, health information exchanges, or analytics systems) often fail to protect the business and health interest of providers and patients, respectively, as they typically identify and highlight only 10% of total duplicate records. In many cases patients suffer negative clinical and financial outcomes when diagnosed and treated based on decisions made using duplicate or inaccurate medical records. These patients often undergo repeat tests or experience delayed treatment, which results in longer in-patient stay or readmission.

It's critical for providers to embrace a robust identity management infrastructure that ensures that patient data is accurately stored and safely accessed by designated users, which include care team members, family members and the patient. Providers can uniquely represent patients across the entire network, identify all relevant stakeholders, authenticate personalized clinical intervention and prioritize care team attribution. Healthcare providers can clearly benefit from the ability to collate patient records within their own organization, but systems that allow them to collate patient records across multiple provider organizations represent a difficult challenge.

These systems don't support the process of disparate data capture across the patient journey, which requires adoption of a standard patient matching algorithm (which really doesn't exist). As a result, the Office of the National Coordinator for Health Information Technology (ONC) recently launched the "patient matching algorithm challenge" worth $75,000 (six winners will be eligible for the prize money), and encouraged healthcare IT developers to build new algorithms that can potentially help providers benchmark patient evidence by capturing accurate medical records from multiple internal and external systems via open API (application programming interface), blockchain or Blue Button. Steven Posnack, Director of ONC, said:

"The ability to complete patient matching efficiently, accurately, and at scale has long been identified as a key element of the nation's health IT infrastructure. Patient matching is almost universally needed to enable the interoperability of health data for all kinds of purposes… Patient matching also requires careful consideration with respect to its effect on patient safety and administrative costs."

ONC has clearly stated the need to retain patients' medical records via a master patient index. It is expected that the rule will be broadly applied in most US states and providers are going to drive transformational investment in favor of agile master patient indexes, carrying longitudinal patient records.

Data integration gap today is in connecting an individual's patient data to support interoperability across and within healthcare organizations

In order to build, deploy and optimize their identity management infrastructure, providers must ensure that their underlying technology platforms can build a robust medical database that contains a unique longitudinal record for each registered patient within a cross-continuum healthcare setting. However, the lack of IT infrastructure support to foster data interoperability across various healthcare enterprises is the norm. The lack of unique patient identifiers that connect data across different healthcare organizations cannot be overlooked as a key cause (and potential solution) to this problem. Medical context management for transitioning patients has remained one of the most progressive yet least mature service capabilities in the value-based healthcare IT market today.

Cultural due diligence, aimed at securing stakeholder buy-in to invest in identity management solutions that foster personalized and secure clinical intervention, should be embraced comprehensively. Every stakeholder, including and especially patients and payers, needs to be educated on the key value benefits of unique patient identifiers, which include the ability to:

- Protect, govern and match patient data (e.g., admission and discharge data) within a multidisciplinary care network;

- Manage patient context on behalf of care providers across the continuum;

- Automate attribution of care team members and assign personalized responsibilities based on each patent's unique clinical risk profiles;

- Permit patient data access to key opinion leaders;

- Enable a functional, patient-centered medical home model; and

- Identify/prevent duplicate medical records.

Integration of transactional and workflow data to develop unique and safe patient identifier

Although some providers have implemented hospital- and practice-centric patient identifiers (via a master patient index), they are restricted from developing a network-level master patient index (MPI) that connects MPIs across different practices, hospital departments, post-acute care facilities and payer groups. This is because these providers, in most cases, utilize multiple disparate EHRs that do not interface well with each other and often carry inaccurate patient records.

Best-in-class providers are keen to opt for vendor-neutral and cross-enterprise master patient index (XMPI) solutions. These solutions are ideal for managing patient identity and consent within and outside of any large healthcare network that interfaces with multiple disparate clinical workflows.

External organizations may be better positioned to develop systems that create unique patient identifiers needed to link patient information across the care continuum, based on a variety of data sources that are tied to existing unique identification systems (such as in the financial services sector). Greg Caressi, Senior Vice President, Frost & Sullivan's Transformational Heath practice, said, *"A systematic approach involving agencies external to the government and to healthcare provider organizations is the most likely near-term solution to this challenge."* Clearinghouses that could serve this function, perhaps based on data and infrastructure similar to financial services industry models, have been discussed and could be formalized through legislative mandate in the near future. Provider organizations should embrace the capabilities that such a system could bring and begin to consider how to draw benefits from this type of system

to address their internal patient identification challenges as well as the potential benefits in care coordination and population health management efforts.

Improved analytics (and insights) based on integrated patient data

Analytics are leveraged extensively to consolidate patient data for the purpose of evidence-based clinical decision making. Thus, an agile analytics platform that sources and normalizes clinical and financial context for each incoming or outgoing patient is immensely valuable. Having a consolidated patient view, enabled by a single patient identifier, creates the ability to perform analytics based on a unified data set, increasing the volume of data inputs to be analyzed and resulting in better analytical insights. Other industries have addressed this issue through creating an infrastructure for unique identifiers for consumer financial data and credit reporting, for example.

Call to Action

- The medication error rate currently ranges between 50% to 60% for providers exchanging clinical information across a delivery network. Medication errors due to inaccurate records result in preventable adverse events (e.g., hospital-acquired infections and comorbidities). Healthcare providers need to improve efficacy of their incumbent care management programs via a master patient index that accurately identifies patients across the continuum of care and allows caregivers to allocate the best possible workflows to at-risk and chronic patients. Data-driven treatment marks precision care and yields tangible values to health systems aspiring to improve operational efficiency, prevent readmission, and expedite patient discharge.

- Unique patient identifiers are crucial to the success of care coordination and population health management efforts. Identifying and leveraging the capability to link patient data across different provider entities through a system of unique patient identifiers that is not enterprise specific (but can be integrated with enterprise-specific data) will be a key differentiator for high-performing healthcare organizations in the world of value-based care.

- Frost & Sullivan expects new approaches to patient identifiers (EHR-integrated and remotely accessible) across health systems to come to the fore and be adopted—with the blessing of government authorities—in the not-distant future. Organizations should be considering approaches they can take today to create unique patient identifiers that support stronger analytics.

PATIENT ENGAGEMENT/EXPERIENCE: AN OPPORTUNITY TO EMPOWER THE PATIENT AND CONSUMER

Introduction

Reactive consumer outreach programs and irregular appointment scheduling for a defined patient population have a negative impact on preventable hospital admissions. Appointment no-shows due to lack of targeted follow-ups and non-availability of comprehensive treatment or coverage options at the point of care have negative impacts on health outcomes and accounts receivable (A/R) durations for individual patients. Additionally, patients transitioning to home health or long-term care facilities seldom receive periodic care instructions with regard to comorbidities, medications, needed exercise regimens and psychological consultations. As a result, CMS's final rule for MACRA emphasized the need for adoption of robust patient engagement programs and outlined specific incentive guidelines for leading healthcare enterprises that achieve better connectivity and facilitate cross-continuum patient engagement. This will enable them to reduce operational cost, drive positive patient outcomes, and improve patient experience.

Patient segmentation and customization—proactively improving results and relationships

Health systems that have successfully stratified at-risk patients and activated them with patient engagement tools and personalized wellness content often report improved enterprise performance across various clinical and financial metrics. Best-in-class providers always ensure that patient engagement remains a fundamental component of their core care delivery ecosystem and not a temporary strategy extension. They acknowledge that the convergence of analytics, risk stratification and patient engagement tools must support comprehensive assessment of multiple patient factors—including clinical, financial, behavioral, and social factors—to assign an evidence-based risk score to each patient during and post care. Risk-adjusted patient populations are grouped automatically and treated as a condition-specific cohort to support tailored outreach by providers. In this way providers can embrace a new culture of precision care.

Data sharing and data transparency—positive impact on patient experience and revenue flow

Next-generation patient engagement solutions are results oriented and inclusive of IT solutions that promote seamless data accessibility for patients and their care providers. A shift from paper-based or manual patient communication to cross-continuum patient engagement supported by appointment management enablers, virtual screening solutions and self-service tools is underway. Technology (patient portals plus online tools) coupled with data-driven member relationship management programs will represent the new patient engagement ecosystem that can expedite recovery, improve payment experience and avoid preventive readmissions for patients.

Data sharing and data transparency extend into payment and financial systems as well. Providing individual patients with clear, real-time information regarding coverage, required out-of-pocket payments and possible payment options based on their individual financial situation will improve both participation in needed healthcare engagement and patient satisfaction. When individuals can obtain clear and individualized information that puts them at ease in addressing healthcare payment options, they are more likely to follow through with needed appointments, plan to meet financial obligations, and feel empowered in their patient (or customer) experience.

Improving the patient portal (and increasing its value and use) by inclusion of patient-specific financial information

Most patient portals in use today fail to incorporate patient-specific financial information from various payer organizations, which then prohibits providers from effectively pre-adjudicating claims to optimize collection of payments. As out-of-pocket expenditures for healthcare services continue to rise, due to increased enrollment in high-deductible health plans, providers aspire to invest in self-service tools integrated with their patient portal to enable them to collect payments from patients before planned care is rendered, at point of service, immediately after care is delivered and also across the care continuum. In this way, providers maximize collection of both upfront payments and outstanding patient balances, and improve profitability by normalizing the risk of non-payments. Best-in-class patient portals, which are multimedia enabled and mobile friendly, also incorporate various other technology features that help patients to:

- Schedule appointments;

- Estimate the potential cost of care;

- Prepare, consolidate and share patient billing statements;

- Access safe payment gateways for risk-free financial transactions with providers; and

- Crowd-source funds.

Patient-provider encounter mapping to define social determinants of population health and customize provider outreach strategies

The patient's behavioral context often determines their receptivity to embrace a definite patient engagement approach. The behavioral profile of each patient is often considered to adjust patient engagement interventions and prioritize delivery mechanisms. Providers, by carefully examining each patient's activation, motivation and social support network, avoid wasting valuable patient engagement resources on non-interested patient population and embrace specific outreach strategies that complement each patient's unique expectation with regards to devices, content, and timing.

"Analytics that help us select patients who will respond to engagement strategies and de-select patients who won't respond are needed. Not everyone responds to engagement in the same way."

A suite of online tools that enlighten patients with understandable procedural knowledge and encourage them to pose questions related to likely workflows can be introduced to define the social determinants of population health. Patient interactions with these tools should be tracked and addressed in real time by designated providers. To achieve best results, these tools are often integrated with patient portals that are commonly used today. These interactive tools can highlight the potential risks and benefits of every procedure and trigger informed healthcare decisions that drive positive outcomes.

The challenge is drawing on accurate and actionable information that creates inputs regarding individual social determinants of health, and having in place a sufficient analytics capability to deliver actionable insights from this data. This challenge has been addressed in industries external to healthcare; vendors with specific healthcare experience that implement solutions leveraging data from outside the healthcare system are often in the forefront of delivering robust and actionable insights to healthcare providers.

"Financial services organizations have massive CRMs that enable personalized interaction. How can we enable our patient interactions to improve the customer experience?"

Vendors with background data from the financial services sector are beginning to deliver data and solutions to healthcare providers that assist in identifying relevant social determinants of health, along with data that will assist in financial planning for patient payments. This information can also be leveraged via a patient portal to identify those individuals that may benefit from interaction regarding payment options ahead of a planned health encounter, especially those events requiring significant co-payment. Providing payment options that are relevant to an individual's financial condition is another way that patient data can be leveraged to create an individual engagement strategy that is beneficial to the person and the provider organization, and creates a better customer experience.

Patient-specific financial risk assessment for providers embracing value-based payment models (bundled payment and other alternate payment models)

Increasingly, bundled payment and other alternative payment models require providers to consider the total cost of an episode of care. While many provider organizations are investing in population health management tools, more valuable during this transition period are tools that can help with episode management. Making tools available to patients to help manage total cost of care can assist with episode cost management. Price transparency tools that make patients aware of the often highly varied costs for imaging procedures and other activities included in bundled payments can help reduce system costs as well.

"Patients need a consumer-friendly tool to understand scheduled services and benefits, what their responsibility will be, and understand options to meet their co-pay with less stress."

These same tools can be leveraged to interface with patients to estimate their individual financial commitments and determine in advance the best payment model and structure, based on the expected cost of care, with price transparency regarding the total patient payment required. Hence, it is imperative to provide patient interface tools that enable price transparency, calculate patient co-pays and progress toward meeting deductible amounts, and customize payment options based on individual financial data. Providers and patients will benefit from the capability to stratify patients' financial risk through assessments of patient data and actively engage in conversations between patients and their care providers.

Mass customization through data, automation and an integrated A/R platform

Medical device companies are rolling out wearable integrated patient engagement software that capture and analyze patients' vital signs and transfer results to designated care providers for timely intervention and personalized clinical advice. Hospitals and health systems are actively trying to collaborate with these vendors to promote self-care, facilitate preventive screening, allow appointment management, and power remote monitoring. The scope of patient engagement is poised to expand from acute care IT ecosystems to the community IT ecosystems that collectively activate every patient (healthy, at risk or ailing), irrespective of their clinical risk profiles, healthcare coverage, and positions within the care continuum.

As providers implement better engagement platforms to interface with individuals to support and activate patients in both clinical and financial interactions, customer satisfaction levels rise, and health and financial outcomes improve, for both the person and the healthcare organization. As in clinical analytics, payment interactions are best enabled by tools that personalize options based on financial data. Implementing a RCM infrastructure that individualizes interactions based on personal financial data assessments will support the overall long-term engagement of that patient, person, and customer in their ongoing relationship with the healthcare provider organization. Given that the highest cost patients are those that will be forced to engage most often in a payment relationship with the provider, it is important that provider organizations recognize the need for personalized financial engagement capabilities and tools as an important part of their patient engagement strategy. Patients who have positive ongoing experiences with the healthcare provider on all fronts are more likely to remain actively engaged, to the benefit of the shared goals of the patient and provider.

Call to Action

- Support the entire community population (healthy, chronic, and transiting patient population) across the disease continuum with multimedia-enabled patient engagement programs, personalized to each patient's unique expectation and preference. Include financial tools to enable patients to identify and resolve issues related to individual financial commitments.

- Deploy solutions that exert advanced capabilities beyond the jurisdiction of common regulatory objectives and engage high-risk and at-risk patients early.

- Emphasize developing provider-specific mobile patient engagement solutions for different episodes of care.

- A suite of online tools that enlighten patients with robust procedural knowledge and encourage them to pose questions related to likely workflows can be deployed.

- Interactive tools that highlight the potential risks and benefits of every procedure and trigger informed healthcare decisions need to be adopted.

- Patients in need of preventive healthcare examinations can be targeted through automated phone calls.

- Every call can be tailored based on the unique characteristic of each transiting patient. The technology facilitating automated patient calls should be auto-scalable, and providers should not experience care gaps with expanding post-acute care patient population.

- Closely work with leading commercial and state-level public payers to improve the patient payment experience (irrespective of your ability/intention to empower financial transactions).

- Provide tools, content, and coaching to patients and their family members for the enablement of self-care and avoidance of preventative screening interventions.

CONCLUSION

Addressing the holy grail of healthcare: How to achieve ROI from the IT- enabled, value-based care strategy

Value-based, care-related return on investment (ROI) is fairly undefined today, allowing large provider organizations to perceive this as a key performance indicator (KPI), along with data interoperability and EHR compatibility, during supplier shortlisting exercises. These providers acknowledge that benchmarking of enterprise financial performance against the industry is the best way to devise realistic profitability goals. Key financial KPIs that every progressive healthcare IT vendor should track on behalf of its customers include:

Hospitals	Physician Practices
• Days in Total Discharged Not Final Billed • Net Days in Accounts Receivable • Aged A/R as a % of Billed A/R • Cash Collection as a % of Adjusted Net Patient Service Revenue • Bad Debt as % of Total Debt • Charity Care as % of Total Medical Revenue • Uninsured Discount • Total Uncompensated Care • Cost to Collect • Cost to Collect by Functional Area • Case Mix Index	• Primary Physician Practice Operating Margin Ratio • Specialty Physician Practice Operating Margin Ratio • Net Income/Loss Per Primary Full-time Employee (FTE) Physician • Net Income/Loss Per Specialty FTE Physician • Total Primary Physician Compensation as a Percentage of Net Revenue • Total Specialty Physician Compensation as a Percentage of Net Revenue • Practice Net Days in A/R • Practice Cash Collection Percentage • Point-of-service (POS) Collection Rate • Professional Services Denial Percentage

Source: Atos, Frost & Sullivan

According to the current industry standards, providers must strive to adhere to the following performance targets to realize tangible returns in the form of regulatory incentive and healthcare reimbursements.

Overarching Performance Metrics	Type of Performance Metrics	Target (best-in-class performance)	Point of Organizational Risk (RCM vendor support needed)
Accountable Receivable	Efficiency	32+/- Days	50 Days
Cost to Collect	Cost Containment	<=3% of reimbursement	>5% of reimbursement
Cash as % of Net Revenue	Effectiveness	100%	<=95%
Net Collection Percentage	Effectiveness	96%	<85%
Bad Debt Percentage	Effectiveness	<4%	>5%
Clean Claim Rate (First Pass)	Efficiency	>90%	<=90%
CMS Rating	Effectiveness	4+ Stars	1-2 Stars

Call to Action

The transition toward value-based care is accelerating the need for new data-driven technologies that help providers demonstrate a favorable impact on population health. Results-oriented healthcare IT solutions, such as data analytics, revenue cycle management, care coordination, patient engagement, and quality reporting platforms are drawing executive attention from all ecosystem-level participants.

However, health systems that are deeply entrenched (or expanding entry) into alternate payment ecosystems must prioritize their near-term investment in favor of highly agile and scalable RCM platforms that can improve financial performance at an enterprise level by driving superior care coordination, patient engagement, and population health management for payers and providers from a central, online platform. EHR compatibility with RCM remains a critical capability for many IDNs that currently utilize multiple EHR systems within their network. Hence, vendor-agnostic third-party RCM solution providers are gaining attention from provider leaders.

"Epic can import a segmentation score from Experian, which triggers multiple activities by different parts of our organization – clinical, financial and care management staff."

In the transition to value-based care, providers are developing an IT strategy to enable clinicians and patients with data, analytics and engagement tools that provide individualized care plans through scalable infrastructure that considers and assesses individual patient data. Providers also need an IT strategy that enables their organization and their patients to gain from engagement with tools that analyze individual financial data and develop payment interactions that reduce the burden on the customer and the healthcare provider. Episode management, patient engagement, and the use of social and economic data to identify and stratify risk and personalize interactions are some of the overlapping similarities of the clinical and financial IT solutions.

Given the delicate financial condition in which most provider organizations exist today, it is equally important to recognize the need for improved data (with a focus on data integration and data quality), analytics, patient engagement, identity management and identity protection to remain competitive and financially stable, so they can meet their shared goals of improved outcomes, improved patient experience and reduced cost of care.

NEXT STEPS ⊙

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