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## Patient Relationship Management: A CRM Approach to Patient Care

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### Abstract

In the business world, customer relationship management is used to retain customer loyalty in order to increase revenue. Healthcare organizations can build the same kind of relationship with patients, and it can also offer more tangible benefits. The first benefit is by using the same hospital a patient's treatment history should be relatively well known by the organization. Oftentimes, different hospitals use different patient information systems which are not always compatible with each other. If a patient keeps changing the hospital, his or her medical record can be scattered around various sites. Ideally, if the patient is treated by the same physician in every visit, that physician will get more familiar with the patient, which could improve treatment. The most tangible benefit, however, is time. If the patient goes to the same physician every time, there is no need for long check-ups at the beginning of each visit.

**Keywords:** CRM; Patient Communication; Patient Satisfaction; Patient Reminder; Compliance; Counseling; Patient Motivation; Patient Participation, Patient Engagement.

**Abbreviations:** Hospital Information System (HIS); Customer Relationship Management (CRM); Patient Relationship Management (PRM); Magnetic resonance imaging (MRI); Medicare Payment Advisory Commission (MedPAC); Value-Based Purchasing (VBP)

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### Introduction

A PRM application also can provide better care for patients by allowing hospitals a better understanding of patients' needs and want through improved communication via follow-up systems. Understanding how the treatment has worked is crucial for physicians. By letting the physicians know, how satisfied the patients are, physicians can have a better understanding on how the treatments and operations they perform are working. Thus, having better patient relationships and better patient loyalty benefits both the healthcare organization and the patient.

Today, patients can easily find instructions for their treatment from the Web. When hospitals provide real-time information and disseminate it to their current and potential patients it will help them to stay in touch with people as well as compete with other healthcare organizations for customers. Hospital management strategies should consider comprehensive, efficient hospital information systems which support a shift of focus to patients. With the idea of PRM, hospitals may be able to move on towards more customer-centric operations than before.

### Key Elements of PRM For Hospitals

- Collection of data related to personal details of the patients, frequency of visits of the patients, the doctor he is referring to, admission of patients, medical history, discharges, attendants, details of physicians etc. from across the enterprise, recording it and maintaining a database or the Master File.
- Analyzing the data and identifying the potential profitable customers, formulating the best

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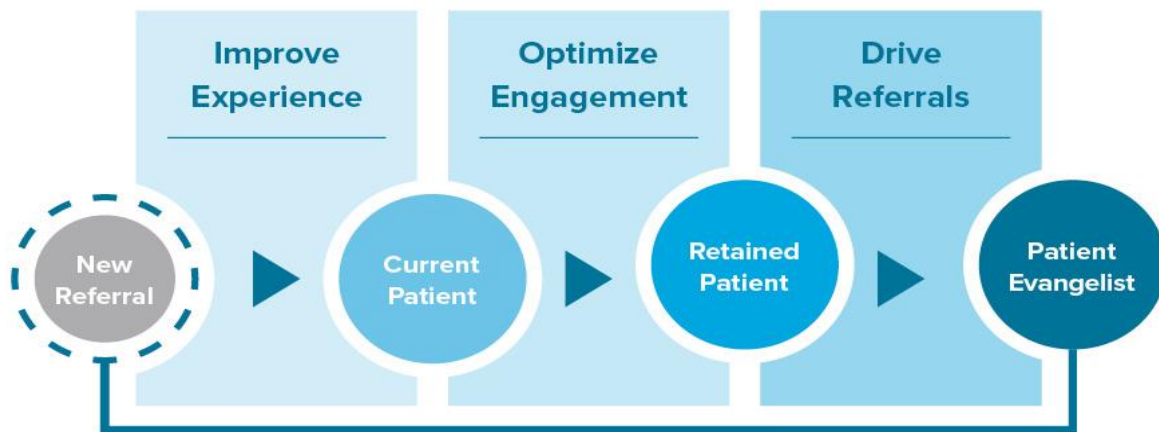
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- marketing opportunities for them and finding the best medium to communicate with the identified targets.
- Developing marketing campaigns for turning the likely to be customers into profitable customers.
- Tracking the effectiveness and return on investment from these campaigns [1].

## Patient Relationship Management



**Figure 1. Patient loyalty program 200** (Source: StriveLabs). To improve clinical outcomes, increase patient satisfaction and incur profit revenue, engaging patients in their own healthcare is critical. The US government is encouraging the use of Electronic Health Records (EHRs) via HealthIT.gov and promoting incentives to doctors who use EHRs meaningfully to reduce medical errors and improve the quality of care. CROs and independent service providers are designing educative websites that can be accessed via mobiles or the internet for educating patients on diseases. A few examples of available websites and tools are (1) Agency for Health Research and Quality maintained by US Department of Health and Human Services (2) ClinicalResearch.com (3) WELVU – Mobile First, an iPad- and iPhone-based educative tool providing medical illustration, quality scores, and health outcomes to engage patients (4) Krames patient education from StayWell (5) ExitCareOnScreen™ video solutions for patient education. The retention of patients in a trial is the key to the success of the overall project. Acurian, a service provider for recruitment and retention services uses platforms such as Facebook and Myspace for patient referrals and retention strategies. The easier it is to be compliant to study schedule, the better is the retention till the end. Dose compliance tracking tools like MediGuard™ enable reminders to be set up for dose intake (Sharma NS. Patient centric approach for clinical trials: Current trend and new opportunities. *Perspect Clin Res.* 2015;6(3):134-8).

### Application of PRM

PRM is not a technology but rather a vision realized through technology; technology grants the ability to achieve more cohesion between the disparate parts of the healthcare system, which in turn improves both clinical outcomes and patient satisfaction". PRM can

- Help prevent additional illness. With a 360-degree view of the patient, physicians can more easily identify relationships between current symptoms and future health concerns.
- Improve the quality and consistency of care. Automated processes can be created to ensure critical safety procedures are followed, and that

the organization is in compliance with privacy and other regulatory policies.

- Speed routine processes, such as admissions, referrals, and discharges. By analyzing the performance of routine processes over time, improvements can be made that eliminate unnecessary steps and increase patient satisfaction.
- Eliminate time wasted accessing information. By electronically storing indexed documents, such as treatment plans, symptom-and-diagnoses relationships, and reference articles, less time is spent searching for information needed to deliver quality care.

- Automate proactive communications. By viewing patient data sorted by certain characteristics, targeted proactive communications can easily be sent. For example, mailings to diabetic patients can inform them of new information, treatment options, or upcoming educational offerings.
- Reduce the number of missed appointments. Tasks can easily be set up to streamline appointment reminder calls. Automated processes can be put in place for follow-up and rescheduling should appointments be missed [2].

#### Benefits of PRM in the Health Care Industry

- Patient PRM applications can speed routine processes, such as admissions, referrals, and discharges by analyzing the performance of routine processes over time. Improvements can be made to eliminate unnecessary steps and increase patient satisfaction.
- Furthermore, it can help prevent additional illness by physicians taking thorough examination of the patients all times to enable them easily identify relationships between current symptoms and future health concerns.
- Moreover, PRM application can eliminate time wasted accessing information by electronically storing indexed documents, such as treatment plans, symptom-and diagnoses relationships, and reference articles, less time is spent searching for information needed to deliver quality care.
- The PRM can automate proactive communications by viewing patient data sorted by certain characteristics, targeted proactive communications that can easily be sent. For example, mailings to diabetic patients can inform them of new information, treatment options, or upcoming educational offerings.
- PRM can also contribute to improve the quality and consistency of care by creating automated processes to ensure critical safety procedures are followed, and that the organization complies with privacy and other regulatory policies.
- Finally, yet importantly is that PRM will reduce the number of missed appointments. Tasks can easily be set up to streamline appointment reminder calls. By putting automated processes in place for follow-up and rescheduling should appointments be missed [3].

#### PRM versus CRM in Private and Public Health Care

In brief, while CRM and PRM involve similar approaches, "the goal of CRM is ultimately to increase consumer spending. Conversely, PRM strives to give patients the information they need to make better healthcare choices, which will ultimately save them and the system money". PRM also requires added consideration for handling complex data and the need to enforce airtight security and the appropriate use of patient data. Despite the differences, commonalities between CRM and PRM enable stronger relationships that benefit from: greater anticipation of customer needs and wants, improved communication channels, timely and credible information, and the capture of tacit knowledge in essence knowing people better without wasting their time. However, the marketing tactics of commercial persuasion and manufactured demand do not directly apply in healthcare; therefore, the best 'marketing' goal that a private for-profit healthcare organization can hope for in "the migration of CRM to PRM is the natural evolution of building the perception. When the need arises, the promoted physician practice or hospital is there to help you." Nevertheless, 'perception management' also applies to public PRM in efforts to nurture relationships with a patient/provider audience receptive to preventive, cost-saving interventions that stave off the need for expensive acute care services. Responsibility for the public purse creates an impetus for seeking these efficiencies through this form of Citizen Relationship Management—the CRM equivalent in the public realm [4, 5].

#### Implementation of CRM in Health Care

CRM system needs a daily accumulation of data from both in-patient and outpatient departments' terminals through multi-media platform and integration with other ancillary technical systems enable an effective CRM system to be completed after the following work is done well.

- Integration of CRM system with HIS
- Integration of CRM with Hospital Web Platform
- Integration of CRM with Call Centers
- Integration of CRM with short-message gateway
- Establishment of Customer Responding Mechanism and Database [6,7]

#### Exhibit 1. Establishment of Customer Responding Mechanism [8-10], [19], [24-28]

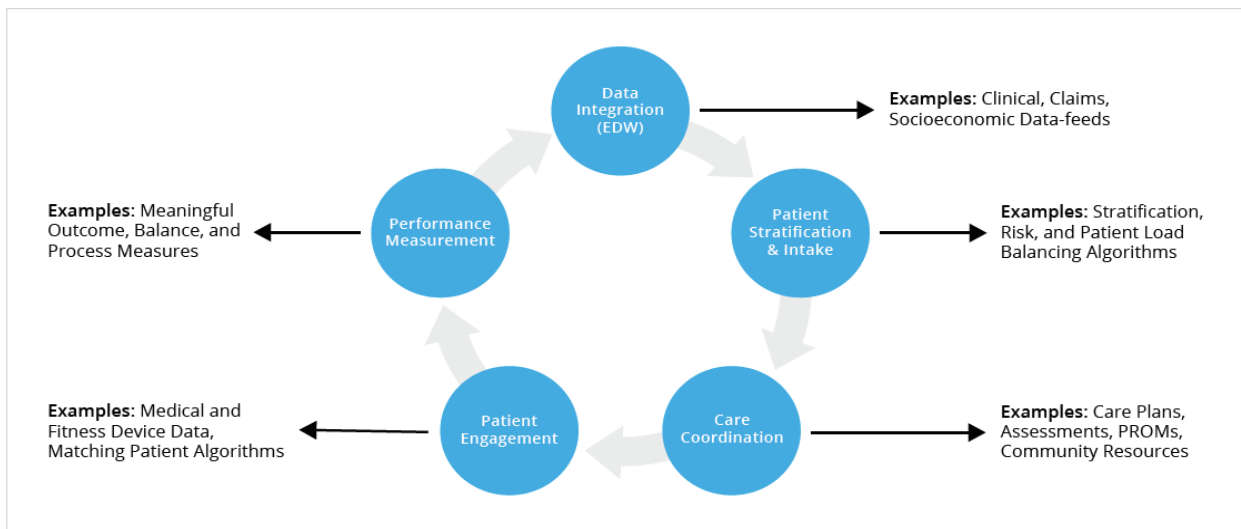
- PRM should analyze the performance of routine processes over time (such as admissions, discharges, transfers, and referrals), improvements can be made to eliminate unnecessary steps and increase patient satisfaction. There are a number of promising interventions which may improve the effectiveness and efficiency of outpatient services, including making it easier for primary care clinicians and specialists to discuss patients by email or phone.

<ul style="list-style-type: none"> <li>▪ If patients have a better understanding of their role in ensuring good health, they can make better choices concerning their health and their lifestyle. That has the potential to have a significant impact on the health system. Health literacy is primarily the responsibility of health systems, given that it is the health system that determines the parameters of health interaction, including the mode(s) of information provided, attitudes to the provision of information, and definitions of concepts such as sound health decision making and compliance.</li> </ul>
<ul style="list-style-type: none"> <li>▪ The customized workflows can be developed to automate care coordination activities between provider institution (E.g., Hospital, Clinic, Home Health,), which can help improve patient outcomes while increasing operational efficiency and reducing costs. For example, the age old Donabedian Model adaptation by identifying essential CC structures (inputs) and process factors (activities) with the potential to improve patient and staff satisfaction as well as clinical and financial outcomes. The following domains can be selected for inclusion in the measures: (1) Healthcare Home; (2) Plan of Care; (3) Self-Management; (4) Communication; (5) Patient Assessment and Support; and (6) Care Transitions.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Clinicians can flag patients with specific chronic illnesses and automate targeted proactive communications to inform them of upcoming educational offerings and remind them of ways to manage their illnesses. Collaborative systems and processes will have to be able to accommodate new providers that emerge over time, such as home health organizations and disease-management and wellness companies</li> </ul>
<ul style="list-style-type: none"> <li>▪ The healthcare administrators will also have to provide a secure framework that protects patient privacy and consumer rights.</li> </ul>
<p><b>Outcome:</b> <i>In this vision, an informed patient will be able to make sound, cost-effective choices, working with a global healthcare community that can provide personalized, quality care. These choices, and the solid foundation of shared information provided by collaborative abilities, will help the entire system increase both efficiency and effectiveness</i></p>

**PRM Programs in Hospital Setting**

A Customer Relationship Program for patients in a hospital can be broadly classified into two factions i.e. In Patient CRM and Out Patient CRM. *In Patient CRM* includes all those customer care activities when a person gets treatment in the hospital and avail the facilities rendered by the hospitals. Here the customers can be the

patient and the attendants to the patient i.e. who accompanies or visit the admitted patients. *Out Patient CRM* consists of those customer care activities when the person is discharged from the hospital. It includes maintenance of database of each and every patient and thereafter, maintaining regular interaction with the patient.



**Figure 2. Components of a well-organized care management program.**

(Source: Chaguturu S. Care Management: A Critical Component of Effective Population Health Management. Web Health Catalyst December 9, 2016) Many healthcare organizations have leveraged information from their Health Catalyst Analytics Platform, including their Late-Binding™ Data Warehouse (EDW) and broad suite of analytics applications, to support the identification of specific

patient cohorts to monitor the impact of care management interventions on individual and population health outcomes. The programs featured below focus on different patient populations, but they share major commonalities. The themes of aggregating data to identify and risk stratify potential patients, focusing on care coordination functions, developing processes to improve patient engagement, and importantly, measuring performance, are prevalent throughout the examples. The care managers assess patient risks and needs, including comprehensive functional assessments and potential barriers to care. They closely monitor patients during office appointments; looking for gaps in understanding or the ability to comply with the established medical treatment plans; use phone calls and home visits to monitor patients after visits; and coordinate services such as diagnostic tests, transportation, social services, and specialist services. Care managers also serve as liaisons between the patient and other members of the care team across all settings. Leaders at Partners use data from the EDW to calculate the return on investment (ROI) for the iCMP, and to compare the iCMP patient outcomes to non-iCMP patients.

**In Patient CRM:** The most important parameter for a person visiting any hospital is the way of treatment he will get there. Winning over patient's faith is of utmost importance for the employees of the hospital. Presence of a clean environment and suitable hoteling and space in the hospital cannot attract the patient's trust and in fact hospital must show its ability to meet the patient's needs practically in terms of the manner of service delivery and the personnel-patient interaction. Right from the chief doctor to the ward boy, it is the duty of each and every employee to ensure patient satisfaction and proper training can be given in this regard. They should make the patient believe that the hospital is doing their level best to cure him. Clear instructions about the procedures should be given to the patients and their attendants to eliminate unnecessary steps and avoid hassles. If the private hospitals aim to enhance the patients' trust, the quality improvement efforts must focus on the managerial aspects of service delivery, such as scheduling, timely and careful doing of the services, and strengthening the interpersonal relationships as well as the communication skills of the physicians, nurses and other personnel.

**Out Patient CRM:** Out Patient CRM includes post discharge activities which help in maintaining and strengthening the relationship with the patients. Hospitals should record and maintain computerized database of each and every patient in detail which includes personal details of the patient, medical history, referred physicians, scheduled appointments, frequency of visits etc. This information would in turn help in other CRM activities of the post discharge period. Even after getting discharged from the hospital, the patient needs to come again for further treatment or checkup at regular intervals. These activities might include:

- Sending greetings and wishes on birthdays to the patients along with the offer of free health check-up. This would make the patient feel special and make him believe that the hospital still cares for him even after discharge.
- Maintaining a database would enable the hospital to send continuous reminder to the patients about the scheduled appointment and seek their confirmation that they would be coming.
- The hospitals can create "Rehabilitation Centers" for the patients who are suffering from long ailments. Once they are discharged from the hospital, the hospitals can arrange a visit to these centers for them where they can meet the people who are suffering from similar ailment or have already been treated for the same. This would give moral support to the patients and would curb the sense of insecurity and loneliness in them.
- The database helps the hospitals to get the proper understanding about the profile of patients who are visiting the hospital. It helps to list out the kind of disease from which most patients suffer from, their referral sources, the geographical areas from which the patients come from etc. Creating customer delight is crucial for any organization. Similarly, hospitals must also strive hard to achieve customer lifetime value by improving customer loyalty. CRM is not only confined to maintenance of database of every patient but it also about the use of technology to provide value added services to its customers. Apart from patients and attendants, now the hospitals are also driving their attention towards the customers i.e. the ones who are presently healthy and are availing the offers given by hospitals in terms of health packages and insurance schemes etc [1], [3], [11-13], [29]

**Exhibit 2. Improving the effectiveness and efficiency for outpatient services: Four domains of interventions [24]**

- **Transfer:** The substitution of services delivered by specialists for services delivered by primary care clinicians.
- **Relocation:** Shifting the venue of specialist care from outpatient clinics to primary care without changing the people who deliver the service.
- **Liaison:** Joint working between specialists and primary care clinicians to provide care to individual patients.
- **Professional behavior change:** Interventions intended to change the referral behavior of primary care clinicians, including referral guidelines, audit and feedback, professional education and financial incentives.
- **Patient behavior change:** Decision aids and aids to patient choice designed to influence decisions about referral to and discharge from specialist clinics.

**PRM and Industrial Age Medicine**

Patients who are more engaged with their care have better outcomes, and leading healthcare organizations are actively seeking to develop strategic approaches to promote this process. Many profit hunting HCEs are striving to improve patient satisfaction. Focus on patient satisfaction alone can actually be undesirable in terms of achieving cost-effective, high-quality care. For example, physicians have been known to inappropriately prescribe opioid pain drugs and antibiotics in order to protect patient satisfaction scores. To thrive in a value-driven reimbursement environment, providers will need

to adopt a sincere orientation towards patients and families in order to achieve significant activation and engagement. This process can result in stronger therapeutic alliances between providers and patients, improved patient decision-making, and better health outcomes. Stronger relationships between providers and patients can increase value, but these relationships cannot be forged by initiatives that focus merely on satisfaction. Just as companies outside the healthcare sector have developed systems, tools, and processes around CRM, healthcare organizations should build the same discipline around the concept of PRM [7], [14-23].



**Figure 3. Tools for Providing Excellent Communication in a Healthcare Setting** (Source: Web HHS, by Envision Creative Group). The AWARE mnemonic is a great way to improve communication in the healthcare environment. Communication with sending and receiving facilities, dispatch, and even with those on scene calls will only help increase the continuity of care. Patients and carers place high value on face-to-face communication with health-care professionals, who can engage on an emotional level, listening and assessing patients' information needs and providing information with clarity and sympathy. This is especially relevant when dealing with patients with a cancer diagnosis, who may be facing difficult or complex decisions about treatment options. Specific communication needs at different stages must also be considered—diagnosis, treatment, recurrence, palliative and terminal care. It is suggested that good communication is a pre-requisite for enabling patients and carers to make informed decision about care (Liptrott S, Peccatori F, Cocquio A, Martinelli G. Communication skills and raising awareness in clinical practice: an Italian experience. *Ecancermedalscience*. 2009;3:135).

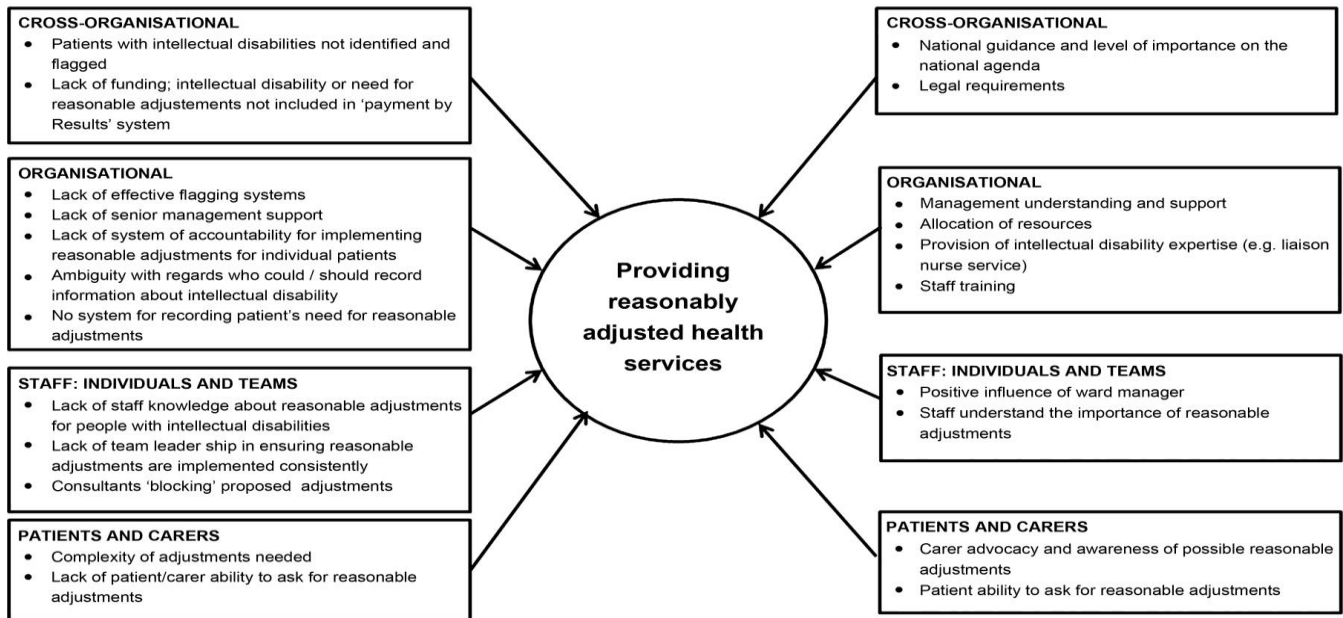
**Prompt Attention and Ensuring Hassle Free Service**

There is much that a concerted effort around PRM can address. Most importantly, delayed access to health care is assumed to negatively affect health outcomes due to delays in diagnosis and treatment. Patients still have to wait days together to see their physicians after scheduling an appointment. The actual doctor’s visit consumes an average of 2 h of a given patient’s time, the bulk of which entails travel and waiting, with precious little dedicated to face-time with providers. The Institute of Medicine recommends that at least 90% of patients should meet doctors within 30 minutes of their

scheduled appointment times. A waiting time is not only a factor that affects patient satisfaction but also one of indexes to evaluate the quality of services rendered to outpatients. Healthcare providers do not routinely check in on patients after even major changes to treatment regimens to assess efficacy, adherence, and side effects. Moreover, there is still no national mandate for providers to include patients’ caregivers around transitions of care. Patients and families deserve better healthcare delivery systems than they are currently getting, and a focus on PRM is one mechanism for realizing this aim [7], [30-33].

**Barriers**

**Enablers**



**Figure 4. Empirical framework: barriers and enablers in relation to provide reasonably adjusted health services to patients.**The findings reported here have been derived from across data sets. An empirical framework representing the full list of barriers and enablers in relation to providing reasonably adjusted health services for patients with intellectual disabilities is given. The adjustments needed by different patients with intellectual disabilities varied greatly. This lack of homogeneity could make it difficult for healthcare staff to know how to adjust their care for an individual patient. For example, one patient with intellectual disabilities would benefit from an early morning appointment in an outpatient clinic, so that the waiting area was not yet too busy and waiting times were kept to a minimum; for another patient, however, such an early appointment was prohibitively difficult, as it took him several hours to get ready in the morning(Tuffrey-Wijne I, Goulding L, Giatras N, et al The barriers to and enablers of providing reasonably adjusted health services to people with intellectual disabilities in acute hospitals: evidence from a mixed-methods study *BMJ Open* 2014;4:e004606. doi: 10.1136/bmjopen-2013-004606).

**To ensure actual benefit of the patient**

Patients often demand things they don’t need, like expensive antibiotics for a cold or an MRI for low back pain, and providers may be confronted with requests for items that they don’t know the value of, such as back stretchers for cervical radiculopathy. Physicians will need access to the best evidence on therapies and technologies, and must also become skilled at

explaining to patients why they will not benefit from things that are unlikely to help them. Clearly, this will be a delicate balance. Health care system is characterized by high and rising healthcare costs as well as gaps in quality, safety, equity, and access. With limited healthcare budgets, it is important that resources are used in a way that provides the most value for patients.US healthcare system faces daunting challenges

in the years ahead. Increasing costs, limitations in access to care, and variability in the quality of care delivered threaten the long-term viability of the system. According to the MedPAC, Medicare enrollment is projected to increase by more than 50% over the next 15 years from 54 million beneficiaries today to more than 80 million in 2030. Among the oldest Americans, the Census predicts that the population age 85 and above will double by 2036 and triple by 2049. Benefits in healthcare include both the quality and patient experience associated with the provision of healthcare services. While value-based purchasing (VBP) can refer to a wide variety of payment strategies that link provider performance and reimbursement, this paper will focus on VBP programs where providers are paid fee-for-service with payment adjustments up or down based on value metrics, a structure also known as pay-for-performance. This trend has led to calls for multi-stakeholder collaboration to improve quality and reduce the cost of healthcare, and to increase transparency regarding the cost and quality of healthcare services. As a result, a number of payment and delivery reforms have recently emerged, which attempt to promote higher value healthcare. Long-term success is predicated on the creation of patient-centric value creation (eg, higher quality, patient-centered care at a lower cost). The Institute of Medicine has emphasized value as an important part of improving health care systems, and the American College of Physicians has launched the High Value Care Initiative. It is an increasingly important concept in medicine and rehabilitation, home care, long

term care, hospice and other similar HCEs. The value-based system refers to a personalized care, where patient expectations and needs are included in a holistic approach of medicine that considers physical, mental, and spiritual well-being. Providers should also assess their risk tolerances and organizational cultures. At the micro level, the quality-cost relationship is focused on the impact of health care service delivery on individual patients, as well as on the decisions of individual providers and organizations that manage the care. At the macro level, this relationship is evaluated based on population impact and the costs to society to achieve a positive health status for large cohorts of people. Achieving success in value-based payment and delivery requires an organizational culture that emphasizes and facilitates high-quality, safe, patient-centered, cost-effective care. It also requires strong physician leadership and a willingness to change often longstanding practice patterns and systems of care. Finally, organizations should define in advance the metrics they will use to evaluate and monitor successes or failures. Thus, aligning PRM with an appropriate reimbursement model is essential—in a fee-for-service reimbursement environment, utilizing PRM to deliver an ever-growing set of unnecessary services would be a real risk. As emerging reimbursement schemes increasingly reward true healthcare value creation, provider organizations will find incorporating PRM to be a key element of a winning strategy.

**Exhibit 3. The key principles of advanced access [32]**

Key principles of Advanced Access	Definition
<i>Balance supply and demand</i>	To assess and understand, on the one hand, the actual patient demand for appointments per physician per day, weighted by the patients' status and, on the other hand, the supply (e.g., number of appointments offered), in order to achieve the right balance between the two, matching demand with supply. Strategies to decrease demand for visits (e.g., max pack, extending visit intervals) or to increase supply (e.g., redesigning doctor scheduling systems) are used.
<i>Reduce the backlog of previously scheduled appointments</i>	To eliminate previously scheduled appointments (wait list) through many strategies, such as adding resources or increasing the supply of visits during a period of time. A communication strategy must also be put in place to inform and educate patients about the new advanced access model.
<i>Review the appointment system</i>	To plan physicians' schedules over a short term (2–4 weeks) and smooth out the demand for visits in order to offer same-day appointments for acute and urgent cases.
<i>Integrate inter-professional practice</i>	To develop or enhance inter-professional practice between physicians and other healthcare providers (e.g., nurses). Professional roles need to be optimized and tasks need to be clarified to respond to patient needs in a timely manner.
<i>Develop contingency plans</i>	To plan for seasonal increases in demand and to develop coverage plans for replacing medical staff or other healthcare providers during vacation and sick leave. Many strategies are applied, such as increasing the number of slots prior to leave and after returning to duty, hiring temporary providers, and distributing and matching staffing competencies to demand. Integrating collaborative and interdisciplinary practice facilitates planning for periods of absence.



## Conclusion

Reflecting on the future state of our healthcare delivery system, it is important to note that high levels of satisfaction and high care quality do not always align. A national study demonstrated that higher patient satisfaction was correlated with higher total healthcare expenditure and increased mortality. Patients often demand things they don't need, like expensive antibiotics for a cold or an MRI for low back pain, and providers may be confronted with requests for items that they don't know the value of, such as back stretchers for cervical radiculopathy. Physicians will need access to the best evidence on therapies and technologies, and must also become skilled at explaining to patients why they will not benefit from things that are unlikely to help them. Clearly, this will be a delicate balance. Furthermore, while the take aways

described by the three companies are important lessons for healthcare leaders to internalize, they must do so in a measured way that acknowledges the inherent differences between operating a healthcare delivery enterprise and operating a service enterprise outside the healthcare domain. In the latter, the primary goal is to deliver service excellence in order to increase customers' willingness to pay and/or to increase the rate of return customers. Healthcare, of course, is different. Maximizing value delivery in healthcare services will mean improving the health of patients in part by avoiding costly acute care services. It may also be hard for patients to fully judge the value of a healthcare service even after that service is provided. Thus, aligning PRM with an appropriate reimbursement model is essential—in a fee-for-service reimbursement environment, utilizing PRM to deliver an ever-growing set of unnecessary services would be a real risk. As emerging reimbursement schemes increasingly reward true healthcare value creation, provider organizations will find incorporating PRM to be a key element of a winning strategy.

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